Congress Mobile Page

WBC 2024

12th World Biomaterials Congress

May 26-31, 2024 | EXCO, DAEGU, KOREA

Program Book

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Structure–Property–Function Relationships in Biomaterials

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JBK LAB HEALTH STARTS HERE

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WBC 2024

12th World Biomaterials Congress

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12th World Biomaterials Congress

Congress Mobile Page

We encourage using the on-site mobile page before, during, and after the congress to get information in real-time. To do so, scan the QR Code below.

Welcome Messages

On behalf of the organizing committee, I am pleased to invite all of you to the 12th World Biomaterials Congress (WBC 2024).

The World Biomaterials Congress (WBC) has been held every four years since 1980 and is considered the most prominent scientific congress in its field. It is attended by over 4,000 scientists from around the globe in the field of biomaterials.

The 12th Congress will provide a fascinating opportunity for participants to share the latest discoveries and knowledge in diverse fields of biomaterials research and related areas under the main theme of 'Convergence in Biomaterials: a vision for the future of healthcare, including 7 keynote talks, symposiums, and workshops.

We have organized scientific sessions that cover a variety of biomaterials fields, featuring renowned speakers and the latest findings. These sessions provide participants with the opportunity to share their thoughts and ideas with the biomaterial community.

The congress aims to foster industry-academic cooperation and networking through academic research presentations, participation, and promotion of related companies for client acquisition.

Korea is a unique East Asian country with beautiful nature, a long history, and a culture.
Recently, the K-Wave has received worldwide attention. We have arranged a variety of cultural experiences and optional tour programs for participants to enjoy during their time in Daegu.
I would like to invite you to share your academic achievements and enjoyable cultural experiences together.

Once again, we welcome you to WBC 2024 and hope you will take full advantage of the programs we have prepared for you.

Thank you.

Ki Dong Park, Ph.D., FBSE
Congress Chiar, WBC 2024
Ajou University

Welcome Messages

Welcome Message from the President of the International Union of Societies for Biomaterials Science and Engineering (IUSBSE)

It is with great pleasure and excitement that I extend a warm welcome to all participants of the World Biomaterials Congress (WBC) 2024, hosted by the Korean Society for Biomaterials on behalf of the International Union of Societies for Biomaterials Science and Engineering (IUSBSE).

Nestled amidst picturesque landscapes and steeped in rich cultural heritage, Daegu offers a captivating blend of tradition and modernity. Known for its warm hospitality, delicious cuisine, and bustling markets, Daegu promises to provide an unforgettable backdrop for WBC2024, offering ample opportunities to explore, engage, and network with colleagues from around the world.

I greatly appreciate the leadership of Professor Ki Dong Park and the meticulous planning and attention to detail by the entire WBC team. I extend my sincere appreciation to the Local Organizing Committee, whose tireless efforts and unwavering dedication have made WBC 2024 a reality. Thanks to all these efforts, WBC2024 will be a seamless and enriching experience for all participants. I am delighted that so many students and young scientists have been able to come to Daegu, and I extend a special welcome to them.

As we gather in Daegu, a city vibrant with energy and innovation, let us seize this moment to celebrate the remarkable achievements of our field. As we dive into the scientific program of keynote lectures, symposia, workshops, and poster presentations, WBC2024 will foster new collaborations, inspire innovative research, and shape the future trajectory of biomaterials science and engineering. I am confident that WBC2024 will help us chart a course toward a future where biomaterials play a central role in transforming healthcare and improving human well-being.

I am truly honored to serve as President of IUSBSE during this wonderful event, and I look forward to the inspiring discussions, groundbreaking discoveries, and treasured memories that await us at WBC 2024.

Joachim Kohn, PhD, FBSE

Joachim Kohn, Ph.D., FBSE
President, IUSBSE
Rutgers University

Welcome Messages

It is my distinct pleasure to extend a warm welcome to all participants of the 12th World Biomaterials Congress (WBC 2024), hosted by The Korean Society for Biomaterials (KSBM), in the vibrant city of Daegu, Korea, from May 26th to 31st, 2024.

As President of KSBM, I am honored to welcome WBC back to Daegu, Korea, in Asia after 12 years. I believe that WBC 2024 will be more than just a congress; it will be a catalyst for collaboration, innovation, and transformation. World Biomaterial Congress, which originated in Vienna in 1980, has grown into a significant event reflecting society members' dedication and hard work over the years. I am grateful for their tireless efforts in preparing for this momentous occasion.

It is a great opportunity for participants to listen to presentations on the latest research and developments in biomaterials, engage in thought-provoking discussions, and network with peers and experts from across the globe.

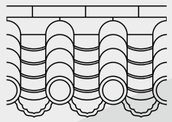
The WBC Organizing Committee has been working hard to prepare for a great event. May this congress inspire new collaborations, foster meaningful connections, and pave the way for groundbreaking biomaterials science and engineering advancements. I believe it will be a great opportunity for the participants.

The success of the conference will rely on your contribution and participation.
Join us in Daegu as we explore the forefront of biomaterials science and engineering.

Welcome and I hope we can listen to the presentation on WBC and network with each other.

Kun Na, Ph.D., FBSE
President, The Korean Society for Biomaterials
The Catholic University of Korea

12th World
Biomaterials
Congress



Detailed Program

WBC 2024
12th World Biomaterials Congress

Day 1 May 26 (Sun)

Time	May 26 (Sun)
16:00 - 18:00	Registration (Lobby, 3F, EXCO)
18:00 - 20:00	Welcome Reception (Grand Ballroom, B1, Hotel Inter-Burgo EXCO)

Day 2 May 27 (Mon)

Time	May 27 (Mon)						
07:00 - 09:00	Registration (Lobby, 3F, EXCO)						
09:00 - 10:20	Opening Ceremony						
10:20 - 10:40	Coffee Break (Grand Ballroom, 3F, EXCO)						
10:40 - 11:30	**Plenary Lecture 1 - Dr. Nicholas A. Peppas** (Convention Hall, 5F, EXCO)						
11:30 - 13:00	Lunch						
13:00 - 14:30	Concurrent Symposium 1						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	S1-1	**S1-2**	**S1-3**	**S1-4**	**S1-5**	**S1-6**	**S1-7**
	SP-T01-0372	**SP-T02-0090**	**SP-T03-0358**	**SP-T04-0292**	**SP-T06-0278**	**SP-T12-0269**	**SP-T01-0184**
	Advanced Biomaterials for Wet Tissue Adhesion	Novel and multiple fabrication processes	Extracellular vesicles-based nanomedicine for theranostics	3D Organoids for Disease Modeling and Tissue Regeneration	Biomaterials for environment sensitive drug release	Smart biomaterials for the modulation of inflammation	Hierarchical biomaterials from particulate building blocks
14:30 - 14:40	Break						
14:40 - 16:10	Concurrent Symposium 2						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	S2-1	**S2-2**	**S2-3**	**S2-4**	**S2-5**	**S2-6**	**S2-7**
	SP-T01-0152	**SP-T02-0389**	**SP-T03-0351**	**SP-T04-0291**	**SP-T06-0274**	**SP-T12-0299**	**SP-T01-0239**
	Biomaterials with micro/nano patterns	Biofunctional material and this use in medical device application	Nanomedicine for Immunothe-rapeutics	Neuronal tissue engineering	Biomaterials for advanced imaging and diagnostic technologies	Biomaterials Functionalization with Tethered Growth Factors and Proteins for Tissue Engineering Applications	Enzyme and Protease-responsive biomaterials
16:10 - 16:30	Coffee Break						
16:30 - 18:00	Concurrent Symposium 3						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	S3-1	**S3-2**	**S3-3**	**S3-4**	**S3-5**	**S3-6**	**S3-7**
	SP-T11-0386	**SP-T02-0267**	**SP-T03-0344**	**SP-T04-0316**	**SP-T06-0276**	**SP-T12-0237**	**SP-T01-0233**
	Symposium on Frontiers of Biomaterials Science and Engineering in Honor of Professor Xingdong Zhang	Volumetric tissue printing	Platform technology for theranostics	Reproducing Reproductive Organs/Tissues via Tissue Engineering	Biomaterials for gene delivery applications	Elastin-based biomaterials	Plant and Polysaccharide-based biomaterials
18:00 - 19:00	Poster Session 1 (Grand Ballroom, 3F, EXCO)						

Time	May 27 (Mon)							
07:00 - 09:00	Registration (Lobby, 3F, EXCO)							
09:00 - 10:20	Opening Ceremony (Convention Hall, 5F, EXCO)							
10:20 - 10:40	Coffee Break							
10:40 - 11:30	**Plenary Lecture 1 - Dr. Nicholas A. Peppas** (Convention Hall, 5F, EXCO)							
11:30 - 13:00	Lunch							
13:00 - 14:30	Concurrent Symposium 1							Workshop 1
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315	Room 211
	S1-8	**S1-9**	**S1-10**	**S1-11**	-	**S1-13**	**S1-14**	**W1-1**
	SP-T01-0160	**SP-T04-0249**	**SP-T05-0333**	**SP-T07-0063**	-	**SP-T09-0367**	**SP-T10-0037**	**WP-0021**
	Bioinspired Biomaterials and Strategies for Tissue Engineering	Biomaterials and Modular Approaches in Tissue Engineering and Regenerative Medicine	Characterization of biodegradable metals	Ex vivo model systems for cancer immunotherapy	-	Micro- and Nanotechnology for clinical diagnostics	Extracellular vesicles for biomedical applications	Recent Advanced in 3D Printing and Bioprinting for Medical Applications **(13:00-16:00)**
14:30 - 14:40	Break							
14:40 - 16:10	Concurrent Symposium 2							
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315	
	S2-8	**S2-9**	**S2-10**	**S2-11**	**S2-12**	**S2-13**	**S2-14**	
	SP-T01-0158	**SP-T04-0199**	**SP-T05-0334**	**SP-T07-0208**	**SP-T08-0116**	**SP-T09-0366**	**SP-T10-0364**	
	Advanced hemocompatible coatings	Controlling degradation of bioresorbable materials to direct cell behavior	Characterization of cell-scaffold interface in nanoscale for therapeutic applications	Biomaterials for Organoids	Clinically relevant dental biomaterials	Emerging biomaterials: From bench to startup	Biomineralization and biotemplating	
16:10 - 16:30	Coffee Break							
16:30 - 18:00	Concurrent Symposium 3							Workshop 2
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315	Room 211
	S3-8	**S3-9**	**S3-10**	**S3-11**	**S3-12**	**S3-13**	**S3-14**	**W2-1**
	SP-T01-0221	**SP-T04-0217**	**SP-T05-0335**	**SP-T07-0064**	**SP-T08-0264**	**SP-T09-0218**	**SP-T10-0390**	**WP-0025**
	Dynamic Hydrogels	The Macrophage as a target in biomaterial-based tissue regeneration strategies	Bio-fabrication/ bioprinting and characterization for biomedical application	In vitro microphysiological systems for studying tumor microenvironment	Biomaterials Interventions in Aging Around the World	Drop-based microfluidic technologies	DNA or RNA Nanotechnologies	Biomaterials Science Excellence and Technology Translation **(16:00-19:00)**
18:00 - 19:00	Poster Session 1 (Grand Ballroom, 3F, EXCO)							

Day 3 May 28 (Tue)

Time	May 28 (Tue)						
07:00 -09:00	Registration (Lobby, 3F, EXCO)						
08:30 - 09:30	Oral Session 1						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	OS1-1	**OS1-2**	**OS1-3**	**OS1-4**	**OS1-5**	**OS1-6**	**OS1-7**
	T01 / SP-T13-0408	**T02 / SP-T13-0417**	**T03 / SP-T13-0420**	**T04 / SP-T13-0424**	**T06 / SP-T13-0435**	**T12 / SP-T13-0447**	**T01 / SP-T13-0405**
	Hydrogel 1	Diverse fabrication technology 1	Biomaterials for treatment of bone-related diseases and Bone regeneration	Biomaterials scaffolds 1	Biomaterials for medical applications 1	Natural biomaterials for regenerative medicine	Bioceramics 1
09:30 - 11:00	Concurrent Symposium 4						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	S4-1	**S4-2**	**S4-3**	**S4-4**	**S4-5**	**S4-6**	**S4-7**
	SP-T02-0145	**SP-T02-0112**	**SP-T03-0343**	**SP-T04-0282**	**SP-T06-0057**	**SP-T12-0323**	**SP-T01-0229**
	Biofabrication strategies to engineer complex tissues	Bio-hybrid tissue printing	Engineering of biomaterials for drug delivery	Learning from Successful Failures in Tissue Engineering & Regenerative Medicine	Challenge to Microbiology Using Nanomaterials	Bioactive Materials and Structures for Tissue Interface Engineering	Synthetic protein-complexing hydrogel materials to direct cell fate
11:00 - 11:20	Coffee Break						
11:20 - 12:10	**Plenary Lecture 2 - Dr. Pamela Habibovic** (Convention Hall, 5F, EXCO)						
12:20 - 13:30	Lunch & Luncheon Seminar 1						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	LS1-1	**LS1-2**	**LS1-3**	-	**LS1-4**	**LS1-5**	**LS1-6**
	SP-T14-0402	**SP-T14-0467**	**SP-T14-0459**	-	**WP-0041**	**SP-T14-0464**	**SP-T14-0378**
	Meet editors related to biomaterials	Company seminar (DENTIS / Dalim Tissen) **(12:20-13:10)**	Women in Biomaterials Science **(12:20-13:20)**	-	Young Scientist Forum (YSF) I: Successful career development **(12:20-13:20)**	Company Seminar (MAVERICK / Desktop Health™) **(12:20-13:10)**	FBSE WBC - Fellows Debate
13:40 - 15:10	Concurrent Symposium 5						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	S5-1	**S5-2**	**S5-3**	**S5-4**	**S5-5**	**S5-6**	**S5-7**
	SP-T01-0125	**SP-T02-0156**	**SP-T03-0353**	**SP-T04-0288**	**SP-T06-0275**	**SP-T12-0286**	**SP-T01-0225**
	Roles of interfacial water states on cells/ proteins/materials interactions and Biomaterials design	Converged Technologies towards Tissue Biofabrication	Biomaterial-assisted gene therapy to treat musculoskeletal disorders	Musculoskeletal tissue engineering	Biomaterials in regeneration applications and drug delivery	Directing cell fate & tissue regeneration by extracellular matrix signalling	Supramolecular Nanomaterials
15:10 - 15:20	Break						
15:20 - 16:10	**Plenary Lecture 3 - Dr. Yunbing Wang** (Convention Hall, 5F, EXCO)						
16:10 - 16:30	Coffee Break						
16:30 - 18:00	Concurrent Symposium 6						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	S6-1	**S6-2**	**S6-3**	**S6-4**	**S6-5**	**S6-6**	**S6-7**
	SP-T01-0079	**SP-T02-0123**	**SP-T11-0397**	**SP-T04-0369**	**SP-T06-0384**	**SP-T12-0266**	**SP-T11-0375**
	Functional materials for nerve regeneration	Frontiers in Biofabrication Technologies	Biomaterials Award Session	Granular Biomaterials for Tissue Engineering	Biomaterials meets glia: biomaterials applications to study glia and gliopathologies	Smart biomaterials for the modulation of inflammation and coagulation process	Canadian Biomaterials Society Award Presentation Symposium
18:00 - 19:00	Poster Session 2 (Grand Ballroom, 3F, EXCO)						
19:00 - 21:00	Young Investigators' & Students' Night (Event Hall, 2F, Fashion Center Korea)						

Time	May 28 (Tue)							
07:00 -09:00	Registration (Lobby, 3F, EXCO)							
08:30 - 09:30	Oral Session 1							
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315	Room 211
	OS1-8	**OS1-9**	**OS1-10**	**OS1-11**	**OS1-12**	**OS1-13**	**OS1-14**	**OS1-15**
	T02 / SP-T13-0413	**T06 / SP-T13-0433**	**T05 / SP-T13-0428**	**T07 / SP-T13-0439**	**T08 / SP-T13-0454**	**T09 / SP-T13-0444**	**T10 / SP-T13-0446**	**T03 / SP-T13-0451**
	Technology for Additive Manufacturing 1 (Non-polymeric)	Biomaterials tissue regeneration 1	Recent Advances in biomaterial Science and Engineering 1	Biomaterials for organoids and organ models 1	Dental & Craniofacial biomaterials 1	Designer biomaterials using microfluidics	Biosensors and Bioelectronics	CRISPR and Gene editing, therapy technology
09:30 - 11:00	Concurrent Symposium 4							
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315	Room 211
	S4-8	**S4-9**	**S4-10**	**S4-11**	**S4-12**	**S4-13**	**S4-14**	-
	SP-T01-0215	**SP-T04-0204**	**SP-T05-0336**	**SP-T07-0065**	**SP-T08-0071**	**SP-T09-0149**	**SP-T10-0363**	-
	Advanced sustainable hydrogels for smart wearable technologies	Hydrogels for fibrocartilage regeneration	Materials and characterizations for cardiovascular applications	Microphysiological systems for modeling pathologies of central nervous system	Biomaterials for cardiovascular disease models and therapeutics	Nano- and microencapsulation technologies	Nucleic acid nanotechnology-based therapeutics and diagnostics	-
11:00 - 11:20	Coffee Break							
11:20 - 12:10	**Plenary Lecture 2 - Dr. Pamela Habibovic** (Convention Hall, 5F, EXCO)							
12:20 - 13:30	Lunch & Luncheon Seminar 1							
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315	Room 211
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
13:40 - 15:10	Concurrent Symposium 5							
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315	Room 211
	S5-8	**S5-9**	**S5-10**	**S5-11**	**S5-12**	**S5-13**	**S5-14**	-
	SP-T01-0186	**SP-T04-0176**	**SP-T05-0148**	**SP-T07-0075**	**SP-T08-0385**	**SP-T09-0140**	**SP-T10-0052**	-
	Programming dynamic materials for engineering functional tissues	Advanced biofabrication techniques for musculoskeletal tissue engineering	Antifouling biomaterials and surface characterization	Imaging and spectroscopic analysis of biomaterials and biological systems	Clinical Translation of Biodegradable Materials	Biomedical technology based on rheology	Immunoengineering Redefines Biocompatibility	-
15:10 - 15:20	Break							
15:20 - 16:10	**Plenary Lecture 3 - Dr. Yunbing Wang** (Convention Hall, 5F, EXCO)							
16:10 - 16:30	Coffee Break							
16:30 - 18:00	Concurrent Symposium 6							Workshop 3
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315	Room 211
	S6-8	**S6-9**	**S6-10**	**S6-11**	**S6-12**	**S6-13**	**S6-14**	**W3-1**
	SP-T01-0139	**SP-T04-0164**	**SP-T05-0318**	**SP-T07-0349**	**SP-T08-0311**	**SP-T09-0320**	**SP-T10-0185**	**WP-0024**
	Bioadhesive Biomaterials	Biomaterials for the Maternal-Fetal Interface	Design, Fabrication and Evaluation of Biomedical Textiles	Liquid biopsy for cancer diagnosis and prognosis	Regulatory science for the translation of biomaterials products	Biomaterials' challenges: From academia to industry	Emerging Nanobiomaterials and Nanofabrication	Explore a better future with advanced science and technology **(16:30-18:40)**
18:00 - 19:00	Poster Session 2 (Grand Ballroom, 3F, EXCO)							
19:00 - 21:00	Young Investigators' & Students' Night (Event Hall, 2F, Fashion Center Korea)							

Day 4 May 29 (Wed)

Time	May 29 (Wed)						
07:00 -08:30	Registration (Lobby, 3F, EXCO)						
08:30 - 09:30	Oral Session 2						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	OS2-1	**OS2-2**	**OS2-3**	**OS2-4**	**OS2-5**	**OS2-6**	**OS2-7**
	T01 / SP-T13-0409	**T02 / SP-T13-0418**	**T03 / SP-T13-0419**	**T04 / SP-T13-0425**	**T06 / SP-T13-0436**	**T12 / SP-T13-0448**	**T01 / SP-T13-0407**
	Hydrogel 2	Diverse fabrication technology 2	Inorganic materials for therapeutic agents	Biomaterials scaffolds 2	Biomaterials for medical applications 2	Functional nanobiomaterials for tissue engineering 1	Bioceramics 2
09:30 - 11:00	Concurrent Symposium 7						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	S7-1	**S7-2**	**S7-3**	**S7-4**	**S7-5**	**S7-6**	**S7-7**
	SP-T01-0078	**SP-T02-0135**	**SP-T03-0173**	**SP-T04-0290**	**SP-T06-0277**	**SP-T12-0295**	**SP-T01-0212**
	Electrically conductive polymers for bioelectrode applications	Micro/nano-patterning	Biomaterials for Biomedical Imaging: Applications and Challenges	Soft tissue regeneration	Biomaterials for polymeric therapeutics	Marine biomaterials towards tissue engineering	Self-assembling polymeric biomaterials for healthcare
11:00 - 11:20	Coffee Break						
11:20 - 12:10	**Plenary Lecture 4 - Dr. Takao Hanawa** (Convention Hall, 5F, EXCO)						
12:20 - 13:30	Lunch & Luncheon Seminar 2						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	LS2-1	**LS2-2**	**LS2-3**	-	**LS2-4**	**LS2-5**	**LS2-6**
	SP-T14-0461	**SP-T14-0462**	**SP-T14-0388**	-	**WP-0045**	**WP-0044**	**WP-0032**
	Company Seminar (GENOSS) (**12:20-13:10**)	Company Seminar (Rousselot / Readily3D) (**12:20-13:10**)	Biomaterials Education Symposium at the WBC 2024	-	Young Scientist Forum (YSF) II: The past, present, and future of Biomaterials Research (meeting mentors) (**12:20-13:20**)	Bridging the gap between preclinical and clinical research	New PI in Biomaterials Research
13:40 - 15:10	Concurrent Symposium 8						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	S8-1	**S8-2**	**S8-3**	**S8-4**	**S8-5**	**S8-6**	**S8-7**
	SP-T01-0322	**SP-T02-0356**	**SP-T03-0153**	**SP-T04-0313**	**SP-T06-0128**	**SP-T12-0222**	**SP-T11-0046**
	Engineering regenerative biomaterials through bioinspired and biocooperative approaches	Biofabrication in Suspensions Media for Tissue Engineering and In Vitro Modeling	Biomaterials for Image-guided Therapy	Novel strategy for bone tissue engineering in oro-maxillofacial region	Biomaterials for Antimicrobial and/or Antifouling coatings	Precision Medicine in Biomaterials Application for Regeneration	SFB Awards Ceremony and Plenary Presentations 1
15:10 - 15:20	Break						
15:20 - 16:10	**Plenary Lecture 5 - Dr. Paula T. Hammond** (Convention Hall, 5F, EXCO)						
16:10 - 16:30	Coffee Break						
16:30 - 18:00	Concurrent Symposium 9						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	S9-1	**S9-2**	**S9-3**	**S9-4**	**S9-5**	**S9-6**	**S9-7**
	SP-T11-0265	**SP-T11-0396**	**SP-T03-0100**	**SP-T04-0305**	**SP-T02-0154**	**SP-T12-0213**	**SP-T11-0482**
	100 Years of Biomaterials Design Contributions of Edward Merrill (1923-2020)	Acta Biomaterialia: Global Perspectives in Launching an Independent Caree	Ferroptosis-mediated cancer target therapy (Sponsored by Methods, an Elsevier's interdisciplinary journal in life and medical sciences)	Tissue-specific Strategies for Soft Connective Tissue Regeneration	3D Printing and Biofabrication in TERM, on the way to translation	Bioenergetic-active Materials for Regenerative Engineering	SFB Awards Ceremony and Plenary Presentations 2
18:00 - 19:00	Poster Session 3 (Grand Ballroom, 3F, EXCO)						
19:00 - 21:00	Congress Dinner (Grand Ballroom, B1, Hotel Inter-Burgo EXCO)						

Time	May 29 (Wed)						
07:00 -08:30	Registration (Lobby, 3F, EXCO)						
08:30 - 09:30	Oral Session 2						
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315
	OS2-8	**OS2-9**	**OS2-10**	**OS2-11**	**OS2-12**	**OS2-13**	**OS2-14**
	T02 / SP-T13-0472	**T06 / SP-T13-0434**	**T05 / SP-T13-0429**	**T07 / SP-T13-0440**	**T08 / SP-T13-0443**	**T09 / SP-T13-0445**	**T05 / SP-T13-0430**
	Technology for Additive Manufacturing 2 (Non-polymeric)	Biomaterials tissue regeneration 2	Recent Advances in biomaterial Science and Engineering 2	Biomaterials for organoids and organ models 2	Dental & Craniofacial biomaterials 2	Fabrication of biomaterials with bioindustrial applicability	Recent Advances in biomaterial Science and Engineering 3
09:30 - 11:00	Concurrent Symposium 7						
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315
	S7-8	**S7-9**	**S7-10**	**S7-11**	**S7-12**	**S7-13**	**S7-14**
	SP-T01-0137	**SP-T04-0146**	**SP-T05-0329**	**SP-T07-0070**	**SP-T08-0198**	**SP-T09-0157**	**SP-T10-0124**
	Thermo responsive hydrogels and their biomedical applications	Functional nanomaterials for tissue engineering	Bioinspired antimicrobial and hemocompatible materials	Optical biosensors for fast and accurate diagnosis	Clinical application of biomaterials in Orthopaedic field	Biodegradable Metals for Medical Devices	Biomaterials for immunoisolation
11:00 - 11:20	Coffee Break						
11:20 - 12:10	**Plenary Lecture 4 - Dr. Takao Hanawa** (Convention Hall, 5F, EXCO)						
12:10 - 13:40	Lunch & Luncheon Seminar 2						
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
13:40 - 15:10	Concurrent Symposium 8						
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315
	S8-8	**S8-9**	**S8-10**	**S8-11**	**S8-12**	**S8-13**	**S8-14**
	SP-T01-0119	**SP-T04-0134**	**SP-T05-0391**	**SP-T07-0122**	**SP-T08-0259**	**SP-T09-0103**	**SP-T10-0085**
	Material Symbiosis: Beyond Biocompatibility	Advanced biofabrication for tissue engineering and disease modeling	Applications for Biomedical Fibrous Materials	3D-Tissue Models for Infection and Immunological Assays	Translation of bioactive ceramics from bench to bedside and emerging technologies for patient specific approaches	Biomaterials-based startups for tissue engineering	Biomaterials and Fabrication for Multicellular Engineered Systems
15:10 - 15:20	Break						
15:20 - 16:10	**Plenary Lecture 5 - Dr. Paula T. Hammond** (Convention Hall, 5F, EXCO)						
16:10 - 16:30	Coffee Break						
16:30 - 18:00	Concurrent Symposium 9						
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315
	S9-8	**S9-9**	**S9-10**	**S9-11**	**S9-12**	**S9-13**	**S9-14**
	SP-T01-0130	**SP-T04-0104**	**SP-T06-0247**	**SP-T07-0174**	**SP-T08-0243**	**SP-T06-0058**	**SP-T10-0094**
	Nature-inspired solutions: Bio-inspired hydrogels for new therapies and additive manufacturing	Biomaterials for 3D stem cell mechanotransduction and differentiation	Discovery, characterisation and applications of immune-instructive materials	Biomaterial-based platforms for tumor tissue engineering	Biomaterials in Stomatology Application and Clinical Translation	Biomaterials from Creation to the Present and Beyond	Biomaterials for Cultured Meat Production
18:00 - 19:00	Poster Session 3 (Grand Ballroom, 3F, EXCO)						
19:00 - 21:00	Congress Dinner (Grand Ballroom, B1, Hotel Inter-Burgo EXCO)						

Day 5 May 30 (Thu)

Time	May 30 (Thu)						
07:00 -08:30	Registration (Lobby, 3F, EXCO)						
08:30 - 09:30	Oral Session 3						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	OS3-1	**OS3-2**	**OS3-3**	**OS3-4**	**OS3-5**	**OS3-6**	**OS3-7**
	T01 / SP-T13-0410	**T02 / SP-T13-0415**	**T03 / SP-T13-0450**	**T04 / SP-T13-0426**	**T06 / SP-T13-0437**	**T12 / SP-T13-0449**	**T01 / SP-T13-0412**
	Hydrogel 3	Technology for biofabrication 1	Smart materials for drug delivery	Biomaterials scaffolds 3	Biomaterials for medical applications 3	Functional nanobiomaterials for tissue engineering 2	Metals
09:30 - 11:00	Concurrent Symposium 10						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	S10-1	**S10-2**	**S10-3**	**S10-4**	**S10-5**	**S10-6**	**S10-7**
	SP-T01-0086	**SP-T06-0216**	**SP-T03-0138**	**SP-T04-0304**	**SP-T06-0339**	**SP-T12-0211**	**SP-T01-0209**
	Microgels for Microtissues	Biomaterials and devices for cardiovascular applications	Biomaterials for Drug Delivery and Tissue Regeneration	Bone biomaterials for the elderly patients	Advanced Biomaterials and Nanomaterials for Implantable Devices	Extracellular matrix for mechanobiology and therapeutics	Biomimetic surface design for implantable devices
11:00 - 11:20	Coffee Break						
11:20 - 12:10	**Plenary Lecture 6 - Dr. João F. Mano** (Convention Hall, 5F, EXCO)						
12:20 - 13:30	Lunch & Luncheon Seminar 3						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	LS3-1	-	**LS3-2**	-	**LS3-3**	-	-
	SP-T14-0460	-	**SP-T14-0458**	-	**WP-0046**	-	-
	Company Seminar (Dentium) (**12:20-13:10**)	-	Regulatory perspectives on biologics composed of cell therapy and biomaterials	-	Young Scientist Forum (YSF) III: Experience from academic research to commercialization, start-up company (**12:20-13:20**)	-	-
13:40 - 15:10	Concurrent Symposium 11						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	S11-1	**S11-2**	**S11-3**	**S11-4**	**S11-5**	**S11-6**	**S11-7**
	SP-T01-0300	**SP-T02-0142**	**SP-T03-0133**	**SP-T04-0285**	**SP-T06-0254**	**SP-T12-0202**	**SP-T01-0236**
	Leveraging cell microenvironment and immune system to heal and regenerate	Additive manufacturing of biomaterials	Biomaterials for theranostics	Nanofiberous scaffold for tissue engineering	Biomaterials for women's health engineering	Electroactive Biomaterials for Tissue Engineering and of Regenerative Medicine Applications	Biomimetic structured materials
15:10 - 15:20	Break						
15:20 - 16:10	**Plenary Lecture 7 - Dr. Ick Chan Kwon** (Convention Hall, 5F, EXCO)						
16:10 - 16:30	Coffee Break						
16:30 - 18:00	Concurrent Symposium 12						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	S12-1	**S12-2**	**S12-3**	**S12-4**	**S12-5**	**S12-6**	**S12-7**
	SP-T11-0392	**SP-T02-0284**	**SP-T11-0395**	**SP-T04-0289**	**SP-T06-0077**	**SP-T06-0042**	**SP-T11-0348**
	Mechanobiology with Biomaterials (in conjunction with MRC Mechanobiology Dental Medicine Research Center)	Exploring the Frontiers of Micro-Nano Surface Engineering of Biomaterials	Acta Biomaterialia Gold and Silver Medal, 2024, Technical Session (**16:30-18:30**)	Translational Regenerative Medicine	Biomaterials for Wearable and Implantable Medical Devices, Sensors, and Electronics	Sex as a biological variable in biomaterials research	ESB International Award 2024 Symposium
18:00 - 19:00	Poster Session 4 (Grand Ballroom, 3F, EXCO)						

Time	May 30 (Thu)						
07:00 -08:30	Registration (Lobby, 3F, EXCO)						
08:30 - 09:30	Oral Session 3						
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315
	OS3-8	**OS3-9**	**OS3-10**	**OS3-11**	**OS3-12**	**OS3-13**	**OS3-14**
	T02 / SP-T13-0414	**T06 / SP-T13-0438**	**T05 / SP-T13-0431**	**T07 / SP-T13-0441**	**T03 / SP-T13-0421**	**T03 / SP-T13-0452**	**T04 / SP-T13-0423**
	Materials for Additive Manufacturing 3 (Novel materials, 4D printing)	Antimicrobial drug delivery 1	Recent Advances in biomaterial Science and Engineering 4	Biomaterials for organoids and organ models 3	Nanobiomaterials 1	Functionalized materials and multi-funtion materials for drug delivery	Biomaterials and stem cells 1
09:30 - 11:00	Concurrent Symposium 10						
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315
	S10-8	**S10-9**	**S10-10**	**S10-11**	**S10-12**	**S10-13**	**S10-14**
	SP-T01-0038	**SP-T04-0102**	**SP-T02-0359**	**SP-T06-0095**	**SP-T08-0115**	**SP-T01-0307**	**SP-T10-0196**
	Next Generation Biomaterials for Stem Cell Culture and Differentiation	3D bioprinting of multiple cell lineages and organoids for tissue regeneration	Open-source and low-cost technologies for advanced biomaterials fabrication	Innovative biomaterials and devices for cardiovascular therapy	Up-to-date technology in periodontal tissue engineering	Materiobiology	Advanced biofunctional and bioinspired materials/ devices for healthcare and tissue engineering
11:00 - 11:20	Coffee Break						
11:20 - 12:10	**Plenary Lecture 6 - Dr. João F. Mano** (Convention Hall, 5F, EXCO)						
12:10 - 13:40	Lunch & Luncheon Seminar 3						
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
13:40 - 15:10	Concurrent Symposium 11						
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315
	S11-8	**S11-9**	**S11-10**	**S11-11**	**S11-12**	**S11-13**	**S11-14**
	SP-T11-0401	**SP-T06-0214**	**SP-T04-0081**	**SP-T06-0089**	**SP-T08-0248**	**SP-T02-0315**	**SP-T10-0365**
	Special Symposium in Memory of Professor Sung Wan Kim (**13:40-14:55**)	Multifunctional biomaterials for blood contacting and cardiovascular applications	Glass for bone repair: From bioglass to glass-polymer hybrids	Biomaterials for immune tolerance against autoimmune diseases	Osteonecrosis: The Biology and Treatment with Implants, Biologics, and Cells	Melt Electrowriting of Scaffolds	Photothermal Biomaterials
15:10 - 15:20	Break						
15:20 - 16:10	**Plenary Lecture 7 - Dr. Ick Chan Kwon** (Convention Hall, 5F, EXCO)						
16:10 - 16:30	Coffee Break						
16:30 - 18:00	Concurrent Symposium 12						
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315
	S12-8	**S12-9**	**S12-10**	**S12-11**	**S12-12**	**S12-13**	**S12-14**
	SP-T01-0036	**SP-T04-0049**	**SP-T06-0183**	**SP-T06-0332**	**SP-T08-0242**	**SP-T02-0126**	**SP-T08-0074**
	Functionalization and commercialization of nano/micro-structured materials	Interoception mediated musculoskeletal tissue regeneration	Biomaterial Systems and Devices for Hemostasis, Resuscitation, and Wound Care	Anti-pathogen surface technologies for medical devices	Translation of nanoplatforms for surgical applications	Multi-layer biomaterials: emerging applications	Understanding the role of the immune system in tissue generation, repair, and wound healing
18:00 - 19:00	Poster Session 4 (Grand Ballroom, 3F, EXCO)						

Day 6 May 31 (Fri)

Time	May 31 (Fri)						
07:00 -08:30	Registration (Lobby, 3F, EXCO)						
08:30 - 09:30	Oral Session 4						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	OS4-1	**OS4-2**	-	**OS4-4**	**OS4-5**	**OS4-6**	**OS4-7**
	T01 / SP-T13-0411	**T02 / SP-T13-0416**	-	**T04 / SP-T13-0474**	**T06 / SP-T13-0475**	**T04 / SP-T13-0427**	**T03 / SP-T13-0422**
	Conductive biomaterials	Technology for biofabrication 2	-	Biomaterials scaffolds 4	Biomaterials for medical applications 4	Biomaterials for hard tissue regeneration	Bioactive Hydrogels for Therapeutic Applications
09:30 - 11:00	Concurrent Symposium 13						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	S13-1	**S13-2**	**S13-3**	**S13-4**	**S13-5**	**S13-6**	**S13-7**
	SP-T01-0294	**SP-T02-0250**	**SP-T03-0109**	**SP-T04-0268**	**SP-T02-0326**	**SP-T06-0360**	**SP-T01-0177**
	Biomaterial strategies for delivering biologics and therapeutic cells to transform cancer immunotherapy	Injectable Hydrogels For Regenerative Medicine	Self-assembled and stimuli responsive nanobiomaterials for delivery and targeting of biological drugs	New Biomaterials for Cardiovascular Tissue Engineering	Microfabrication techniques for vascularization of tissue engineered constructs	Regenerative Approaches for ENT Field	Calcium phosphate biomaterials design: Bioactivity, materials property and mechanisms of biomineralization
11:00 - 11:20	Coffee Break						
11:20 - 12:50	Concurrent Symposium 14						
	Room 325-AB	Room 325-CD	Room 324-A	Room 324-B	Room 323	Room 322	Room 306-A
	S14-1	**S14-2**	**S14-3**	**S14-4**	**S14-5**	**S14-6**	**S14-7**
	SP-T01-0240	**SP-T02-0245**	**SP-T03-0101**	**SP-T04-0255**	**SP-T06-0256**	**SP-T06-0346**	**SP-T01-0172**
	Bioinspired supramolecular Biomaterials	Cell Encapsulation and 3D Digital Assembly for Basic and Applied Biomedicine	Stimuli-Responsive Macromolecular Assembly for Theranostics	Biomaterial models of the hierarchical tumor microenvironment	Innovative biomaterials for neural applications	Advanced Biomaterials with sensing properties to overcome the XXI century health challenges	Smart zwitterionic polymer biomaterials
12:50 - 13:00	Break						
13:00 - 14:00	Closing Ceremony (Convention Hall, 5F, EXCO)						

Time	May 31 (Fri)						
07:00 -08:30	Registration (Lobby, 3F, EXCO)						
08:30 - 09:30	Oral Session 4						
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315
	OS4-8	**OS4-9**	**OS4-10**	**OS4-11**	**OS4-12**	**OS4-13**	**OS4-14**
	T03 / SP-T13-0471	**T06 / SP-T13-0476**	**T05 / SP-T13-0432**	**T07 / SP-T13-0442**	**T03 / SP-T13-0470**	**T03 / SP-T13-0453**	**T04 / SP-T13-0473**
	Immunmodulatory Biomaterials	Antimicrobial drug delivery 2	Recent Advances in biomaterial Science and Engineering 5	Lab-on-a-chip	Nanobiomaterials 2	Biomaterials for cancer therapy	Biomaterials and stem cells 2
09:30 - 11:00	Concurrent Symposium 13						
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315
	S13-8	**S13-9**	**S13-10**	**S13-11**	**S13-12**	**S13-13**	**S13-14**
	SP-T01-0026	**SP-T04-0051**	**SP-T06-0166**	**SP-T06-0023**	**SP-T08-0171**	**SP-T06-0314**	**SP-T08-0053**
	Biomaterial Design for Immunoengineering	Biomaterials for Women's Reproductive Health	Bioadhesive technologies for tissue repair and regeneration	Biomaterials for inflammatory bowel disease therapy	Gelatin and collagen based biomaterials: advances towards pharmaceutical and clinical translation of tissue biofabrication	Harnessing Biomaterials Strategies to Model Lung Disease, Repair Damaged Tissue, and Deliver Drugs for Treatment	Clinical and Pre-clinical Application of Biomaterials toward Next-Generation Medicine
11:00 - 11:20	Coffee Break						
11:20 - 12:50	Concurrent Symposium 14						
	Room 306-B	Room 314	Room 321-A	Room 321-B	Room 320-A	Room 320-B	Room 315
	S14-8	**S14-9**	**S14-10**	**S14-11**	**S14-12**	**S14-13**	-
	SP-T01-0141	**SP-T04-0039**	**SP-T06-0143**	**SP-T02-0201**	**SP-T08-0107**	**SP-T02-0076**	-
	Molecular assembly control for supramolecular nano-biomaterials	Advanced Nanobiomaterials for Biomedical Applications	Advances in Antimicrobial and Antibiofilm Biomaterials	Fostering international multidisciplinary collaboration in biomaterials research: Australasia- Germany case study	Craniofacial tissues and implants	Creating 3D architectures to facilitate organ regeneration	-
12:50 - 13:00	Break						
13:00 - 14:00	Closing Ceremony (Convention Hall, 5F, EXCO)						

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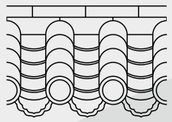

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Kansai University

Yujiang Fan
Sichuan University

Yukio Nagasaki
University of Tsukuba

Yun Jung Yang
Inha University

Yun Kee Jo
Kyungpook National University

Yun-Ching Chen
National Tsing Hua University

Yunjeh Ko
KIT

Yves Bayon
Medtronic

Zhaoli Gao
The Chinese University of Hong Kong

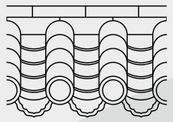
Zhimou Yang
Nankai University

Zhongwei Gu
Nanjing Tech University

WBC 2024
12th World Biomaterials Congress

May 26-31, 2024 | EXCO, DAEGU, KOREA

12th World
Biomaterials
Congress



Congress Information

→ **Registration**

→ **Exhibition**

→ **Official Program**

→ **Social Program**

Registration

Registration Desk

Participants have to register in person at the registration desk, which is located in the lobby, 3F, EXCO, and pick up their name badge and congress kit. The name badge must be worn while attending to be admitted to all the scientific sessions, exhibit hall, and social events.

The registration desk will be in operating during these hours:

Date	**May 26** (Sun)	**May 27** (Mon)	**May 28** (Tue)	**May 29** (Wed)	**May 30** (Thu)	**May 31** (Fri)
Time	16:00~18:00	07:00~19:00	07:00~19:00	07:00~19:00	07:00~19:00	07:00~13:00

Congress Kit Pick-up

Participants will receive a congress kit, including the program book and lunch coupons. Please scan the QR Code on the name badge at the kit desk near the registration desk.

Certificate of Attendance

All participants may download and print the certificate of attendance at My Page on the WBC 2024 website after the closing ceremony.

Exhibition

Exhibitor badges will be distributed at the exhibition information desk and each exhibitor must wear it during the exhibition.

- Location: Grand Ballroom, 3F, EXCO
- Operating hours

Date	**May 26** (Sun)	**May 27** (Mon)	**May 28** (Tue)	**May 29** (Wed)	**May 30** (Thu)	**May 31** (Fri)
Time	Set Up	09:00~18:00	09:00~18:00	09:00~18:00	09:00~18:00	09:00~13:00

Official Program

Opening Ceremony

Date & Time	May 27 (Mon) 09:00~10:20
Venue	Convention Hall, 5F, EXCO

Closing Ceremony

Date & Time	May 31 (Fri) 13:00~14:00
Venue	Convention Hall, 5F, EXCO

Social Program

Welcome Reception

Date & Time	May 26 (Sun) 18:00~20:00
Venue	Grand Ballroom, B1, Hotel Inter-Burgo EXCO
Attendees	All are welcome to join

Young Investigators' and Students' Night

Date & Time	May 28 (Tue) 19:00~21:00
Venue	Event Hall, 2F, Fashion Center Korea
Attendees	Students and young investigators only

Congress Dinner

Date & Time	May 29 (Wed) 19:00~21:00
Venue	Grand Ballroom, B1, Hotel Inter-Burgo EXCO
Attendees	Only those who purchased the ticket can be admitted

12th World
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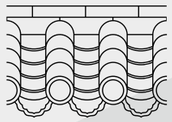


Useful Information

- → Wi-Fi Access and Internet Lounge
- → Cloak Room
- → Kids Room (Child Care Service)
- → Nursing Room (Infant Care Facilities)
- → First Aid (Clinic)
- → Smoking
- → Parking
- → Shuttle Bus Service
- → Useful Information

Wi-Fi Access and Internet Lounge

- Wireless Internet with the network name [EXCO_Free] can be accessed anywhere at EXCO. No password required.
- In addition to the free EXCO Wi-Fi, access is also available on the WBC 2024 Wi-Fi near the registration desk and in the Grand Ballroom.
  Network SSID: WBC2024
  Password: wbc2024
- If you require a cable connection, LAN cables can be found in the Internet lounge, near the registration desk.

Cloakroom

- The Cloakroom is located in the registration area and will be available for the entire duration of the congress.
- Limited space will be available on a first-come, first-served basis.
- Valuables, fragile items, etc., will not be accepted.
- Items will be released to any person presenting the storage tag.
- Deposited items must be retrieved before the closing hour. Non-compliance may result in loss of the item.
- Congress organizers are not responsible for lost or misplaced items and claimed lost/found items are only released with proof of identification/confirmation of ownership.

Kids Room (Child Care Service)

On-site child-care service is provided throughout WBC 2024. This service will provide attendees with children additional flexibility in their schedules and an affordable and dependable option for child-care. For the service, all guidelines and policies will be provided at the time of the check-in.

- Location : Room 506, 5F, EXCO - Age : From 4 to 10 years old - Fee : Complimentary
- Opening Hours

Date	Open	Close	Lunch Time (Closed)
May 27 (Mon)	8:30	19:00	11:30~13:00
May 28 (Tue)	8:00	19:00	12:10~13:40
May 29 (Wed)	8:00	19:00	12:10~13:40
May 30 (Thu)	8:00	19:00	12:10~13:40
May 31 (Fri)	8:00	14:00	-

Nursing Room (Infant Care Facilities)

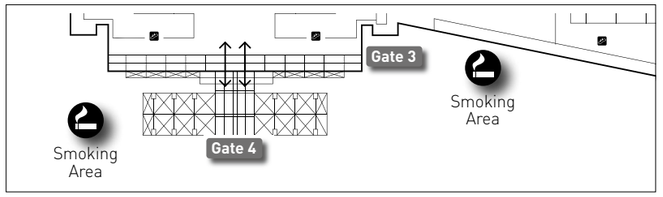
The infant care room with privacy for parents and guardians of infants is located in the lobby, 1F, EXCO. The room is equipped with a sofa and a private area for diaper changes or nursing. It also has an electricity outlet and a water dispenser. Parents and guardians are responsible for their infant care supplies. The infant caring room is also unsupervised. WBC 2024 is not responsible for accidents or injuries that may occur in this area.

First Aid (Clinic)

It is located in the lobby, 1F, EXCO. The nurses and ambulances will be on standby, providing simple first aid/ disinfection and general medicine, and ready to move the hospitals near EXCO in an emergency.

Smoking

Smoking is allowed in designated areas outside EXCO near Gate 3 and Gate 4.



Parking

There are several parking areas at EXCO. The 1st parking lot (736 spots) is near Gate 4, and the 2nd parking lot (677 spots) is near Gate 1~3 on the West Wing.

Parking tickets can be purchased at the information desk on the first floor of West Wing. All prices are in Korean Won and are subject to change without notice.

Time	30 minutes	1 hour	2 hours	3 hours	4 hours	24 hours
Parking Fee	KRW 1,000	KRW 2,050	KRW 4,150	KRW 6,250	KRW 8,350	KRW 10,000

Shuttle Bus Service

WBC 2024 provides complimentary shuttle buses between transportation facilities, hotels, and EXCO. The schedules may change depending on the situation, and for the latest schedules, please visit the information desk. The shuttle bus schedules and stop locations are posted on the WBC 2024 website on the notice board.

Useful Information

≫ Time

Korean Standard Time (KST) is nine hours ahead of Greenwich Mean Time (GMT+9).

≫ Electricity

220-volt outlets are most common in Korea. Please check the power supply before use.

≫ Emergency Call

112 Police
119 Emergencies for Fire / Rescue & Hospital Services
1330 Tourist Information Services
1339 Medical Emergency

≫ Tip & Tax

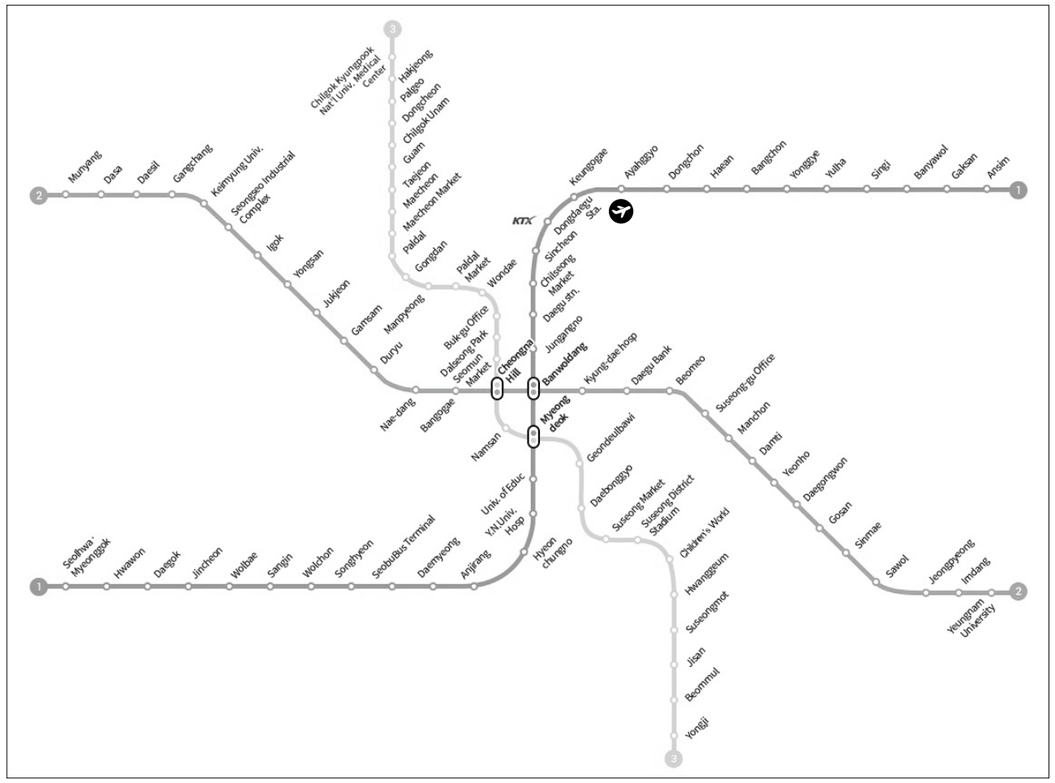
Tipping is not a regular practice in Korea. Service charges are included in the bill for rooms, meals, and other services at hotels and restaurants. Value-added tax (VAT) is levied on most goods and services at a standard rate of 10% and is included in the retail price.

≫ Taxi

The fare is calculated from both the distance traveled and the time takes. Fares start from KRW 4,000 in Daegu. Tips are not required. Look for the word "빈차" on a taxi to know if it's vacant and available for you to catch.

≫ Subway

Daegu has three metro lines: line 1 (red), line 2 (green), and line 3 (yellow). The first train of the day leaves the departure station at 5:30 AM, and the last one arrives around 11:00 PM.



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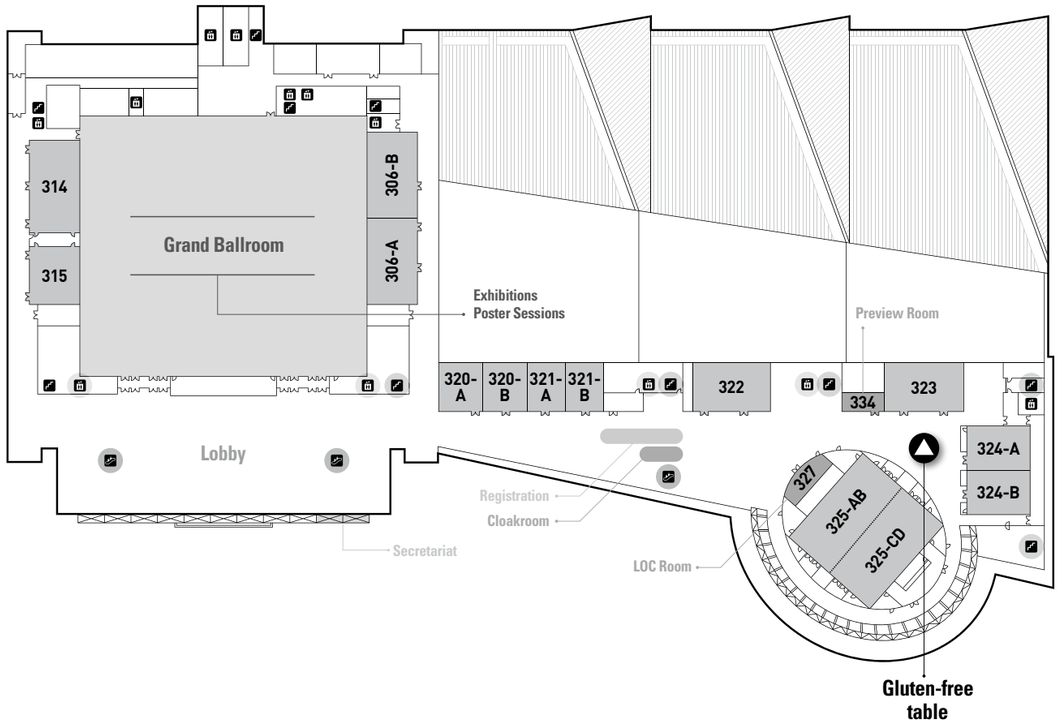
Lunch & Restaurant Information

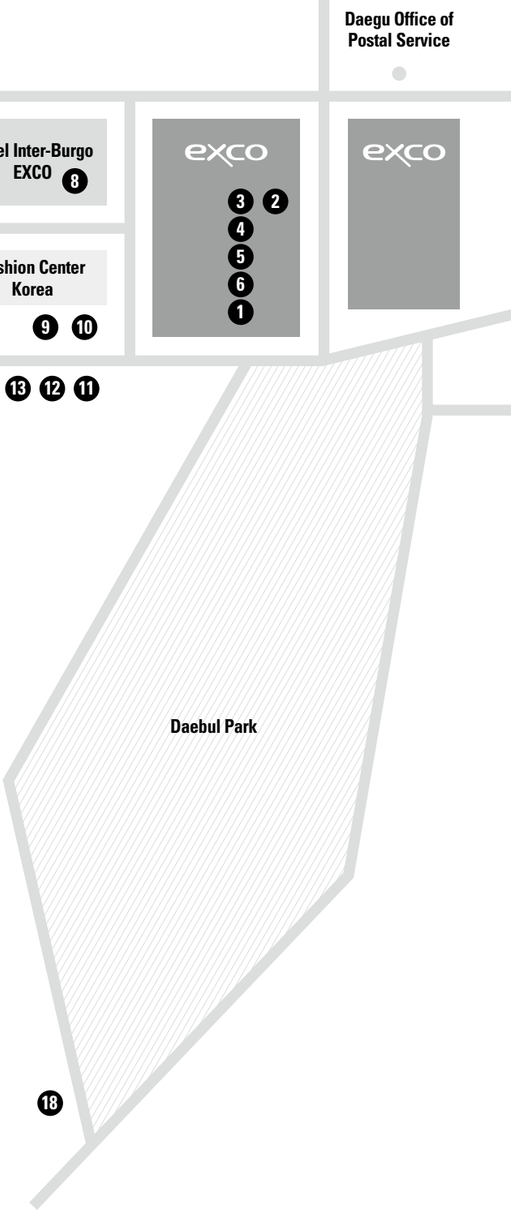
Lunch

WBC 2024 is offering lunch coupons for registrants.

- Registrants can exchange daily lunch coupons for a sandwich during the luncheon seminar.
- If you haven't registered for the luncheon seminar, you can use your meal coupons to have lunch at any of the restaurants located inside or outside the convention center.
- The lunch coupons are valid for usage anytime during the specified date.
- Each coupon is worth KRW 10,000. If you spend more than KRW 10,000, you will have to pay an additional payment.
- Participants who require gluten-free options can get their lunch and refreshments at the designated coffee break tables near Room 323.



Map



1. Dadamtteul
2. EXCO Food Court
3. Café Tea : Malgeum
4. Brother Dosirak
5. XOXO Hotdog and Coffee
6. Coffee Myungga
7. Dongboseong
8. Gaejeung
9. Happy Cheese Smile
10. Lagom Kitchen
11. Seoul Ttukbaegi Gamjatang
12. Chakhan Hansik Buffet
13. Maek Chamsuccbul Sigyuk Sikdang
14. Hong-i-ne Shabu Kalguksu
15. Cheonan-mun
16. Jeju Bansang
17. Yeonhwajeong Samgyetang
18. Geumgangchun

Restaurants inside EXCO

1. Dadamtteul Korean Restaurant Vegetarian

Location West Wing, 2F, EXCO
Opening Hours 11:00~21:00

≫ Eligible menu using the coupon

No.	Menu
1	Korean-style Buffet Vegetarian



2. EXCO Food Court Korean Restaurant Vegetarian

Location West Wing, 2F, EXCO
Opening Hours 11:30~13:30

≫ Eligible menu using the coupon

No.	Menu
1	Korean-style Buffet Vegetarian


3. Café Tea : Malgeum Cafe

Location West Wing, 1F, EXCO
Opening Hours 09:00~19:00

≫ Eligible menu using the coupon

No.	Menu
1	Egg Sandwich + Americano(HOT)

4. Brother Dosirak Korean Lunch box Vegetarian

Location West Wing, 1F, EXCO
Opening Hours 10:00~19:00

≫ Eligible menu using the coupon

No.	Menu
1	Spicy Stir-fried Pork Lunch Box
2	Beef Bulgogi Lunch Box
3	Vegetarian Lunch Box Vegetarian



5. XOXO Hotdog and Coffee Cafe

Location West Wing, 1F, EXCO
Opening Hours 09:30~19:30

≫ Eligible menu using the coupon

No.	Menu
1	Original Hotdog + Americano
2	Ham, Egg and Cheese Sandwich + Americano
3	Bulgogi Hotdog



6. Coffee Myungga Cafe

Location West Wing, 1F, EXCO
Opening Hours 08:00~22:00

≫ Eligible menu using the coupon

No.	Menu
1	Croque Monsieur + Americano

Restaurants nearby EXCO

7. Dongboseong Chinese Restaurant

Location 2F, Hotel Inter-Burgo EXCO
Opening Hours 11:30~21:30 (Break Time: 15:00~17:30, Last Order: 21:00)

≫ Menu with an additional fee

No.	Menu	Price (KRW)
1	Seafood Spicy Noodle	₩16,000
2	Seafood black Bean Noodles	₩12,000
3	Crab Meat Soup	₩13,000

8. Gaejeung Korean Restaurant Vegetarian

Location 17F, Hotel Inter-Burgo EXCO
Opening Hours 11:00~20:30 (Last Order: 20:00)

≫ Menu with an additional fee

No.	Menu	Price (KRW)
1	Jeonju Style Bibimbap in a Hot Stone Pot Vegetarian * Request to exclde the meat if you prefer a vegetarian menu.	₩14,000
2	Jeonju Style Bibimbap Vegetarian * Request to exclde the meat if you prefer a vegetarian menu.	₩13,000
3	Soybean Paste Jjigae + Vegetable Salad	₩12,000



9. Happy Cheese Smile Korean Snack Restaurant

Location 3F, FXCO, 3, Exco-ro, Buk-gu
Opening Hours 11:10~20:30 (Last Order: 20:00)

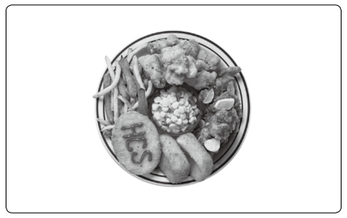
≫ Eligible menu using the coupon

No.	Menu
1	Smile Twibokki(Fried rice cake over the sweet and spicy Tteokbokki)+Soft Drink
2	Haechiseu Myeonbokki(Tteokbokki +Noddles)+Soft Drink
3	Twigim-Udong(Tempura Udon)+Soft Drink
4	Happi Jjoldon(Spicy chewy noodles & Pork Cutlet)+Soft Drink




≫ Menu with an additional fee

No.	Menu	Price (KRW)
1	Dongaseu(Pork Cutlet) Plate	₩15,000
2	Chicken Plate	₩15,000

10. Lagom Kitchen Italian Restaurant

Location 3F, FXCO, 3, Exco-ro, Buk-gu
Opening Hours 11:00~20:30(Break Time: 15:30 - 17:00, Last Order: 19:30)

≫ Menu with an additional fee

No.	Menu	Price (KRW)
1	Carbonara	₩14,900
2	Seafood Oil Pasta	₩15,900
3	Scallop Steak Risotto	₩16,900
4	Chicken Risotto	₩16,900




11. Seoul Ttukbaegi Gamjatang Korean Restaurant

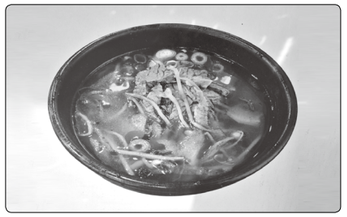
Location 1F, 74, Yutongdanji-ro 8-gil, Buk-gu
Opening Hours 07:00~24:00

≫ Eligible menu using the coupon

No.	Menu	How to Eat
1	Korean Beef Soup	Korean Beef Soup(Sogogi Gukbap) requires mixing the rice into the soup

≫ Menu with an additional fee

No.	Menu	How to Eat	Price (KRW)
1	Pork Back Bone Stew in Pot (2 Servings)	Korean Beef Soup(Sogogi Gukbap) requires mixing the rice into the soup	₩31,000




12. Chakhan Hansik Buffet Korean Restaurant Vegetarian

Location 1F, 72, Yutongdanji-ro 8-gil, Buk-gu
Opening Hours 07:00~21:00

≫ Eligible menu using the coupon

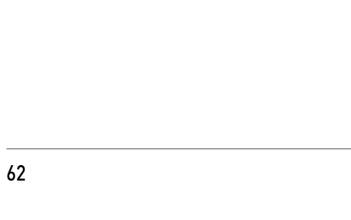
No.	Menu	How to Eat
1	Hansik Buffet(Korean-style Buffet) Vegetarian	-
2	Gamja-Tang (Pork Backbone Stew)	The tender pork bones are best eaten by shredding the meat off with chopsticks and enjoying it with vegetables and potatoes in the soup
3	Dwaeji Gukbap (Pork and Rice Soup)	Gukbap requires mixing the rice into the soup


13. Maek Chamsuccbul Sigyuk Sikdang Korean Restaurant

Location 1F, 70, Yutongdanji-ro 8-gil, Buk-gu
Opening Hours 11:00~23:00 (Break Time: 15:00~16:30)

≫ Eligible menu using the coupon

No.	Menu	How to Eat
1	Yukhoe (Beef Tartare) Bibimbap	Mixing everything is the correct way to enjoy it, as "bibim" means mixed, and "bap" is Korean for rice
2	Hanwoo Gomtang (Korean Beef Bone soup)	It is common to add rice directly to the soup or broth while eating. Gomtang is typically served with green onions and mineral salt on the side for individual seasoning preferences
3	Sogogi Gukbap (Beef and Rice Soup)	Gukbap requires mixing the rice into the soup



14. Hong-i-ne Shabu Kalguksu Korean Restaurant

Location 1F, 66, Yutongdanji-ro 8-gil, Buk-gu
Opening Hours 10:30~21:00 (Last Order: 20:30)

≫ Eligible menu using the coupon

No.	Menu
1	Seafood Noodle Soup with Surf Clam

≫ Menu with an additional fee

No.	Menu	How to Eat	Price (KRW)
1	Beef Wrap Shabu Noodle Soup (More than 2 People)	"Ssam" refers to a dish in which leafy vegetables like lettuce are wrapped around meat. In the case of "Shabu," cook the ingredients gradually throughout the meal	₩13,000
2	Seafood Spring Onion Chives Pancake	-	₩12,000
3	Boiled Pork with Medical Herbs	-	₩16,000




15. Cheonan-mun Chinese Restaurant

Location 1F, 62, Yutongdanji-ro 8-gil, Buk-gu
Opening Hours 11:00~21:30

≫ Eligible menu using the coupon

No.	Menu
1	Samseon Ganjjajang Gopbaegi(Black Bean Sauce Noodles with Seafood(Double Portions))
2	Gochu Jjajang(Spicy Black Bean Sauce Noodles with Chilli Peppers)+Soft Drink
3	Saeu Bokkeumbap(Shrimp Fried Rice)+Soft Drink
4	Teuk-Jjamppong(Spicy Seafood Noodle Soup Special)
5	Honghap Jjamppong(Spicy Seafood Noodle Soup with Mussels)+Gonggi-Bap(Steamed Rice)
6	Samseon Udon(Seafood Udon)+Gonggi-Bap(Steamed Rice)

16. Jeju Bansang Korean Restaurant

Location 1F, 58, Yutongdanji-ro 8-gil, Buk-gu
Opening Hours 11:00~21:00

≫ Eligible menu using the coupon

No.	Menu	How to Eat
1	Godeungeo Gui (Grilled Mackerel) + Doenjang Jjigae (Soybean Paste Stew)	Jjigae, or Korean stew, is served hot and filled with ingredients. It's typically served with a side of rice to balance out the intense flavors

≫ Menu with an additional fee

No.	Menu	How to Eat	Price (KRW)
1	Modeum Saengseon Gui (Assorted Grilled Fish)	-	₩17,000
2	Godeuneo-Gui Kimchi-Jjigae (Kimchi Stew with Grilled Mackerel)	Jjigae, or Korean stew, is served hot and filled with ingredients. It's typically served with a side of rice to balance out the intense flavors	₩11,000

17. Yeonhwajeong Samgyetang Korean Restaurant

Location 1F, 21-19, Yutongdanji-ro 8-gil, Buk-gu
Opening Hours 10:30~21:00 (Last Order: 20:30)

≫ Eligible menu using the coupon

No.	Menu	How to Eat
1	Gul-Gukbap (Oyster Rice Soup)	Gukbap requires mixing the rice into the soup

≫ Menu with an additional fee

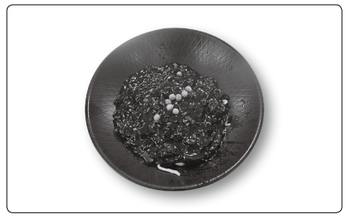
No.	Menu	Price (KRW)
1	Yeonhwajeong Samgyetang(Ginseng Chicken Soup)	₩16,000


18. Geumgangchun Chinese Restaurant

Location 1F, 9, Daebul-ro, Buk-gu
Opening Hours 10:00~20:00 (Last Order: 19:50)

≫ Eligible menu using the coupon

No.	Menu
1	Jjajang-Myun Gopbaegi(Black Bean Sauce Noodles, Double Portions)+ Gonggi-Bap(Steamed Rice)+Soft Drink(Large)
2	Chadolbagi Jjamppong(Spicy Seafood Noodle Soup with Beef Brisket)
3	Mini Tangsuyuk(Fried Pork with Sweet and Sour Sauce, Small Portions)



12th World Biomaterials Congress

Affiliated Meeting

Affiliated Meeting

Affiliated Meeting 1 / AF1-1

May 27 (Mon) 11:30~13:00 / Room 320-B
Council meeting of the European Society for Biomaterials

Organizer
European Society for Biomaterials
ESB

Affiliated Meeting 2 / AF1-2

May 27 (Mon) 11:30~13:00 / Room 505
IUSBSE Annual General Meeting (AGM)

Organizer
IUSBSE

Affiliated Meeting 3 / AF1-3

May 27 (Mon) 11:30~13:00 / Room 504
Bioactive Materials Awards Ceremony & Editorial Board Meeting

Organizer
KeAi Publishing

Bioactive Materials (https://www.keaipublishing.com/en/journals/bioactive-materials/) will give out three awards at the 12th World Biomaterials Congress in Daegu, Korea (May 26 - 31, 2024) to recognize the accomplishments of scientists in the field of bioactive materials:

- The annual Bioactive Materials Lifetime Achievement Award was established in 2021 to recognize excellence in research and development in the field. It is presented to the person judged to have demonstrated excellence and leadership in bioactive materials, including basic science and translation to practice. The award includes an honorarium of USD 10,000 and an inscribed certificate.
- The Bioactive Materials Innovation Award recognizes individuals who have made significant research innovations and achievements in the field of bioactive materials. Every year a maximum of two individuals will be awarded a certificate and USD 2,000 in cash each.
- The Bioactive Materials Student Award recognizes student researchers who have shown outstanding achievements in bioactive materials research. Each recipient will receive a certificate and a cash honorarium of USD 1,000.

Affiliated Meeting 4 / AF1-4

May 27 (Mon) 15:00~17:00 / Room 505
Editorial Board Member Offline Meeting for the Journal

Organizer
MDPI

Affiliated Meeting 5 / AF2-1

May 28 (Tue) 12:10~13:40 / Room 505
JBMR A Editorial Board Meeting

Organizer
Wiley

Meeting of the Editorial Board of the Journal of Biomedical Materials Research Part A (Editorial Board members only)

Affiliated Meeting 6 / AF2-2

May 28 (Tue) 12:10~13:40 / Room 504
Open Meeting of Chinese Society for Biomaterials

Organizer
Chinese Society for Biomaterials
CSBM

This meeting is open to all delegates who are interested in the status quo and policies for the biomaterials in China. The founder and honorary president of the Chinese Society for Biomaterials (CSBM) Professor Xingdong Zhang and the president of CSBM Prof Yuliang Zhao will give opening remarks and introduction of the Chinese biomaterial field. Some renowned Chinese scientists at home and broad will be invited to give talks regarding their personal experiences and understanding of the development and future trends of Chinese biomaterial science and engineering. Following the invited talks there will be a panel discussion on the related hot topics.

Affiliated Meeting 7 / AF2-3

May 28 (Tue) 13:40~15:10 / Room 505
SFB President's Advisory Committee

Organizer
Society For Biomaterials
SFB

The Society For Biomaterials' will invite all of its attending Past Presidents to convene to consider and advise the Council on any matter requested by the President or Council.

Affiliated Meeting 8 / AF2-4

May 28 (Tue), 15:30~16:30 / Room 504
Steering Committee of the International College of Fellows - FBSE

Organizer
IC-FBSE

Affiliated Meeting 9 / AF2-5

May 28 (Tue), 16:30~18:00 / Room 504
General Assembly of the FBSE

Organizer
IC-FBSE

General Assembly of the International College of Fellows on Biomaterials Science and Engineering (ICF-BSE) at the World Biomaterials Congress 2024

Affiliated Meeting 10 / AF3-1

May 29 (Wed), 08:30~10:00 / Room 504
Annual General Meeting of the Canadian Biomaterials Society

Organizer
Canadian Biomaterials Society
CBS

The Annual General Meeting of the Canadian Biomaterials Society (CBS) is open to all CBS members; at this meeting we will discuss the yearly activities, budget, and future of the society, as well as elect the new Board Members and President-Elect.

Affiliated Meeting 11 / AF3-2

May 29 (Wed), 12:10~13:30 / Room 320-B
Society for Biomaterials and Artificial Organs (India) - General Meeting

Organizer
Society For Biomaterials & Artificial Organs(India)
SBAIO

This meeting aims to provide updates on current programs and explore potential collaboration opportunities. SBAOI stands as one of the largest biomaterials societies globally, boasting over 1000 members. It currently includes members from various countries such as the USA, Canada, Singapore, Poland, Slovakia, South Korea, UK, Ireland, France, Spain, Nepal, Turkey, Japan, Germany, Oman, Finland, among others. SBAOI is a member of the International Union of Societies for Biomaterials Science and Engineering (IUS-BSE) since 2003.The meeting welcomes individuals at different career stages, and membership is open to all, not limited to those of Indian origin.

Affiliated Meeting 12 / AF3-3

May 29 (Wed) 12:10~13:40 / Room 505
Editorial Board Meeting of Regenerative Biomaterials

Organizer
Chinese Society for Biomaterials
CSBM

Regenerative Biomaterials is a fully open access, international, interdisciplinary, peer-reviewed journal publishing the latest advances in biomaterials and regenerative medicine. The journal provides a forum for the publication of original research papers, reviews, clinical case reports, and perspectives on the topics relevant to the development of advanced regenerative biomaterials concerning novel regenerative technologies and therapeutic approaches for the regeneration and repair of damaged tissues and organs.

Affiliated Meeting 13 / AF3-4

May 29 (Wed) 12:10~13:40 / Room 504
Society For Biomaterials (US) Annual Business Meeting

Organizer
Society For Biomaterials
SFB

The SFB Annual Business Meeting will include electing the Awards, Ceremonies and Nominations Committee for the 2024-2025 Program Year, a Financial Overview, and may include some 2024 Award Presentations.

Affiliated Meeting 14 / AF4-1

May 30 (Thu) 12:10~13:40 / Room 325-CD
KSBM General Meeting

Organizer
The Korean Society for Biomaterials
KSBM

Affiliated Meeting 15 / AF4-2

May 30 (Thu) 12:10~13:10 / Room 320-B
Japanese Society for Biomaterials Member's Salon

Organizer
Japanese Society for Biomaterials
JSB

JSB board meeting. Meeting for interaction and information exchange among JSB members.

Affiliated Meeting 16 / AF4-3

May 30 (Thu) 12:10~13:10 / Room 504
ASBTE Annual General Meeting

Organizer
Australasian Society for Biomaterials and Tissue Engineering
ASBTE

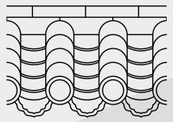
We will be holding our annual general meeting and elect the next executive committee for the society. We will also be giving out our society awards at this meeting.

Affiliated Meeting 17 / AF4-4

May 30 (Thu) 18:00~19:00 / Room 325-AB
KSBM Special Session (Korean)

Organizer
The Korean Society for Biomaterials
KSBM

12th World
Biomaterials
Congress

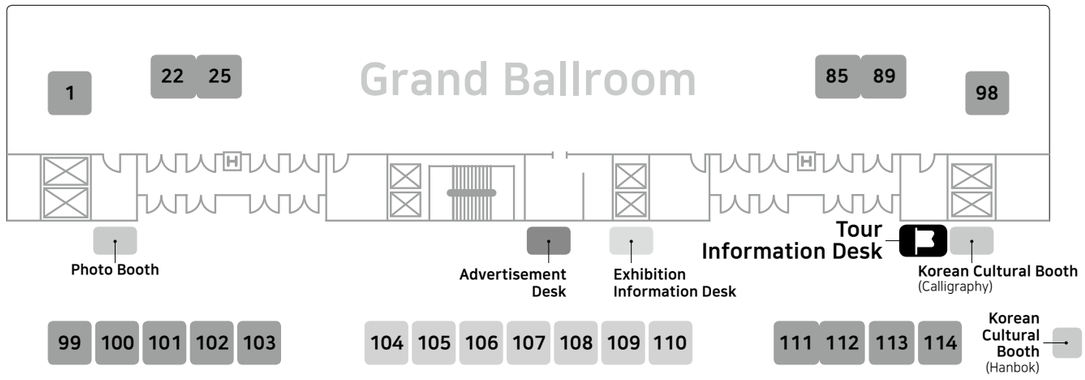


Optional Tour Program

Optional Tour Program

Located at the center of an area rich in tradition and culture, Daegu offers a myriad of attractions for all to enjoy. Exciting tour programs will offer WBC 2024 delegates a glimpse of authentic Korean culture. Explore the wonders of Daegu and UNESCO World Heritage Sites in Korea, and make unforgettable memories!

※ Tour schedule could be changed depending on local conditions.
※ For more information, please visit the on-site tour desk in the lobby area, in front of the exhibit hall (Grand Ballroom).

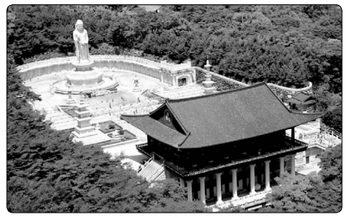


A. Cultural Experience Tour

T1-1 Daegu : Palgongsan Donghwasa Temple

Date: May 27(Mon)~31(Fri)
Fee(per person): KRW 77,000

Time	Course	Program
13:00	Gate 3, EXCO	-
13:30~16:30	Donghwasa Temple Main Hall	Unification Giant Buddha
17:00	Gate 3, EXCO	-


Panoramic view of Donghwasa Temple

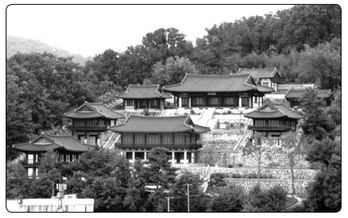

In front of Daeungjeon


Temple Main Hall

T1-2 Daegu : Guam Seowon

Date: May 28(Tue)~31(Fri)
Fee(per person): KRW 97,000

Time	Course	Program
13:00	Gate 3, EXCO	-
13:30~16:30	Guam Seowon	Folk painting drawing, Korean archery experience
17:00	Gate 3, EXCO	-


Panoramic view of Guam Seowon


Drawing folk paintings


Korean archery experience

T1-3 / T1-4 Daegu : Korean Traditional Culture Experience Center

Date: May 27(Mon)~31(Fri)
Fee(per person): KRW 120,000

Time		Course	Program
Morning T1-3	Afternoon T1-4		
09:00	13:00	Gate 3, EXCO	-
09:30~12:30	13:30~16:30	Korean Traditional Culture Experience Center	Korean traditional clothing, tea ceremony, and food making experience / Visit the place where a memorial tablet was placed to commemorate Doo sa chung
13:00	17:00	Gate 3, EXCO	-


Korean Traditional Culture Experience Center


Korean traditional clothing, tea ceremony, and food making experience


Korean archery experience

T1-5 / T1-6 Daegu : Samunjin Ferry Port and The Arc

Date: May 28(Tue)~31(Fri)
Fee(per person): KRW 87,000

Time		Course	Program
Morning T1-5	Afternoon T1-6		
09:30	12:30	Gate 3, EXCO	-
09:30~10:10	12:30~13:10	Movement	Tour guide explanation
10:10~12:50	13:10~15:50	Samunjin ferry tour	-
13:00~13:30	16:00~16:30	Cruise ship boarding experience	Cruise ship boarding experience (One way KRW 10,000)
13:30~15:30	16:30~18:00	Architecture of River Culture	Electric bike experience (KRW 15,000 per hour)
15:30~16:00	18:30~19:00	Go to EXCO	-


Samunjin ferry port Entrance


Panoramic view of Samunjin ferry port


Cruise ship boarding experience


Architecture of River Culture


Inside The Ark - 500 pieces Greeting Man


Electric bike experience

T2-1 Deagu : Modern Culture Alleyway

Date: May 27(Mon)~31(Fri)
Fee(per person): KRW 84,000

Time	Course	Program
18:00	Gate 3, EXCO	-
18:30~21:30	Dongsan Cheongna Hill - March 1st Independence Movement Road Daegu Gyesan Catholic Church - Korean House of Yi Sang-hwa	Korean traditional portable light provided (Cheongsa Lantern)
22:00	Gate 3, EXCO	-


Modern Cultural Street

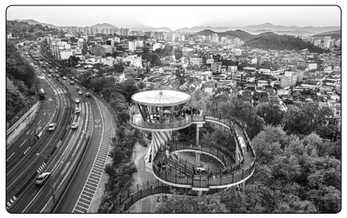

Gyesan Catholic Church


Cheongna Hill

T2-2 Deagu : Suseongmot Lake

Date: May 27(Mon)~31(Fri)
Fee(per person): KRW 77,000

Time	Course	Program
13:00	Gate 3, EXCO	-
19:00~21:00	Sunset Observatory - Suseongmot Lake	Night music fountain show - Individual dinner
22:00	Gate 3, EXCO	-


Sunset Observatory


Path around Suseongmot Lake


Suseongmot Lake

B. UNESCO Cultural Heritage Tour

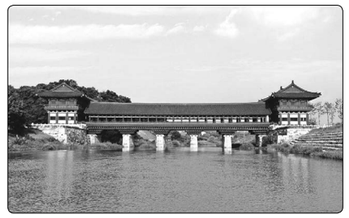
T3-1 Gyeongju

Date: May 27(Mon)~31(Fri)
Fee(per person): KRW 116,000

Time	Course	Program
09:00	Gate 3, EXCO	-
10:30~11:30	Bulguksa Temple	UNESCO World Heritage designated temple
12:00~13:00	Korean Restaurant lunch	Korean style food
13:00~14:00	Gyeongju Hwangnidan Street	Korean traditional clothing experience
14:00~16:40	Gyeongju Daereungwon Ancient Tomb Complex - Cheomseongdae Observatory - Gyochon Traditional Village - Woljeonggyo Bridge	Visit UNESCO World Cultural Heritage sites
16:40~18:00	Go to EXCO	-


Panoramic view of Bulguksa Temple


Cheomseongdae Observatory


Woljeonggyo Bridge

T3-2 Andong

Date: May 27(Mon)~31(Fri)
Fee(per person): KRW 120,000

Time	Course	Program
09:00	Gate 3, EXCO	-
10:30~11:30	Andong City Folk -Woryeonggyo Bridge	The bridge was designed in the style of mituri
11:30~12:30	Korean Restaurant lunch	Grilled mackerel set meal
13:00	Hahoe village	Place visited by Queen Elizabeth of England
14:00~16:00	Hahoe Mask Dance Drama Performance	Hahoe Byeolsingut Exorcism Entry at 1:30 PM
16:00~16:30	Buyongdae Cliff	Buyongdae is a cliff with a height of 64 meters
16:30~18:00	Go to EXCO	-


Woryeonggyo Bridge


Panoramic view of Hahoe Village


Hahoe Byeolsingut Talnori

T3-3 Goryeong•Hapcheon : Haeinsa Temple(UNESCO World Heritage Site)

Date: May 27(Mon)~31(Fri)
Fee(per person): KRW 107,000

Time	Course	Program
09:00	Gate 3, EXCO	-
09:50~11:50	Daegaya Museum	Daegaya(Ancient Gaya Empire) Museum
12:00~13:00	Korean Restaurant lunch	Korean style food
13:00~15:00	Haeinsa Temple museum	It possesses approximately 7,000 Buddhist cultural assets, including 11 treasures (including 2 donated items) and 9 local tangible cultural assets
15:00~17:00	A Buddhist temple enshrining Vairocana Buddha → A place to store the Tripitaka Koreana	Beopbo Temple where the Tripitaka Koreana and Tripitaka Koreana, registered as UNESCO World Cultural Heritage and Memory of the World, are enshrined
17:00~18:00	Go to EXCO	-


Daegaya Museum


Haeinsa Temple museum


A place to store the Tripitaka Koreana

T4-1 Pohang : A theme park with a view of the sea

Date: May 27(Mon)~31(Fri)
Fee(per person): KRW 111,000

Time	Course	Program
09:00	Gate 3, EXCO	-
10:30~12:10	A theme park with a view of the sea	Yeonorang Seonyeo Theme Park (East sea coast of Korea)
12:30~13:20	Korean Restaurant lunch	Korean style food
13:20~13:50	Go to Jukdo Fish Market	-
13:50~15:40	Jukdo Fish Market Tour	Seafood experience
15:40~17:00	Go to EXCO	-


Yeonorang Seonyeo Theme Park


A theme park with a view of the sea


Jukdo Fish Marke

T3-3 Goryeong•Hapcheon : Haeinsa Temple(UNESCO World Heritage Site)

Date: May 27(Mon)~31(Fri)
Fee(per person): KRW 107,000

Time	Course	Program
09:00	Gate 3, EXCO	-
09:50~11:50	Daegaya Museum	Daegaya(Ancient Gaya Empire) Museum
12:00~13:00	Korean Restaurant lunch	Korean style food
13:00~15:00	Haeinsa Temple museum	It possesses approximately 7,000 Buddhist cultural assets, including 11 treasures (including 2 donated items) and 9 local tangible cultural assets
15:00~17:00	A Buddhist temple enshrining Vairocana Buddha → A place to store the Tripitaka Koreana	Beopbo Temple where the Tripitaka Koreana and Tripitaka Koreana, registered as UNESCO World Cultural Heritage and Memory of the World, are enshrined
17:00~18:00	Go to EXCO	-


Daegaya Museum


Haeinsa Temple museum


A place to store the Tripitaka Koreana

T4-1 Pohang : A theme park with a view of the sea

Date: May 27(Mon)~31(Fri)
Fee(per person): KRW 111,000

Time	Course	Program
09:00	Gate 3, EXCO	-
10:30~12:10	A theme park with a view of the sea	Yeonorang Seonyeo Theme Park (East sea coast of Korea)
12:30~13:20	Korean Restaurant lunch	Korean style food
13:20~13:50	Go to Jukdo Fish Market	-
13:50~15:40	Jukdo Fish Market Tour	Seafood experience
15:40~17:00	Go to EXCO	-


Yeonorang Seonyeo Theme Park


A theme park with a view of the sea


Jukdo Fish Marke

12th World
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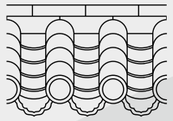

Culture Experience Program

→ Cultural Experience Program

→ Special Event

Cultural Experience Program

K-Culture Booth

Visit the booth, experience wearing the Hanbok, the traditional attire of Korea, and receive a traditional Korean Fan writing your name in Korean.

- Date & Time: May 27(Mon)~31(Fri) 09:00~18:00
- Venue: Lobby, Grand Ballroom, 3F, EXCO

Life 4 Cut Booth

A Life-4-Cut photo booth is located in the 3rd Floor Lobby. Take photos with colleagues complimentary, using various accessories, such as hairbands or glasses, and make memories easier to treasure with a Korean-style photo frame.

- Date & Time: May 27(Mon)~31(Fri)
- Venue: Lobby, 3F, EXCO

K-POP Dance Class

Registered participants must arrive 15 minutes at the venue before the start of class. Participants are recommended to wear comfortable attire, such as light upperwear, baggy pants or shorts, and sneakers.
A recording of the last 10 minutes will be provided at the end of the program.

***Depending on the number of no-show cases, the programs may allow in-situ applications on a first-come first-served basis.**

- Date & Time: May 27(Mon) 11:50~12:50, May 28(Tue) 12:30~13:30
- Venue: 503, 5F, EXCO

Taekwondo Class

Registered participants must arrive 15 minutes at the venue before the start of class. Participants are recommended to wear sneakers for the duration of the class. During the class, participants are given a Taekwondo uniform based on the sizes selected in advance.

* **Depending on the number of no-show cases, the programs may allow in-situ applications on a first-come first-served basis.**

- Date & Time: May 29(Wed)~30(Thu) 12:30~13:30
- Venue: 503, 5F, EXCO

Special Events

Happy Birthday

Participants whose birthday falls before, during, or after the Congress (May 25 to June 1) will be given a birthday present at the registration desk. Bring proof of your birth date falling under the specified dates. Furthermore, participants may choose to take pictures at the photo zone to celebrate their birthday.

***Operations will discontinue once presents run out.**

Baseball Game

An opportunity to directly experience the sports cheering culture found only in Korea!
Experiencing the lively atmosphere of a Korean stadium is truly unforgettable.

* **Registrants who have been selected via Raffle Draw must visit the registration desk a day before the event.**

- Date & Time: May 29(Wed) 18:30~22:00
- Venue: Samsung Lions' Park

Lucky Draw

Lucky draw winners will be announced at the closing ceremony on May 31(Fri), 13:00~14:00. Scan the QR code on their respective name badges at the entrance of the Convention Hall, 5F, EXCO.

* **Prizes will not be awarded if the winner is not present at the closing ceremony.**

*** Model, color, and/or design may vary**

1st Prize
[Samsung] Galaxy Tap S9

2nd Prize
[Samsung] Galaxy Buds 2 Pro

3rd Prize
[Starbucks] Tumbler/Thermos

12th World Biomaterials Congress

Scientific Program

Scientific Information

Guidelines for Session Chairs

1. Speakers' Information

- To reduce the environmental impact of the congress, the biographies of speakers are not provided as printed copies on-site.
- The session overview (speakers' biography, abstract, and presentation time) will be offered to the session chair via tablet PC on their table in each session room.

2. Before the Session

The session chair should **arrive in the room 15 minutes before the session**.

3. Make Sure to Keep the Session Schedule

We highly recommend you make sure to keep your session schedule. The session chair is given a bell and a timer to help keep time, which we recommend being used.

4. No-show

In case of a "No-show" of a speaker, **please inform the audience of a break time for the "No-show" slot and let them know the next presentation start time**. Congress staff in each session room will display a break-time slide.

Guidelines for Speakers and Oral Presenters

1. The official language is English

2. Presentation Tim(including Q&A)

- Plenary Speaker 50 mins
- Keynote Speaker 25 mins (5 mins for Q&A)
- Invited Speaker 15 mins (3 mins for Q&A)
- Oral Presenter 10 mins (2 mins for Q&A)

3. Presentation File

We highly recommend you prepare the Microsoft PowerPoint (PPT) or Portal Document Format (PDF) presentation file in the 16:9 slide size. If you would like to use the WBC 2024 PPT template, please find the attached file.

※ **Keynote for MAC will not be allowed, it must be exported to PPT or PDF in advance.**

4. Preview Room

- The preview room will be networked with the session rooms, which means that once your presentation is uploaded in the preview room, it will be automatically distributed to the session room.
- The speakers and oral presenters should **submit their presentation materials at least 24 hours prior to the session time** at the preview room on the 3rd floor, Room No. 334.

※ **In order to avoid technical issues, it is not allowed to use a personal laptop.**

※ Submission Schedule

Presentation Date	Submission Deadline
May 27	May 27, 07:30~10:30
May 28	May 27, 07:30~18:00
May 29	May 28, 07:30~18:00
May 30	May 29, 07:30~18:00
May 31	May 30, 07:30~18:00

5. Before the Session

Please arrive at the session room at least 15 minutes before the start of your session. Speakers are highly recommended to take a seat in the 'Reserved Seat' for speakers in the first row.

6. Equipment on the Podium

It will be provided with a wireless microphone, monitor, and mouse for your presentation.
If you submit your presentation materials in PPT format, it will be presented in presenter mode. Also, please note that there is a timer set on the monitor, so please make sure to stick to the allocated presentation time.

Guidelines for Poster Presenters

1. The official language is English

2. Poster Size and Template

Posters must not exceed the following dimensions (A0 size): 841 mm (width) x 1,189 mm (height) and must be printed by the presenter. Each poster should include the title (preferably at the top), as well as the names and affiliations of the authors.

3. Presentation Schedule

- Posters will be displayed in the Grand Ballroom, 3F, EXCO. Each poster board is identified with a presentation number (not an abstract submission reference number) on the list of the program book.
- All poster presenters must be present at their designated poster presentation time to explain their research.
- Please note that all posters that have not been removed by the noticed dismounting time will be automatically taken down and discarded.

Category	Presentation Time	Poster Mounting	Poster Dismounting
Part 1	May 27, 18:00~19:00	May 27, 09:00~12:00	May 27, 19:00~20:00
Part 2	May 28, 18:00~19:00	May 28, 09:00~12:00	May 28, 19:00~20:00
Part 3	May 29, 18:00~19:00	May 29, 09:00~12:00	May 29, 19:00~20:00
Part 4	May 30, 18:00~19:00	May 30, 09:00~12:00	May 30, 19:00~20:00

4. Poster printing service (Onsite poster booth)

From May 27th to May 30th, the poster booth will be open from 09:00 am to 6:00 pm for poster collection.
You can collect your posters at the designated booth during this time.

※ Please provide the applicant's name and abstract reference number when collecting posters.

Best Poster Awards

Certificates will be given to outstanding poster presenters. Only the poster presented during the designated presenting time will be considered for the award. The award ceremony will be held during the closing ceremony on May 31 (Fri), 13:00-14:00, in the Convention Hall on the 5th floor of EXCO.

Access to Abstract

All abstracts can be accessed online at the congress website (**https://wbc2024.com/Onsite/index.php**)

Audio, Photo, Video, and Mobile Phone Policy

Please note that audio, photo, and video recording by various devices (including cameras, laptops, PDAs, mobile phones, watches, and tablet PCs) are strictly prohibited during all symposia and oral sessions unless prior permission is obtained from the congress organizer. Recording and photography in the poster area are also strictly prohibited. Mobile phones must also be switched off or set to silent mode while attending sessions.

WBC 2024
12th World Biomaterials Congress

WBC 2024
12th World Biomaterials Congress
May 26-31, 2024 | EXCO, DAEGU, KOREA

Plenary Lecture

May 27 Mon 10:40~11:30 (KST/UTC+9)

Molecular and cellular aspects of patient therapy using advanced intelligent systems

Nicholas A. Peppas
The University of Texas at Austin, USA

Biography

Professor Nicholas A. Peppas is an internationally known biomedical/chemical engineer, nanotechnologist and biomaterials scientist whose research contributions, innovations, inventions have led to 20 medical/pharmaceutical products and have contributed to the improvement of the quality of life of 800 million patients worldwide.

A native of Athens, Greece, Peppas is an elected member of the US-National Academy of Engineering, Academy of Medicine, American Academy of Arts and Sciences, Academy of Inventors, Academia Europaea, International Biomedical Academy, Canadian Engineering Academy, Indian National Engineering Academy, Chinese Academy of Engineering, Korean Academy of Science Technology, National Academy of France, Royal Academy of Spain, Academy of Athens, Greece, Academy of Romanian Scientists and Academy of Texas. He has served as a Visiting Professor in the Universities of Geneva, Paris-Sud, Santiago de Compostela. Madrid, Lisbon, Parma, Pavia, Napoli, Hecettepe/Ankara, Athens, Berlin, Hebrew University of Jerusalem, Hoshi University/Tokyo, Nanyang University/Singapore, Sichuan University, Peking Medical College.

Peppas is a distinguished professor in Biomedical Engineering, Chemical Engineering, Pediatrics, Surgery and Pharmacy at the University of Texas at Austin. His group has developed numerous biomaterials for medical devices and drug delivery systems for oral, buccal, sublingual and gastrointestinal delivery of drugs, peptides and proteins. One of the most published scientists in the world, he has 37 books, 1,650 publications. Cited in more than 200,000 references, Peppas is the inventor of numerous issued/pending, US/international patents and the founder of 3 start-up companies.

Honored by 170 Awards including NAE Founders Award, NAM Adam Yarmolinsky, Pharmaceutical Global Leader Award, Natta Award, Italy. Peppas holds a D.Eng. from NTU Athens, a ScD. from MIT and is the recipient of 13 honorary doctorates and professorships from France, Spain, Italy, Belgium, Greece, Slovenia, Romania and China.

Abstract

Advanced solutions of a number of biomedical engineering problems require that cellular and biological engineering converge with nanotechnology, advanced biomaterials and molecular biology to be used in a synergistic way to achieve targeted, effective vehicle for disease treatment. Cellular and molecular engineering play an important role in this effort. Engineering the molecular design of intelligent gels/biomaterials by controlling structure, recognition and specificity is the first step in coordinating and duplicating complex biological and physiological processes. Recent developments in siRNA and protein delivery have been directed towards the preparation of targeted formulations for protein delivery to specific sites, use of environmentally-responsive polymers to achieve pH- or temperature-triggered delivery, usually in modulated mode, and improvement of the behavior of their mucoadhesive behavior and cell recognition. We address certain aspects of the molecular basis of the design and synthesis characteristics of novel crosslinked networks capable of protein release as well as artificial molecular structures capable of specific molecular recognition of biological molecules. Molecular imprinting and micro-imprinting techniques, which create stereo-specific three-dimensional binding cavities based on a biological compound of interest can lead to preparation of biomimetic materials for intelligent drug delivery, drug targeting, and tissue engineering. In addition, we discuss certain molecular and modeling aspects of our work and we stress the future of the field in view of advances in computtional methods and the advent of artificil intelligence.

Keywords *: cellular engineering, intelligent biomaterials, biomimeic systems*

May 28 Tue 11:20~12:10 (KST/UTC+9)

Regeneration on chips and chips for regeneration: using microtechnology to advance the field of biomaterials-driven regenerative medicine

Pamela Habibovic
Maastricht University, The Netherlands

Biography

Pamela Habibovic is Professor of Inorganic Biomaterials at Maastricht University, the Netherlands.
Since February 2022, she holds the position of Rector of Maastricht University. Habibovic was a founding partner of MERLN Institute for Technology-Inspired Regenerative Medicine, established in 2014, and Chair of MERLN's Department for Instructive Biomaterials Engineering. Between 2019 and 2022, she was the Scientific Director of MERLN.
Initially trained as a chemical engineer, in 2005, Habibovic obtained a PhD degree from the University of Twente, the Netherlands on the topic of materials for biomedical applications. Following postdoctoral research at Children's Hospital Boston and McGill University, in 2008, she started her research group at the University of Twente. In 2014, she moved to Maastricht University. The main focus of her research is on synthetic bone graft substitutes, bioinorganics, nanomaterials for theranostics in regenerative medicine and high-throughput approaches in biomaterials research. For her research she received prestigious Veni, Vidi, Aspasia and Gravitation grants of the Dutch Research Council NWO, among other external research funds. She served as the President of the European Society for Biomaterials between 2017 and 2021 and as an Associate Editor of the RSC journal Biomaterials Science between 2019 and 2022. In 2017, she received the Jean Leray Award of the European Society for Biomaterials and in 2021 she was elected a Fellow of the Royal Society of Chemistry. She has published over 100 peer-review articles on the topic of biomaterials and regenerative medicine.

Abstract

Regenerative medicine therapies based on synthetic biomaterials are becoming increasingly attractive as an alternative to the more complex and expensive strategies based on tissue, cells or growth factors. Nevertheless, to develop biomaterials that are capable of spatiotemporally controlling physiological processes, a new set of tools is needed for design and fabrication of biomaterials and for studying their interactions with the biological system. In this lecture, a number of such tools will be discussed using biomaterials for musculoskeletal applications as an example. These include the use of micro- and nanotechnology to independently design individual properties of biomaterials, the application of microfluidics to increase throughput of production and complexity of screening of material-cell/tissue interactions and on-chip models to study biomaterial-driven regenerative processes. Future research directions towards making the latter in vitro models into implantables for regenerative medicine will also be discussed.

Keywords *: biomaterials, musculoskeletal regeneration, microtechnology*

May 28 Tue **15:20~16:10** (KST/UTC+9)

Minimally invasive interventional cardiovascular materials and devices

Yunbing Wang
Sichuan University, China

Biography

Prof. Yunbing Wang is the Director of National Engineering Research Center for Biomaterials of China, Dean of College of Biomedical Engineering of Sichuan University, and Vice President of Chinese Society for Biomaterials. His work has been focused on the research and application study of in-situ cardiovascular tissue repair and regeneration based on bioresorbable polymeric materials and devices with more than 200 scientific papers published, more than 500 patents issued/filed, and more than 100 invited presentations made. His research has been transformed into a variety of commercialized cardiovascular implantable devices and saved thousands of lives in China and abroad, including the world's first commercialized bioabsorbable occluder for the treatment of congenital heart disease which provides temporary occlusion and induces in situ tissue regeneration to solve the problem of traditional cardiac occluders, as well as the first commercialized bioabsorbable vascular stent. He developed a self-expanding transcatheter pulmonary valve through collaboration with company, which got CE approval in April 2022 and Chinese NMPA approval in July 2022. Some of his achievements were specifically reported by The Economist in 2022 and Nature in 2019 respectively. He was the First prize winner of the 2021 Technology Invention Award of the Ministry of Education of China.
In addition to his contribution in basic research and application in cardiovascular biomaterials and devices, he has demonstrated excellence in teaching and has supervised about 100 graduate students.

Abstract

Cardiovascular diseases have become the leading cause of death worldwide. Safe and efficient treatment is critical which strongly relies on the utilization of implantable cardiovascular devices and relevant materials, including vascular stents, artificial heart valves, cardiac occluders, vascular grafts and injectable hydrogels for heart failure. This talk will focus on the advanced techniques we developed in implantable cardiovascular materials and devices, including the first approved bioresorbable transcatheter ventricular septal defect (VSD) occluder in the world in 2022 for the treatment of congenital heart disease, the first approved bioresorbable patent foramen ovale (PFO) occluder worldwide in 2023 for the treatment of cardioembolic stroke, the self-expanding pulmonary valve replacement system with approval in both Europe and China in 2022, and the minimally invasive interventional transcatheter hydrogel injection system for the treatment of heart failure in clinical trial since 2021, etc.
We developed materials with good biocompatibility, tunable biodegradability, enhanced tissue repairing and regeneration capacity, along with functional coatings that can provide anti-coagulation, anti-calcification, anti-inflammation, and anti-infection properties. Representative outcomes include: 1) tailored design of recombinant humanized collagen that possess not only enhanced tissue repairing and regeneration capability, but also dramatically decreased thrombogenicity; 2) double bond cross-linking technique for bioprosthetic heart valves (BHVs) with enhanced anti-calcification and endothelialization potency; 3) functional coatings that mimic endothelial cell function, cell membranes or extra cellular matrix for cardiovascular tissue repair/regeneration.
Our further study will focus on the following aspects: 1) bioresorbable cardiac occluders and stents with enhanced tissue regeneration function; 2) artificial heart valves with improved biosafety and durability; and 3) injectable hydrogels with increased tissue regeneration capability for heart failure therapy. With innovations in cardiovascular material and device development, more advanced treatment options will be available to elevate cardiovascular disease treatment to a new level.

Keywords *: Cardiovascular material and device, Cardiac occluder, Artificial heart valve*

May 29 Wed **11:20~12:10** (KST/UTC+9)

Research and development of metallic biomaterials: central player of medical devices

Takao Hanawa
Tokyo Medical and Dental University, Japan

Biography

Dr. Takao HANAWA is a Council Member of the Science Council of Japan since 2020 and a Fellow of The International Union of Societies for Biomaterials Science and Engineering (IUSBS). He has also positions as Professor of Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University and Professor of Center for Advanced Medical Engineering Research and Development, Kobe University. He was Professor of Department of Metallic Biomaterials, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan, since 2004 and has retired 2023. He was once presidents of the Japanese Society for Biomaterials and Japanese Society for Dental Materials and Devices. He received his Ph.D. from Hokkaido University at 1989 and Tohoku University at 1998. He has experienced as Assistant Professor in Hokkaido University, Associate Professor in Tokushima University, and Deputy-in-General of Biomaterials Research Center, National Institute for Materials Science (NIMS). He has developed new metallic biomaterials such as zirconium alloys showing low magnetic susceptibility to decrease MRI artifact and several surface treatment techniques. Recently micro-arc oxidation process to add dual-function to titanium and nano-topography to accelerate the differentiation of stem cells by femto-second laser. In addition, interface reaction between titanium and living tissues is a life work of him, then near recently principle of the excellent biocompatibility of titanium has been elucidated from the viewpoint of electronic band structure of the passive film. He has published 312 original research papers and 106 review papers. His Scopus h-index is 51 at present.

Abstract

Many medical devices made of metals have been substituted by those made of ceramics and polymers during the last half century because of innovation in ceramics and polymers and their excellent biocompatibility and biofunction. In spite of this situation, over 70% of surgical implant devices, especially over 95% of orthopedic implants, still consist of metals due to large fracture toughness and durability of metals.
Research and development of metallic biomaterials can be classified as follows: (1) exploration and production of new alloy, (2) development of new manufacturing process (additive manufacturing techniques are classified here), (3) development of new surface treatment and surface modification technology, (4) development of surface morphology control technology, and (5) evaluation of mechanical properties, corrosion resistance, safety, biological property, remaining their excellent mechanical property.
In this lecture, the above items will be explained while showing actual examples of research and development of metallic biomaterials as follows with the problem and future prospect: the development of new alloys (MRI-compatible Zr alloys with low magnetic susceptibility and high entropy biomedical alloy), new manufacturing process (severe deformation of Ti alloy for dental narrow implant and creative application of additive manufacturing), immobilization of biofuctional molecules to inhibit bacterial and and platelet adhesion, surface treatment to add dual functions (bone formation and bacterial property), fabrication of cyclic nano/micro patterns to control differentiation of stem cells, and characterization of electronic structure of the passive film on CP Ti to elucidate the principle of excellent biocompatibility that may be essential to better understand the interface phenomena between materials and host bodies using materials informatics (MI) and materials digital transformation (material DX), because all biological and tissue reactions start from an electronic transfer of the surface.
The deep discussion on the above will enhance the understanding of the essence of metallic biomaterials.

Keywords *: Metals, medical device, durability*

May 29 Wed **15:20~16:10** (KST/UTC+9)

Designer nanocarriers for cancer therapy

Paula T. Hammond
Massachusetts Institute of Technology, USA

Biography

Paula T. Hammond is Institute Professor at the Massachusetts Institute of Technology and the Head of the Department of Chemical Engineering. She is a member of MIT's Koch Institute for Integrative Cancer Research, the MIT Energy Initiative, and a founding member of the MIT Institute for Soldier Nanotechnology. The core of her work is the use of electrostatics and other complementary interactions to generate functional materials with highly controlled architecture. Her research in nanomedicine encompasses the development of new biomaterials to enable drug delivery from surfaces with spatio-temporal control. She also investigates novel responsive polymer architectures for targeted nanoparticle drug and gene delivery, and has developed self-assembled materials systems for electrochemical energy devices.

Professor Paula Hammond was elected into the National Academy of Science in 2019, the National Academy of Engineering in 2017, the National Academy of Medicine in 2016, and American Academy of Arts and Sciences in 2013. She is one of only 25 distinguished scientists elected to all three national academies. She won the ACS Award in Applied Polymer Science in 2018, and she is also the recipient of the 2013 AIChE Charles M. A. Stine Award, which is bestowed annually to a leading researcher in recognition of outstanding contributions to the field of materials science and engineering, and the 2014 AIChE Alpha Chi Sigma Award for Chemical Engineering Research. She was selected to receive the Department of Defense Ovarian Cancer Teal Innovator Award in 2013, which supports a single visionary individual from any field principally outside of ovarian cancer to focus his/her creativity, innovation, and leadership on ovarian cancer research. By developing degradable electrostatically assembled layer-by-layer (LbL) thin films that enable temporal and even sequential controlled release from surfaces, Paula Hammond pioneered a new and rapidly growing area of multicomponent surface delivery of therapeutics that impacts biomedical implants, tissue engineering and nanomedicine. A key contribution is her ability to introduce not only controlled release of sensitive biologics, but her recent advances in actually staging the release of these drugs to attain synergistically timed combination therapies. She has designed multilayered nanoparticles to deliver a synergistic combination of siRNA or inhibitors with chemotherapy drugs in a staged manner to tumors, leading to significant decreases in tumor growth and a great lowering of toxicity. The newest developments from her lab offer a promising approach to messenger RNA (mRNA) delivery, in which she creates pre-complexes of mRNA with its capping protein and synthesized optimized cationic polypeptides structures for the co-complexation and stabilization of the nucleic acid-protein system to gain up to 80-fold increases in mRNA translation efficiency, opening potential for vaccines and immunotherapies. Professor Hammond has published over 320 papers, and over 20 patent applications. She is the co-founder and member of the Scientific Advisory Board of LayerBio, Inc. and a member of the Scientific Advisory Board of Moderna Therapeutics.

Abstract

One of the challenges of nanomedicine is determining sets of design rules that dictate where nanoparticles localize in the body, and the targeting of specific organs or cell types. We have developed a modular nanoparticle approach using core particles and layering them with an electrostatic layer-by-layer (LBL) process in a simple and elegant method of constructing highly tailored ultrathin polymer coatings. The resulting LbL nanoparticles (LbL NPs) have negatively charged outer layers that present polyelectrolytes in a hydrated brush arrangement that enables hydration, steric repulsion, colloidal and serum stability, and specific or non-specific targeting. Ultimately, it is also important to introduce other kinds of interactions, particularly when targeting specific cells such as immune or cancer cells; often these interactions include receptor-specific interactions, but non-specific interactions can also have a very significant role in directing particles to cancer or other disease-associated cell types. We seek to explore and exploit these interactions to target layer-by-layer and layered complex nanoparticles to a range of different cell types. Efforts on the use of high throughput sampling of nanoparticle-cell interactions on understanding nanoparticle-cell interactions and targeted uptake will also be discussed. Recent work includes addressing barriers to transport of these nanoparticles within tumors, and will be discussed, including work involving the understanding of these trafficking patterns and a means to leverage them toward the delivery of cytokines for activation of the immune system against ovarian cancer, a cancer which has not previously benefitted from immunotherapeutic approaches. Ongoing work also includes examination of the role of mechanical properties of the core nanoparticle in tumor targeting, and how these LbL NP systems might be adapted to enhance delivery across the blood-brain barrier and designed to target glioblastoma.

Keywords *: nanomedicine, cancer, electrostatic assembly*

May 30 Thu **11:20~12:10** (KST/UTC+9)

The human body as the source of biomaterials

João F. Mano
The University of Aveiro, Portugal

Biography

João F. Mano is a Full Professor at the Chemistry Department of University of Aveiro, Portugal, and vice-director of the Associate Laboratory CICECO – Aveiro Instituto of Materials, where he is directing the COMPASS Research Group (http://compass.web.ua.pt/). His research interests include the use of advanced biomaterials and cells towards the progress of multidisciplinary concepts to be employed in regenerative and personalised medicine. In particular, he has been applying biomimetic and nano/micro-technology approaches to polymer-based biomaterials and cell-rich systems to develop biomedical devices with improved structural and (multi-)functional properties, or in the engineering of microenvironments to control cell behaviour and organization, to be exploited clinically in advanced therapies or in drug screening. He is the Editor-in-Chief of Materials Today Bio (Elsevier). He has been coordinating or involved in many national and European research projects, including 2 Advanced Grants and 3 Proof-of-Concept Grants from the European Research Council. João F. Mano has received different honours and awards, including two honoris causa doctorates (Univ. of Lorraine and Utrecht Univ.) and was elected fellow of the European Academy of Sciences (FEurASc), Biomaterials Science & Engineering (FBSE) and American Institute of Medical and Biological Engineering (FAIMBE).

Abstract

Materials have been widely used in many Tissue Engineering (TE) solutions, as a structural support for adherent cells and as a vehicle to provide relevant biochemical and biophysical signals to control cell behavior. Different types of natural-based macromolecular materials have been proposed to prepare scaffolds for TE. We have been proposing the use of human-derived proteins that, upon chemical modification, could be used to generate adequate microenvironments to interact adequately with cells. We have selected two sources of such materials: (i) platelet lysates, containing mostly globular proteins including relevant growth factors with highly regenerative potential; and (ii) proteins from amniotic membrane or from the entire placenta, composed of fibrical proteins such as collagens and other compoents of the extra-cellular matrix. Due to their hydrophilic nature and richness in chemically active groups, these proteins can be chemical modified to generate materials with new or improved properties, while maintaining the biochemical features of human tissues. Hydrogels from these materials can be obtained from different crosslinking procedures, including photocrosslinking or supra-molecular assembly, to be used in a variety of forms, including injectable/bioprintable systems.
In a completely different viewpoint, we have been also leveraging the important role of the cells in the development of contructs for TE. Exploring human cells as materials precursors is an exciting conception to design living materials with adequate functional and structural properties similarly to what ensues in the human body. In our group we have been proposing possibilities of using lower relative amount of biomaterials in the hybrid constructs in order to assemble human cells in different geometries, including partially-coated cells, spherical aggregates (spheroids), fibres (fiberoids), membranes (cell-sheets) and cell-based hydrogels. Examples will be given on how bioengineered constructs could be obtained at different dimensional and length scales with such "materialized cells".

Keywords *: living materials, human proteins, hydrogels*

May 30 Thu **15:20~16:10** (KST/UTC+9)

Design of drug delivery guided by molecular imaging technology

Ick Chan Kwon
Korea Institute of Science and Technology, Korea, Republic of

Biography

Dr. Ick Chan Kwon is a tenured Principal Research Scientist at the Korea Institute of Science and Technology (KIST), a Professor at Korea University (KU-KIST Graduate School), and an Affiliated Professor at the University of Washington Seattle (Department of Bioengineering). He is also a Presidential Scholar at the KIST-DFCI On-Site-Lab in the Dana Farber Cancer Institute (Department of Cancer Biology). He earned his B.S. and M.S. in Engineering from Seoul National University, as well as his Ph.D. in Pharmaceutics and Pharmaceutical Chemistry from the University of Utah. He joined KIST after completing his post-doctoral studies at the University of Utah's Center for Controlled Chemical Delivery, where he began his research on polymeric nanoparticle-based drug delivery systems for antibiotics, anticancer medicines, and gene therapy. By merging molecular imaging and drug delivery systems with smart nano-probes, he also pioneered in the field of Theragnosis research. He was the president of the Korean Society of Molecular Imaging and an editor for the Journal of Controlled Release in Asia (Elsevier). He is a senior member of Korea's National Academy of Engineering and a fellow of the Korean Academy of Science and Technology.

Abstract

For decades, molecular imaging, capable of monitoring intercellular/intracellular molecular processes in organisms, has provided valuable information for a variety of research fields. Biomarkers such as enzymes, receptors, and proteins can provide information for early diagnosis of diseases and monitoring of therapeutic effects, and thus can be used as targets for molecular imaging. Among them, molecular imaging technology based on receptor-ligand interaction is emerging as a promising strategy for monitoring intractable diseases such as cancer. However, the basic requirement for this kind of imaging probe is to provide disease-specific information along with high imaging sensitivity. Here, we developed a self-quenching imaging probe capable of emitting fluorescence (activation) via a de-quenching reaction after internalization via receptor-ligand binding. Demonstrations of EGFR or CD47 target specific fluorescence signals will be presented in this presentation.

Keywords *: drug delivery, molecular imaging*

WBC 2024
12th World Biomaterials Congress
May 26-31, 2024 | EXCO, DAEGU, KOREA

Day at a Glance

Monday, May 27, 2024

Time	Room	Code	Program
Sunday, May 26, 2024			
16:00~18:00	Lobby, 3F, EXCO	Registration (Lobby, 3F, EXCO)	
19:00~21:00	Grand Ballroom, B1, Hotel Inter-Burgo EXCO	Welcome Reception	
Monday, May 27, 2024			
07:00~09:00	Lobby, 3F, EXCO	Registration (Lobby, 3F, EXCO)	
09:00~10:20	Grand Ballroom, B1, Hotel Inter-Burgo EXCO	Opening Ceremony	
10:20~10:40	Coffee Break		
10:40~11:30	Grand Ballroom, B1, Hotel Inter-Burgo EXCO	PL1	Plenary Lecture 1 - Dr. Nicholas A. Peppas
11:30~13:00	Lunch		
11:30~13:00	Affiliated Meeting 1		
11:30~13:00	Room 505	AF1-1	Council meeting of the European Society for Biomaterials
11:30~13:00	Room 504	AF1-2	IUSBSE Annual General Meeting (AGM)
11:30~13:00	Room 504	AF1-3	Bioactive Materials Awards Ceremony & Editorial Board Meeting
13:00~14:30	Concurrent Symposium 1		
13:00~14:30	Room 325-AB	S1-1	Advanced Biomaterials for Wet Tissue Adhesion
13:00~14:30	Room 325-CD	S1-2	Novel and multiple fabrication processes
13:00~14:30	Room 324-A	S1-3	Extracellular vesicles-based nanomedicine for theranostics
13:00~14:30	Room 324-B	S1-4	3D Organoids for Disease Modeling and Tissue Regeneration
13:00~14:30	Room 323	S1-5	Biomaterials for environment sensitive drug release
13:00~14:30	Room 322	S1-6	Smart biomaterials for the modulation of inflammation
13:00~14:30	Room 306-A	S1-7	Hierarchical biomaterials from particulate building blocks
13:00~14:30	Room 306-B	S1-8	Bioinspired Biomaterials and Strategies for Tissue Engineering
13:00~14:30	Room 314	S1-9	Biomaterials and Modular Approaches in Tissue Engineering and Regenerative Medicine
13:00~14:30	Room 321-A	S1-10	Characterization of biodegradable metals
13:00~14:30	Room 321-B	S1-11	Ex vivo model systems for cancer immunotherapy
13:00~14:30	Room 320-A	S1-12	Recent Advance in Plastic Surgery Research
13:00~14:30	Room 320-B	S1-13	Micro- and Nanotechnology for clinical diagnostics
13:00~14:30	Room 315	S1-14	Extracellular vesicles for biomedical applications
13:00~16:00	Workshop 1		
13:00~16:00	Room 211	W1-1	Recent Advanced in 3D Printing and Bioprinting for Medical Applications
14:30~14:40	Break		
14:40~16:10	Concurrent Symposium 2		
14:40~16:10	Room 325-AB	S2-1	Biomaterials with micro/nano patterns
14:40~16:10	Room 325-CD	S2-2	Biofunctional material and this use in medical device application
14:40~16:10	Room 324-A	S2-3	Nanomedicine for Immunotherapeutics
14:40~16:10	Room 324-B	S2-4	Neuronal tissue engineering
14:40~16:10	Room 323	S2-5	Biomaterials for advanced imaging and diagnostic technologies
14:40~16:10	Room 322	S2-6	Biomaterials Functionalization with Tethered Growth Factors and Proteins for Tissue Engineering Applications
14:40~16:10	Room 306-A	S2-7	Enzyme and Protease-responsive biomaterials
14:40~16:10	Room 306-B	S2-8	Advanced hemocompatible coatings
14:40~16:10	Room 314	S2-9	Controlling degradation of bioresorbable materials to direct cell behavior
14:40~16:10	Room 321-A	S2-10	Characterization of cell-scaffold interface in nanoscale for therapeutic applications
14:40~16:10	Room 321-B	S2-11	Biomaterials for Organoids
14:40~16:10	Room 320-A	S2-12	Clinically relevant dental biomaterials
14:40~16:10	Room 320-B	S2-13	Emerging biomaterials: From bench to startup
14:40~16:10	Room 315	S2-14	Biomineralization and biotemplating
15:00~17:00	Affiliated Meeting 1		
15:00~17:00	Room 505	AF1-4	Editorial Board Member Offline Meeting for the Journal
16:00~19:00	Workshop 2		
16:00~19:00	Room 211	W2-1	Biomaterials Science Excellence and Technology Translation
16:10~16:30	Coffee Break		

Monday, May 27, 2024

Time	Room	Code	Program
16:00~18:00	Concurrent Symposium 3		
16:00~18:00	Room 325-AB	S3-1	Symposium on Frontiers of Biomaterials Science and Engineering in Honor of Professor Xingdong Zhang
16:00~18:00	Room 325-CD	S3-2	Volumetric tissue printing
16:00~18:00	Room 324-A	S3-3	Platform technology for theranostics
16:00~18:00	Room 324-B	S3-4	Reproducing Reproductive Organs/Tissues via Tissue Engineering
16:00~18:00	Room 323	S3-5	Biomaterials for gene delivery applications
16:00~18:00	Room 322	S3-6	Elastin-based biomaterials
16:00~18:00	Room 306-A	S3-7	Plant and Polysaccharide-based biomaterials
16:00~18:00	Room 306-B	S3-8	Dynamic Hydrogels
16:00~18:00	Room 314	S3-9	The Macrophage as a target in biomaterial-based tissue regeneration strategies
16:00~18:00	Room 321-A	S3-10	Bio-fabrication/bioprinting and characterization for biomedical application
16:00~18:00	Room 321-B	S3-11	In vitro microphysiological systems for studying tumor microenvironment
16:00~18:00	Room 320-A	S3-12	Biomaterials Interventions in Aging Around the World
16:00~18:00	Room 320-B	S3-13	Drop-based microfluidic technologies
16:00~18:00	Room 315	S3-14	DNA or RNA Nanotechnologies
18:00~19:00	Grand Ballroom, 3F, EXCO	Poster Session 1	

Tuesday, May 28, 2024

Time	Room	Code	Program
Tuesday, May 28, 2024			
07:00~08:30	Lobby, 3F, EXCO	Registration	
08:30~09:30	Oral Session 1		
08:30~09:30	Room 325-AB	OS1-1	Hydrogel 1
08:30~09:30	Room 325-CD	OS1-2	Diverse fabrication technology 1
08:30~09:30	Room 324-A	OS1-3	Biomaterials for treatment of bone-related diseases and Bone regeneration
08:30~09:30	Room 324-B	OS1-4	Biomaterials scaffolds 1
08:30~09:30	Room 323	OS1-5	Biomaterials for medical applications 1
08:30~09:30	Room 322	OS1-6	Natural biomaterials for regenerative medicine
08:30~09:30	Room 306-A	OS1-7	Bioceramics 1
08:30~09:30	Room 306-B	OS1-8	Technology for Additive Manufacturing 1 (Non-polymeric)
08:30~09:30	Room 314	OS1-9	Biomaterials tissue regeneration 1
08:30~09:30	Room 321-A	OS1-10	Recent Advances in biomaterial Science and Engineering 1
08:30~09:30	Room 321-B	OS1-11	Biomaterials for organoids and organ models 1
08:30~09:30	Room 320-A	OS1-12	Dental & Craniofacial biomaterials 1
08:30~09:30	Room 320-B	OS1-13	Designer biomaterials using microfluidics
08:30~09:30	Room 315	OS1-14	Biosensors and Bioelectronics
08:30~09:30	Room 211	OS1-15	CRISPR and Gene editing, therapy technology
09:30~11:00	Concurrent Symposium 4		
09:30~11:00	Room 325-AB	S4-1	Biofabrication strategies to engineer complex tissues
09:30~11:00	Room 325-CD	S4-2	Bio-hybrid tissue printing
09:30~11:00	Room 324-A	S4-3	Engineering of biomaterials for drug delivery
09:30~11:00	Room 324-B	S4-4	Learning from Successful Failures in Tissue Engineering & Regenerative Medicine
09:30~11:00	Room 323	S4-5	Challenge to Microbiology Using Nanomaterials
09:30~11:00	Room 322	S4-6	Bioactive Materials and Structures for Tissue Interface Engineering
09:30~11:00	Room 306-A	S4-7	Synthetic protein-complexing hydrogel materials to direct cell fate
09:30~11:00	Room 306-B	S4-8	Advanced sustainable hydrogels for smart wearable technologies
09:30~11:00	Room 314	S4-9	Hydrogels for fibrocartilage regeneration
09:30~11:00	Room 321-A	S4-10	Materials and characterizations for cardiovascular applications
09:30~11:00	Room 321-B	S4-11	Microphysiological systems for modeling pathologies of central nervous system
09:30~11:00	Room 320-A	S4-12	Biomaterials for cardiovascular disease models and therapeutics
09:30~11:00	Room 320-B	S4-13	Nano- and microencapsulation technologies
09:30~11:00	Room 315	S4-14	Nucleic acid nanotechnology-based therapeutics and diagnostics
11:00~11:20	Coffee Break		
11:20~12:10	Convention Hall, 5F, EXCO	PL2	Plenary Lecture 2 - Dr. Pamela Habibovic
12:10~13:40	Lunch		
12:10~13:40	Affiliated Meeting 2		
12:10~13:40	Room 505	AF2-1	JBMR A Editorial Board Meeting
12:10~13:40	Room 504	AF2-2	Open Meeting of Chinese Society for Biomaterials
12:20~13:30	Luncheon Seminar 1		
12:20~13:30	Room 325-AB	LS1-1	Meet editors related to biomaterials
12:20~13:10	Room 325-CD	LS1-2	Company Seminar (DENTIS / Dalim Tissen)
12:20~13:20	Room 324-A	LS1-3	Women in Biomaterials Science
12:20~13:20	Room 323	LS1-4	Young Scientist Forum (YSF) I: Successful career development
12:20~13:10	Room 322	LS1-5	Company Seminar (MAVERICK / EnvisionTEC GmbH)
12:20~13:30	Room 306-A	LS1-6	FBSE WBC - Fellows Debate
13:40~15:10	Affiliated Meeting 2		
13:40~15:10	Room 505	AF2-3	SFB President's Advisory Committee

Time	Room	Code	Program
13:40~15:10	Concurrent Symposium 5		
13:40~15:10	Room 325-AB	S5-1	Roles of interfacial water states on cells/proteins/materials interactions and Biomaterials design
13:40~15:10	Room 325-CD	S5-2	Converged Technologies towards Tissue Biofabrication
13:40~15:10	Room 324-A	S5-3	Biomaterial-assisted gene therapy to treat musculoskeletal disorders
13:40~15:10	Room 324-B	S5-4	Musculoskeletal tissue engineering
13:40~15:10	Room 323	S5-5	Biomaterials in regeneration applications and drug delivery
13:40~15:10	Room 322	S5-6	Directing cell fate & tissue regeneration by extracellular matrix signalling
13:40~15:10	Room 306-A	S5-7	Supramolecular Nanomaterials
13:40~15:10	Room 306-B	S5-8	Programming dynamic materials for engineering functional tissues
13:40~15:10	Room 314	S5-9	Advanced biofabrication techniques for musculoskeletal tissue engineering
13:40~15:10	Room 321-A	S5-10	Antifouling biomaterials and surface characterization
13:40~15:10	Room 321-B	S5-11	Imaging and spectroscopic analysis of biomaterials and biological systems
13:40~15:10	Room 320-A	S5-12	Clinical Translation of Biodegradable Materials
13:40~15:10	Room 320-B	S5-13	Biomedical technology based on rheology
13:40~15:10	Room 315	S5-14	Immunoengineering Redefines Biocompatibility
15:10~15:20	Break		
15:20~16:10	Convention Hall, 5F, EXCO	PL3	Plenary Lecture 3 - Dr. Yunbing Wang
16:10~16:30	Coffee Break		
15:30~18:00	Affiliated Meeting 2		
15:30~16:30	Room 504	AF2-4	Steering Committee of the International College of Fellows - FBSE
16:30~18:00	Room 504	AF2-5	General Assembly of the FBSE
16:30~18:00	Concurrent Symposium 6		
16:30~18:00	Room 325-AB	S6-1	Functional materials for nerve regeneration
16:30~18:00	Room 325-CD	S6-2	Frontiers in Biofabrication Technologies
16:30~18:00	Room 324-A	S6-3	Biomaterials Award Session
16:30~18:00	Room 324-B	S6-4	Granular Hydrogels in Biology and Medicine
16:30~18:00	Room 323	S6-5	Biomaterials meets glia: biomaterials applications to study glia and gliopathologies
16:30~18:00	Room 322	S6-6	Smart biomaterials for the modulation of inflammation and coagulation process
16:30~18:00	Room 306-A	S6-7	Canadian Biomaterials Society Award Presentation Symposium
16:30~18:00	Room 306-B	S6-8	Bioadhesive Biomaterials
16:30~18:00	Room 314	S6-9	Biomaterials for the Maternal-Fetal Interface
16:30~18:00	Room 321-A	S6-10	Design, Fabrication and Evaluation of Biomedical Textiles
16:30~18:00	Room 321-B	S6-11	Liquid biopsy for cancer diagnosis and prognosis
16:30~18:00	Room 320-A	S6-12	Regulatory science for the translation of biomaterials products
16:30~18:00	Room 320-B	S6-13	Biomaterials' challenges: From academia to industry
16:30~18:00	Room 315	S6-14	Emerging Nanobiomaterials and Nanofabrication
16:30~18:40	Workshop 3		
16:30~18:30	Room 211	W3-1	Explore a better future with advanced science and technology
18:00~19:00	Grand Ballroom, 3F, EXCO	Poster Session 2	
19:00~21:00	Event Hall, 2F, Fashion Center Korea	Young Investigators' & Students' Night	

Wednesday, May 29, 2024

Time	Room	Code	Program
Wednesday, May 29, 2024			
07:00~08:30	Lobby, 3F, EXCO	Registration	
08:30~09:30	Oral Session 2		
08:30~09:30	Room 325-AB	OS2-1	Hydrogel 2
08:30~09:30	Room 325-CD	OS2-2	Diverse fabrication technology 2
08:30~09:30	Room 324-A	OS2-3	Inorganic materials for therapeutic agents
08:30~09:30	Room 324-B	OS2-4	Biomaterials scaffolds 2
08:30~09:30	Room 323	OS2-5	Biomaterials for medical applications 2
08:30~09:30	Room 322	OS2-6	Functional nanobiomaterials for tissue engineering 1
08:30~09:30	Room 306-A	OS2-7	Bioceramics 2
08:30~09:30	Room 306-B	OS2-8	Technology for Additive Manufacturing 2 (Non-polymeric)
08:30~09:30	Room 314	OS2-9	Biomaterials tissue regeneration 2
08:30~09:30	Room 321-A	OS2-10	Recent Advances in biomaterial Science and Engineering 2
08:30~09:30	Room 321-B	OS2-11	Biomaterials for organoids and organ models 2
08:30~09:30	Room 320-A	OS2-12	Dental & Craniofacial biomaterials 2
08:30~09:30	Room 320-B	OS2-13	Fabrication of biomaterials with bioindustrial applicability
08:30~09:30	Room 315	OS2-14	Recent Advances in biomaterial Science and Engineering 3
08:30~10:00	Affiliated Meeting 3		
08:30~10:00	Room 504	AF3-1	Annual General Meeting of the Canadian Biomaterials Society
09:30~11:00	Concurrent Symposium 7		
09:30~11:00	Room 325-AB	S7-1	Electrically conductive polymers for bioelectrode applications
09:30~11:00	Room 325-CD	S7-2	Micro/nano-patterning
09:30~11:00	Room 324-A	S7-3	Biomaterials for Biomedical Imaging: Applications and Challenges
09:30~11:00	Room 324-B	S7-4	Soft tissue regeneration
09:30~11:00	Room 323	S7-5	Biomaterials for polymeric therapeutics
09:30~11:00	Room 322	S7-6	Marine biomaterials towards tissue engineering
09:30~11:00	Room 306-A	S7-7	Self-assembling polymeric biomaterials for healthcare
09:30~11:00	Room 306-B	S7-8	Thermo responsive hydrogels and their biomedical applications
09:30~11:00	Room 314	S7-9	Functional nanomaterials for tissue engineering
09:30~11:00	Room 321-A	S7-10	Bioinspired antimicrobial and hemocompatible materials
09:30~11:00	Room 321-B	S7-11	Optical biosensors for fast and accurate diagnosis
09:30~11:00	Room 320-A	S7-12	Clinical application of biomaterials in Orthopaedic field
09:30~11:00	Room 320-B	S7-13	Biodegradable Metals for Medical Devices
09:30~11:00	Room 315	S7-14	Biomaterials for immunoisolation
11:00~11:20	Coffee Break		
11:20~12:10	Convention Hall, 5F, EXCO	PL4	Plenary Lecture 4 - Dr. Takao Hanawa
12:10~13:40	Lunch		
12:10~13:40	Affiliated Meeting 3		
12:10~13:30	Room 320-B	AF3-2	Society for Biomaterials and Artificial Organs (India) - General Meeting
12:10~13:40	Room 505	AF3-3	Editorial Board Meeting of Regenerative Biomaterials
12:10~13:40	Room 504	AF3-4	Society For Biomaterials (US) Annual Business Meeting
12:20~13:30	Luncheon Seminar 2		
12:20~13:10	Room 325-AB	LS2-1	Genoss: an innovating company with a variety of advanced medical devices
12:20~13:10	Room 325-CD	LS2-2	Company Seminar (Rousselot / Readily3D)
12:20~13:30	Room 324-A	LS2-3	Biomaterials Education Symposium at the WBC 2024
12:20~13:20	Room 323	LS2-4	Young Scientist Forum (YSF) II: The past, present, and future of Biomaterials Research (meeting mentors)
12:20~13:40	Room 322	LS2-5	Bridging the gap between preclinical and clinical research
12:20~13:30	Room 306-A	LS2-6	New PI in Biomaterials Research

Wednesday, May 29, 2024

Time	Room	Code	Program
13:40~15:10	Concurrent Symposium 8		
13:40~15:10	Room 325-AB	S8-1	Engineering regenerative biomaterials through bioinspired and biocooperative approaches
13:40~15:10	Room 325-CD	S8-2	Biofabrication in Suspensions Media for Tissue Engineering and In Vitro Modeling
13:40~15:10	Room 324-A	S8-3	Biomaterials for Image-guided Therapy
13:40~15:10	Room 324-B	S8-4	Novel strategy for bone tissue engineering in oro-maxillofacial region
13:40~15:10	Room 323	S8-5	Biomaterials for Antimicrobial and/or Antifouling coatings
13:40~15:10	Room 322	S8-6	Precision Medicine in Biomaterials Application for Regeneration
13:40~15:10	Room 306-A	S8-7	SFB Awards Ceremony and Plenary Presentations 1
13:40~15:10	Room 306-B	S8-8	Material Symbiosis: Beyond Biocompatibility
13:40~15:10	Room 314	S8-9	Advanced biofabrication for tissue engineering and disease modeling
13:40~15:10	Room 321-A	S8-10	Applications for Biomedical Fibrous Materials
13:40~15:10	Room 321-B	S8-11	3D-Tissue Models for Infection and Immunological Assays
13:40~15:10	Room 320-A	S8-12	Translation of bioactive ceramics from bench to bedside and emerging technologies for patient specific approaches
13:40~15:10	Room 320-B	S8-13	Biomaterials-based startups for tissue engineering
13:40~15:10	Room 315	S8-14	Biomaterials and Fabrication for Multicellular Engineered Systems
15:10~15:20	Break		
15:20~16:10	Convention Hall, 5F, EXCO	PL5	Plenary Lecture 5 - Dr. Paula T. Hammond
16:10~16:30	Coffee Break		
16:30~18:00	Concurrent Symposium 9		
16:30~18:00	Room 325-AB	S9-1	100 Years of Biomaterials Design Contributions of Edward Merrill (1923-2020)
16:30~18:00	Room 325-CD	S9-2	Global Perspectives in Launching an Independent Career
16:30~18:00	Room 324-A	S9-3	Ferroptosis-mediated cancer target therapy (Sponsored by Methods, an Elsevier's interdisciplinary journal in life and medical sciences)
16:30~18:00	Room 324-B	S9-4	Tissue-specific Strategies for Soft Connective Tissue Regeneration
16:30~18:00	Room 323	S9-5	3D Printing and Biofabrication in TERM, on the way to translation
16:30~18:00	Room 322	S9-6	Bioenergetic-active Materials for Regenerative Engineering
16:30~18:00	Room 306-A	S9-7	SFB Awards Ceremony and Plenary Presentations 2
16:30~18:00	Room 306-B	S9-8	Nature-inspired solutions: Bio-inspired hydrogels for new therapies and additive manufacturing
16:30~18:00	Room 314	S9-9	Biomaterials for 3D stem cell mechanotransduction and differentiation
16:30~18:00	Room 321-A	S9-10	Discovery, characterisation and applications of immune-instructive materials
16:30~18:00	Room 321-B	S9-11	Biomaterial-based platforms for tumor tissue engineering
16:30~18:00	Room 320-A	S9-12	Biomaterials in Stomatology Application and Clinical Translation
16:30~18:00	Room 320-B	S9-13	Biomaterials from Creation to the Present and Beyond
16:30~18:00	Room 315	S9-14	Biomaterials for Cultured Meat Production
18:00~19:00	Grand Ballroom, 3F, EXCO	Poster Session 3	
19:00~21:00	Grand Ballroom, B1, Hotel Inter-Burgo EXCO	Congress Dinner	

Thursday, May 30, 2024

Time	Room	Code	Program
Thursday, May 30, 2024			
07:00~08:30	Lobby, 3F, EXCO	Registration	
08:30~09:30	Oral Session 3		
08:30~09:30	Room 325-AB	OS3-1	Hydrogel 3
08:30~09:30	Room 325-CD	OS3-2	Technology for biofabrication 1
08:30~09:30	Room 324-A	OS3-3	Phospolipid-based materials for drug delivery
08:30~09:30	Room 324-B	OS3-4	Biomaterials scaffolds 3
08:30~09:30	Room 323	OS3-5	Biomaterials for medical applications 3
08:30~09:30	Room 322	OS3-6	Functional nanobiomaterials for tissue engineering 2
08:30~09:30	Room 306-A	OS3-7	Metals
08:30~09:30	Room 306-B	OS3-8	Materials for Additive Manufacturing 3 (Novel materials, 4D printing)
08:30~09:30	Room 314	OS3-9	Antimicrobial drug delivery 1
08:30~09:30	Room 321-A	OS3-10	Recent Advances in biomaterial Science and Engineering 4
08:30~09:30	Room 321-B	OS3-11	Biomaterials for organoids and organ models 3
08:30~09:30	Room 320-A	OS3-12	Nanobiomaterials 1
08:30~09:30	Room 320-B	OS3-13	Functionalized materials and multi-funtion materials for drug delivery
08:30~09:30	Room 315	OS3-14	Biomaterials and stem cells 1
09:30~11:00	Concurrent Symposium 10		
09:30~11:00	Room 325-AB	S10-1	Microgels for Microtissues
09:30~11:00	Room 325-CD	S10-2	Biomaterials and devices for cardiovascular applications
09:30~11:00	Room 324-A	S10-3	Biomaterials for Drug Delivery and Tissue Regeneration
09:30~11:00	Room 324-B	S10-4	Bone biomaterials for the elderly patients
09:30~11:00	Room 323	S10-5	Advanced Biomaterials and Nanomaterials for Implantable Devices
09:30~11:00	Room 322	S10-6	Extracellular matrix for mechanobiology and therapeutics
09:30~11:00	Room 306-A	S10-7	Biomimetic surface design for implantable devices
09:30~11:00	Room 306-B	S10-8	Next Generation Biomaterials for Stem Cell Culture and Differentiation
09:30~11:00	Room 314	S10-9	3D bioprinting of multiple cell lineages and organoids for tissue regeneration
09:30~11:00	Room 321-A	S10-10	Open-source and low-cost technologies for advanced biomaterials fabrication
09:30~11:00	Room 321-B	S10-11	Innovative biomaterials and devices for cardiovascular therapy
09:30~11:00	Room 320-A	S10-12	Up-to-date technology in periodontal tissue engineering
09:30~11:00	Room 320-B	S10-13	Materiobiology
09:30~11:00	Room 315	S10-14	Advanced biofunctional and bioinspired materials/devices for healthcare and tissue engineering
11:00~11:20	Coffee Break		
11:20~12:10	Convention Hall, 5F, EXCO	PL6	Plenary Lecture 6 - Dr. João F. Mano
12:10~13:40	Lunch		
12:20~13:30	Affiliated Meeting 4		
12:20~13:40	Room 325-CD	AF4-1	KSBM General Meeting
12:20~13:10	Room 320-B	AF4-2	Japanese Society for Biomaterials Member's Salon
12:20~13:10	Room 504	AF4-3	ASBTE Annual General Meeting
12:20~13:30	Luncheon Seminar		
12:20~13:10	Room 325-AB	LS3-1	Company Seminar (Dentium)
12:20~13:30	Room 324-A	LS3-2	Regulatory perspectives on biologics composed of cell therapy and biomaterials
12:20~13:20	Room 323	LS3-3	Young Scientist Forum (YSF) III: Experience from academic research to commercialization, start-up company

Thursday, May 30, 2024

Time	Room	Code	Program
13:40~15:10	Concurrent Symposium 11		
13:40~15:10	Room 325-AB	S11-1	Leveraging cell microenvironment and immune system to heal and regenerate
13:40~15:10	Room 325-CD	S11-2	Additive manufacturing of biomaterials
13:40~15:10	Room 324-A	S11-3	Biomaterials for theranostics
13:40~15:10	Room 324-B	S11-4	Nanofiberous scaffold for tissue engineering
13:40~15:10	Room 323	S11-5	Biomaterials for women's health engineering
13:40~15:10	Room 322	S11-6	Electroactive Biomaterials for Tissue Engineering and of Regenerative Medicine Applications
13:40~15:10	Room 306-A	S11-7	Biomimetic structured materials
13:40~14:55	Room 306-B	S11-8	Special Symposium in Memory of Professor Sung Wan Kim
13:40~15:10	Room 314	S11-9	Multifunctional biomaterials for blood contacting and cardiovascular applications
13:40~15:10	Room 321-A	S11-10	Glass for bone repair: From bioglass to glass-polymer hybrids
13:40~15:10	Room 321-B	S11-11	Biomaterials for immune tolerance against autoimmune diseases
13:40~15:10	Room 320-A	S11-12	Osteonecrosis: The Biology and Treatment with Implants, Biologics, and Cells
13:40~15:10	Room 320-B	S11-13	Melt Electrowriting of Scaffolds
13:40~15:10	Room 315	S11-14	Photothermal Biomaterials
15:10~15:20	Break		
15:20~16:10	Convention Hall, 5F, EXCO	PL7	Plenary Lecture 7 - Dr. Ick Chan Kwon
16:10~16:30	Coffee Break		
16:30~18:00	Concurrent Symposium 12		
16:30~18:00	Room 325-AB	S12-1	Mechanobiology with Biomaterials (in conjunction with MRC Mechanobiology Dental Medicine Research Center)
16:30~18:00	Room 325-CD	S12-2	Exploring the Frontiers of Micro-Nano Surface Engineering of Biomaterials
16:30~18:00	Room 324-A	S12-3	Acta Biomaterialia Gold and Silver Medals, 2024, Technical Session
16:30~18:00	Room 324-B	S12-4	Translational Regenerative Medicine
16:30~18:00	Room 323	S12-5	Biomaterials for Wearable and Implantable Medical Devices, Sensors, and Electronics
16:30~18:00	Room 322	S12-6	Sex as a biological variable in biomaterials research
16:30~18:00	Room 306-A	S12-7	ESB International Award 2024 Symposium
16:30~18:00	Room 306-B	S12-8	Functionalization and commercialization of nano/micro-structured materials
16:30~18:00	Room 314	S12-9	Interoception mediated musculoskeletal tissue regeneration
16:30~18:00	Room 321-A	S12-10	Biomaterial Systems and Devices for Hemostasis, Resuscitation, and Wound Care
16:30~18:00	Room 321-B	S12-11	Anti-pathogen surface technologies for medical devices
16:30~18:00	Room 320-A	S12-12	Translation of nanoplatforms for surgical applications
16:30~18:00	Room 320-B	S12-13	Multi-layer biomaterials: emerging applications
16:30~18:00	Room 315	S12-14	Understanding the role of the immune system in tissue generation, repair, and wound healing
18:00~19:00	Affiliated Meeting 4		
18:00~19:00	Room 325-AB	AF4-4	KSBM Special Session (Korean)
18:00~19:00	Grand Ballroom, 3F, EXCO	Poster Session 4	

Friday, May 31, 2024

Time	Room	Code	Program
Friday, May 31, 2024			
07:00~08:30	Lobby, 3F, EXCO	Registration	
08:30~09:30	Oral Session 4		
08:30~09:30	Room 325-AB	OS4-1	Conductive biomaterials
08:30~09:30	Room 325-CD	OS4-2	Technology for biofabrication 2
08:30~09:30	Room 324-B	OS4-4	Biomaterials for medical applications 4
08:30~09:30	Room 323	OS4-5	Biomaterials for medical applications 4
08:30~09:30	Room 322	OS4-6	Biomaterials for hard tissue regeneration
08:30~09:30	Room 306-A	OS4-7	Bioactive Hydrogels for Therapeutic Applications
08:30~09:30	Room 306-B	OS4-8	Immunmodulatory Biomaterials
08:30~09:30	Room 314	OS4-9	Antimicrobial drug delivery 2
08:30~09:30	Room 321-A	OS4-10	Recent Advances in biomaterial Science and Engineering 5
08:30~09:30	Room 321-B	OS4-11	Lab-on-a-chip
08:30~09:30	Room 320-A	OS4-12	Nanobiomaterials 2
08:30~09:30	Room 320-B	OS4-13	Biomaterials for cancer therapy
08:30~09:30	Room 315	OS4-14	Biomaterials and stem cells 2
09:30~11:00	Concurrent Symposium 13		
09:30~11:00	Room 325-AB	S13-1	Biomaterial strategies for delivering biologics and therapeutic cells to transform cancer immunotherapy
09:30~11:00	Room 325-CD	S13-2	Injectable Hydrogels For Regenerative Medicine
09:30~11:00	Room 324-A	S13-3	Self-assembled and stimuli responsive nanobiomaterials for delivery and targeting of biological drugs
09:30~11:00	Room 324-B	S13-4	New Biomaterials for Cardiovascular Tissue Engineering
09:30~11:00	Room 323	S13-5	Microfabrication techniques for vascularization of tissue engineered constructs
09:30~11:00	Room 322	S13-6	Regenerative Approaches for ENT Field
09:30~11:00	Room 306-A	S13-7	Calcium phosphate biomaterials design: Bioactivity, materials property and mechanisms of biomineralization
09:30~11:00	Room 306-B	S13-8	Biomaterial Design for Immunoengineering
09:30~11:00	Room 314	S13-9	Biomaterials for Women's Reproductive Health
09:30~11:00	Room 321-A	S13-10	Bioadhesive technologies for tissue repair and regeneration
09:30~11:00	Room 321-B	S13-11	Biomaterials for inflammatory bowel disease therapy
09:30~11:00	Room 320-A	S13-12	Gelatin and collagen based biomaterials: advances towards pharmaceutical and clinical translation of tissue biofabrication
09:30~11:00	Room 320-B	S13-13	Harnessing Biomaterials Strategies to Model Lung Disease, Repair Damaged Tissue, and Deliver Drugs for Treatment
09:30~11:00	Room 315	S13-14	Clinical and Pre-clinical Application of Biomaterials toward Next-Generation Medicine
11:00~11:20	Coffee Break		
11:20~12:50	Concurrent Symposium 14		
11:20~12:50	Room 325-AB	S14-1	Bioinspired supramolecular Biomaterials
11:20~12:50	Room 325-CD	S14-2	Cell Encapsulation and 3D Digital Assembly for Basic and Applied Biomedicine
11:20~12:50	Room 324-A	S14-3	Stimuli-Responsive Macromolecular Assembly for Theranostics
11:20~12:50	Room 324-B	S14-4	Biomaterial models of the hierarchical tumor microenvironment
11:20~12:50	Room 323	S14-5	Innovative biomaterials for neural applications
11:20~12:50	Room 322	S14-6	Advanced Biomaterials with sensing properties to overcome the XXI century health challenges
11:20~12:50	Room 306-A	S14-7	Smart zwitterionic polymer biomaterials
11:20~12:50	Room 306-B	S14-8	Molecular assembly control for supramolecular nano-biomaterials
11:20~12:50	Room 314	S14-9	Advanced Nanobiomaterials for Biomedical Applications
11:20~12:50	Room 321-A	S14-10	Advances in Antimicrobial and Antibiofilm Biomaterials
11:20~12:50	Room 321-B	S14-11	Fostering international multidisciplinary collaboration in biomaterials research: Australasia- Germany case study
11:20~12:50	Room 320-A	S14-12	Craniofacial tissues and implants
11:20~12:50	Room 320-B	S14-13	Creating 3D architectures to facilitate organ regeneration
12:50~13:00	Break		
13:00~14:00	Convention Hall, 5F, EXCO	Closing Ceremony	

12th World Biomaterials Congress

WBC 2024

May 26-31, 2024 | EXCO, DAEGU, KOREA

Daily Program

May 26 (Sun)

16:00~18:00 Lobby, 3F
Registration

18:00~20:00 Grand Ballroom, B1, Hotel Inter-Burgo EXCO
Welcome Reception

May 27 (Mon)

07:00~09:00 Lobby, 3F
Registration

09:00~10:20 Convention Hall, 5F
Opening Ceremony

10:20~10:40
Coffee Break

10:40~11:30 Convention Hall, 5F
Plenary Lecture 1

Chairs Andrés J. García / *Georgia Institute of Technology, USA*
Heungsoo Shin / *Hanyang University, Korea, Republic of*

Plenary Speaker 10:40 PL1
Molecular and cellular aspects of patient therapy using advanced intelligent systems
Nicholas A. Peppas / *The University of Texas at Austin, USA*

11:30~13:00
Lunch

11:30~13:00
Affiliated Meeting 1

Room 320-B AF1-1
Council meeting of the European Society for Biomaterials (by invitation only)

Room 505 AF1-2
IUSBSE Annual General Meeting (AGM) (by invitation only)

Room 504 AF1-3
Bioactive Materials Awards Ceremony & Editorial Board Meeting

Concurrent Symposium 1 (S1-1)

13:00~14:30 Room 325-AB
Advanced Biomaterials for Wet Tissue Adhesion

Organizer Terry Steele / *Nanyang Technological University, Singapore*
Chairs Terry Steele / *Nanyang Technological University, Singapore*

Keynote Speaker 13:00 S1-1-1
Adhesive elastic materials for wet tissue
Anthony Weiss / *University of Sydney, Australia*

Invited Speaker 13:25 S1-1-2
Advanced adhesive hydrogels for tissue sealing and therapeutics delivery
Nasim Annabi / *University of California, Los Angeles (UCLA), USA*

Oral Presenter 13:40 S1-1-3
Polyelectrolyte association of natural polymers for the preparation of adhesive hydrogels
Emilie-Rose Dode / *Université Claude Bernard Lyon 1, UMR 5223, CNRS, INSA Lyon, Université Jean Monnet, Ingénierie des Matériaux Polymères., France*

13:50 S1-1-4
Thermoresponsive bioadhesive hydrogel with dopamine-modified hyperbranched polymer crosslinker for enhanced wound healing
Jiseok Han / *UNIST, Korea, Republic of*

14:00 S1-1-5
Enhancing moist adhesion and wound healing with dopamine contained gelatin-silica hybrid dressings
Ren-Jei Chung / *National Taipei University of Technology, Chinese Taipei*

14:10 S1-1-6
calcium ion exchanged carboxymethyl cellulose self-gelling powder with superwettability and tissue adhesion for hemorrhage control
Shuyang Li / *the Affiliated Hospital of Southwest Medical University, China*

Concurrent Symposium 1 (S1-2)

13:00~14:30 Room 325-CD
Novel and multiple fabrication processes

Organizer Hee-Gyeong Yi / *Dept. of Convergence Biosystems Engineering/ Chonnam National University, Korea, Republic of*

Chairs Michiya Matsusaki / *Department of Applied Chemistry, Osaka University, Japan*
Hee-Gyeong Yi / *Dept. of Convergence Biosystems Engineering, Chonnam National University, Korea, Republic of*

Keynote Speaker 13:00 S1-2-1
Materials Science and Processing : From Tissue Engineering to Cultivated Meat
Tan Lay Poh / *School of Materials Science & Engineering, Nanyang Technological University (NTU), Singapore*

Invited Speaker 13:25 S1-2-2
Machine learning-assisted optimization of printability in extrusion-based bioprinting
Seung Yun Nam / *Pukyong National University, Korea, Republic of*

Oral Presenter 13:40 S1-2-3
3D Bio-Screen Printing for the Industrial Production of Textured Cultivated Meat Precursors
Robin Maatz / *Technical University of Darmstadt, Institute for printing science and technology, Germany*

13:50 S1-2-4
Formulation and bioprinting of xanthan gum/iron hydrogels with tunable stiffness for long-term carrying of unstable and low-viscosity proteins
Monize Caiado Decarli / *1- University of Maastricht and 2- University Medical Center Groningen, Netherlands*

14:00 S1-2-5
A hydrogel blend for immobilizing carrot callus with microextrusion bioprinting
Susmita Ghosh / *Chonnam National University, Korea, Republic of*

14:10 S1-2-6
Days- to weeks-long perfusion of human-scale artificial pancreatic tissues created using sacrificial embedded writing into alginate
Brenden Moeun / *McGill University, Canada*

Concurrent Symposium 1 (S1-3)

13:00~14:30 Room 324-A

Extracellular vesicles-based nanomedicine for theranostics

Organizer Kyung Min Park / *Incheon National University, Korea, Republic of*

Chair Michael Davis / *Emory University, USA*

Han Young Kim / *The Catholic University of Korea, Korea, Republic of*

Keynote Speaker
13:00 S1-3-1
Extracellular vesicles to diagnose and repair cardiac dysfunction
Michael Davis / *Emory University, USA*

Invited Speaker
13:25 S1-3-2
Versatility of Exosomes for Cancer Therapy
Donovan (Dong In) Kim / *University of Oklahoma, USA*

13:40 S1-3-3
Engineering of cell membrane-derived vesicles for therapeutic delivery
Han Young Kim / *The Catholic University of Korea, Korea, Republic of*

13:55 S1-3-4
Cellular function recovery through rejuvenation effect of exosome-mimicking nanovesicles extracted from stem cells
Suk Ho Bhang / *School of Chemical Engineering / Sungkyunkwan University, Korea, Republic of*

Oral Presenter
14:10 S1-3-5
Exploring exosome potential for bone healing with ceramic scaffolds
Ekaterina Maevskaia / *Center of Dental Medicine, Institute of Oral Biotechnology & Bioengineering, University of Zurich, Zurich, Switzerland, Switzerland*

Concurrent Symposium 1 (S1-4)

13:00~14:30 Room 324-B

3D Organoids for Disease Modeling and Tissue Regeneration

Organizer Yongsung Hwang / *Soonchunhyang University, Korea, Republic of*

Chair Yongsung Hwang / *Soonchunhyang University, Korea, Republic of*

Yu Suk Choi / *The University of Western Australia, Australia*

Keynote Speaker
13:00 S1-4-1
CRISPR/Cas-assisted genetics in organoids and pluripotent stem cell
Bon-Kyoung Koo / *Institute for Basic Science (IBS), Korea, Republic of*

Invited Speaker
13:25 S1-4-2
3D-bioprinted tissue and cancer models - a revolution in preclinical drug research?
Michał Wszoła / *Polbionica Sp. z o.o., Poland*

Oral Presenter
13:40 S1-4-3
Bioengineered airway organoids using proteinaceous artificial extracellular matrix for regeneration of traumatic airway injury
SeongMin Han / *Kyungpook National University, Korea, Republic of*

13:50 S1-4-4
A seamless intervascular encapsulation device for transplantation of pancreatic islets
Jonathan Brassard / *McGill University, Canada*

14:00 S1-4-5
Bioinspired Hydrogel for Highly Effective Transplantation of Hepatic Organoids to Treat Liver Failure
Dongchang Kim / *Kyungpook National University, Korea, Republic of*

14:10 S1-4-6
Permeability of the blood brain barrier in brain organoids under normoxic and hypoxic conditions as stroke model
Kathrin Kostka / *University of Duisburg-Essen, Inorganic Chemistry and Center of Nanointegration Duisburg-Essen (CENIDE), 45117 Essen, Germany, Germany*

Concurrent Symposium 1 (S1-5)

13:00~14:30 Room 323

Biomaterials for environment sensitive drug release

Organizer Won Jong Kim / *Pohang University of Science and Technology, Korea, Republic of*

Chair Jihoon Kim / *Yonsei University, Korea, Republic of*

Zhen Gu / *Zhejiang University, China*

Keynote Speaker
13:00 S1-5-1
Bioresponsive Drug Delivery
Zhen Gu / *Zhejiang University, China*

Invited Speaker
13:25 S1-5-2
Lipid based nanovesicles for targeted delivery of immune stimulating molecules
Hyejung Mok / *Konkuk University, Korea, Republic of*

Oral Presenter
13:40 S1-5-3
Sustained delivery of acetic acid to combat burn wound infection
Thomas Robinson / *University of Birmingham, United Kingdom*

13:50 S1-5-4
Infection-Triggered Adhesive Nanoparticles Capable of On-Demand Releasing Antibiotics for Self-Defensive Antibacterial Therapy
Zhaowei Jiang / *Brown University, USA*

14:00 S1-5-5
Antimicrobial solutions based on the controlled release of nitric oxide Withdrawal
Xuewei Wang / *Virginia Commonwealth University, USA*

Concurrent Symposium 1 (S1-6)

13:00~14:30 Room 322

Smart biomaterials for the modulation of inflammation

Organizer Lan Xiao / *Queensland University of Technology, Australia*

Chair Lan Xiao / *Queensland University of Technology, Australia*

Yulin Li / *East China University of Science and Technology, China*

Keynote Speaker
13:00 S1-6-1
Dynamic immune modulation empowered by designer biomaterials
Yong Taik Lim / *Sungkyunkwan University, Korea, Republic of*

Invited Speaker
13:25 S1-6-2
Heparin loading microsphere conjugated pancreatic islets transplantation for prevention of IBMIR
Jee-Heon Jeong / *Sungkyunkwan University, Korea, Republic of*

13:40 S1-6-3
Synthetic nano-engineered antimicrobial polymers (SNAPs)
Sebastien Perrier / *University of Warwick, United Kingdom*

Oral Presenter
13:55 S1-6-4
Nanozymes-armed Microbes for Alleviating Intestinal Inflammation and Microbiota Dysbiosis
Zhengwei Mao / *Zhejiang University, China*

14:05 S1-6-5
Effects of shape and surface property of thermoresponsive core-corona type particles on phagocytic behavior of macrophages
Akihiko Kikuchi / *Tokyo University of Science, Japan*

14:15 S1-6-6
Gas therapy and nanomedicine
Xiaojun Cai / *Wenzhou Medical University, China*

Concurrent Symposium 1 (S1-7)

13:00~14:30 Room 306-A

Hierarchical biomaterials from particulate building blocks

Organizer Mani Diba / *Radboud University Medical Center, Netherlands*

Chair Mani Diba / *Radboud University Medical Center, Netherlands*

Marian Hettiaratchi / *University of Oregon, USA*

Keynote Speaker
13:00 S1-7-1
INJECTABLE SYNTHETIC MOLECULAR AND COLLOIDAL BUILDING BLOCKS TO OVERCOME CHALLENGES IN TISSUE ENGINEERING
Laura De Laporte / *DWI - Leibniz Institute for Interactive Materials, Germany*

Invited Speaker
13:25 S1-7-2
Biopolymer Networks Packed with Microgels: Metastable Strain Stiffening and Shaping
Thomas E. Angelini / *University of Florida, USA*

13:40 S1-7-3
Micro- and nanomodules for the legolization of organ fabrication
Huanan Wang / *Dalian University of Technology, China*

Oral Presenter
13:55 S1-7-4
Host–guest chemistry for the design of modular functional polymer–nanoparticle hydrogels
Stéphane Bernhard / *ETH Zürich, Switzerland*

14:05 S1-7-5
Guest-host interlinked microporous annealed particle hydrogels as an injectable scaffold for islet transplantation
Edward Phelps / *University of Florida, J. Crayton Pruitt Family Department of Biomedical Engineering, USA*

Concurrent Symposium 1 (S1-8)

13:00~14:30 Room 306-B

Bioinspired Biomaterials and Strategies for Tissue Engineering

Organizer Nuno Neves / *3B's Research Group, University of Minho, Portugal*

Chair Rui Reis / *3B's Research Group, University of Minho, Portugal*

Keynote Speaker
13:00 S1-8-1
News Bioinspired Ways to Address Complexity and Disease Models by Looking into Cell/Materials Interactions
Rui Reis / *3B's Research Group, University of Minho, Portugal*

Invited Speaker
13:25 S1-8-2
Polyacrylamide/Gel-based Self-healing Artificial Tympanic Membrane for Drug Delivery of Otitis Treatment
Hwan Kim / *Korea National University of Transportation, Korea, Republic of*

13:40 S1-8-3
Design principles toward the development of biomimetic red blood cells
Minkyu Kim / *University of Arizona, USA*

Oral Presenter
13:55 S1-8-4
***In situ* artificial enamel formation via laser-assisted rapid pseudo-biomineralization**
Ayako Oyane / *Nanomaterials Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan*

14:05 S1-8-5
Next generation of biomimetic materials for cornea repair
Aidan MacAdam / *University of Ottawa, Canada*

Concurrent Symposium 1 (S1-9)

13:00~14:30 Room 314

Biomaterials and Modular Approaches in Tissue Engineering and Regenerative Medicine

Organizer Jeroen Leijten / *University Twente, Netherlands*

Chair Aleksandr Ovsianikov / *TU Wien, Austria*

Jeroen Leijten / *University of Twente, Netherlands*

Keynote Speaker
13:00 S1-9-1
Organoid Slurries as Modular Bioinks
Mark Skylar-Scott / *Stanford University, USA*

Invited Speaker
13:25 S1-9-2
Smart Design of Biomaterials for Tissue Engineering Applications
Junmin Lee / *Postech, Korea, Republic of*

13:40 S1-9-3
Polyphenol-based Nano-Microparticles for Tissue Engineering
Su-Hwan Kim / *Dong-A University, Korea, Republic of*

Oral Presenter
13:55 S1-9-4
Anisotropic 3D hydrogels with spatial patterns in degradation guide hMSC differentiation
Claudia Garrido / *Charite, Germany*

14:05 S1-9-5
Emerging strategies in bone regeneration
Mariana Ionita / *National University of Science and Technology Politehnica Bucharest, Romania*

Concurrent Symposium 1 (S1-10)

13:00~14:30 Room 321-A

Characterization of biodegradable metals

Organizer Hyung-Seop Han / *Center for Biomaterials/ Korea Insitute of Science and Technology, Korea, Republic of*

Chair Hyung-Seop Han / *Center for Biomaterials/ Korea Insitute of Science and Technology, Korea, Republic of*

Sanglhn Han / *Center for Biomaterials, Biomedical Research Division, Korea Institute of Science and Technology, Korea, Republic of*

Keynote Speaker
13:00 S1-10-1
Evidences and challenges in the characterization of bioabsorbable metals based on Fe, Mg, Zn for temporary medical devices
Diego Mantovani / *Department of Mining, Metallurgical and Materials Engineering/Laval University, Canada*

Invited Speaker
13:25 S1-10-2
Study on the biodegradation behavior of pure molybdenum
Yufeng Zheng / *School of Materials Science and Engineering/ Peking University, China*

13:40 S1-10-3
3D-Printed Intelligent Biodegradable Implant
Seung-Kyun Kang / *Materials Science and Engineering/ Seoul National University, Korea, Republic of*

13:55 S1-10-4
R & D and application of biomedical High purity Mg materials with high strength
Zhentao Yu / *Jinan University, China*

Oral Presenter
14:10 S1-10-5
Surface finishing electropolishing processes for additively manufactured Fe-based biodegradable metals contacting blood
Marta María Multigner Domínguez / *Rey Juan Carlos University, Spain*

14:20 S1-10-6
Development and clinical translation of biodegradable high-purity magnesium internal fixation screw
Dewei Zhao / *Affliated Zhongshan Hospital of Dalian University, China*

Concurrent Symposium 1 (S1-11)

13:00~14:30 Room 321-B

Ex vivo model systems for cancer immunotherapy

Organizer Junsang Doh / *Seoul National University, Korea, Republic of*

Chair Junsang Doh / *Seoul National University, Korea, Republic of*

Kyobum Kim / *Dongguk Univ, Korea, Republic of*

Keynote Speaker
13:00 S1-11-1
Susan Thomas / *Georgia Tech, USA*

Invited Speaker
13:25 S1-11-2
Junsang Doh / *Seoul National University, Korea, Republic of*

Oral Presenter
13:40 S1-11-3
3D in vitro models of sinonasal cancers as a personalized platform to study new drugs
Serena Danti / *University of Pisa, Italy*

13:50 S1-11-4
Cell derived extracellular matrices for tumor models for in vitro testing
Elisabeth Engel / *Universitat Politecnica de Catalunya, Spain*

14:00 S1-11-5
Hydrolytically Degradable, Micro-organoids for Spatial Patterning of Human Lymph Node Tissue Chips
Valeria Montserrat Juarez / *Georgia Institute of Technology, USA*

14:10 S1-11-6
IN VITRO HYDROGEL-BASED MODELS TO OBSERVE GLIOBLASTOMA SPHEROID GROWTH, INVASION AND THERAPY RESPONSIVENESS AT MATRIX INTERFACES
Eya Ferchichi / *Saint Louis University, USA*

Concurrent Symposium 1 (S1-13)

13:00~14:30 Room 320-B

Micro- and Nanotechnology for clinical diagnostics

Organizer Jinmyoung Joo / *Ulsan National Institute of Science and Technology, Korea, Republic of*

Chair Joo Hun Kang / *Ulsan National Institute of Science and Technology, Korea, Republic of*

Ester J. Kwon / *University of California San Diego, USA*

Keynote Speaker
13:00 S1-13-1
Bioengineering Synthetic Biomarkers for Earlier Cancer Detection
Gabe Kwong / *Georgia Institute of Technology, USA*

Invited Speaker
13:25 S1-13-2
Activity-based nanosensors for calpain activity as biomarkers in traumatic brain injury
Ester J. Kwon / *University of California San Diego, USA*

Oral Presenter
13:40 S1-13-3
Nanomaterials enabled microfluidic chip for nucleic acid detection without pre-extraction
Yu Zhang / *Shandong University, China*

13:50 S1-13-4
Lab-in-a-fiber (LiF) device for detection and capturing of cancer cells
João Carlos Varela / *KTH Royal Institute of Technology/Science for Life Laboratory, Sweden*

14:00 S1-13-5
Putrescine binding mechanism with Human Serum Albumin
Vida Dehghan Niestanak / *University of Alberta, Canada*

14:10 S1-13-6
Metal-Organic Framework-Based Nanozymes for Colorimetric Detection of Alzheimer's Disease Biomarker
Qingqing Fan / *University of New South Wales, Australia*

14:20 S1-13-7
A CRISPR/Cas fluorescence aptasensor for the rapid and sensitive detection of ampicillin
Minhaz Uddin Ahmed / *Universiti Brunei Darussalam, Brunei Darussalam*

Concurrent Symposium 1 (S1-14)

13:00~14:30 Room 315

Extracellular vesicles for biomedical applications

Organizer Eunji Chung / *University of Southern California, USA*

Chair Eunji Chung / *University of Southern California, USA*

Minh Le / *National University of Singapore, Singapore*

Keynote Speaker
13:00 S1-14-1
Delivery of nucleic acid therapeutics using extracellular vesicles from red blood cells
Minh Le / *National University of Singapore, Singapore*

Invited Speaker
13:25 S1-14-2
Extracellular Vesicle (EV) And EV-mimetic Therapies For Joint Disorders
Wei Seong Toh / *National University of Singapore (NUS), Singapore*

13:40 S1-14-3
Digital detection of tumor-derived EVs in blood plasma
Yoon-Kyoung Cho / *UNIST, Korea, Republic of*

Oral Presenter
13:55 S1-14-4
Endogenous Protease Mediated Delivery of Engineered Immunomodulatory Extracellular Vesicles
Kasey Leung / *University of Illinois Chicago, USA*

14:05 S1-14-5
A biomimetic enriched microenvironment strategy based on exosomes-loaded hydrogel to promote poststroke recovery via endogenous neurogenesis
Yifan Liang / *Beijing Tsinghua Changgung Hospital, School of Clinical Medicine, Tsinghua University, China*

14:15 S1-14-6
Endovesiclosis: A Novel Technology for Nanoparticle Labeling of Extracellular Vesicles
Koushik Debnath / *University of Illinois Chicago, USA*

Workshop 1 (W1-1)

13:00~16:00 Room 211

Recent Advanced in 3D Printing and Bioprinting for Medical Applications

Organizer Roger Narayan / *UNC/NCSU Joint Department of Biomedical Engineering, USA*

Chair Roger Narayan / *UNC/NCSU Joint Department of Biomedical Engineering, USA*

Jinah Jang / *Pohang University of Science and Technology, Korea, Republic of*

Speaker (30 min)
13:00 W1-1-1
Wei Sun / *Drexel University and Tsinghua University, China*

13:30 W1-1-2
Novel Materials for Regenerative Medicine
James J. Yoo / *Wake Forest Institute for Regenerative Medicine, USA*

14:00 W1-1-3
Jinah Jang / *Pohang University of Science and Technology, Korea, Republic of*

14:30 W1-1-4
Medical device applications of photopolymerization-based 3D printing
Roger Narayan / *UNC/NCSU Joint Department of Biomedical Engineering, USA*

15:00 W1-1-5
Water-responsive 4D printing using a hydrophobic plant protein zein as the ink for biomedical application
Jinye Wang / *Shanghai Jiao Tong University, China*

13:30~14:40

Break

Concurrent Symposium 2 (S2-1)

14:40~16:10 Room 325-AB

Biomaterials with micro/nano patterns

Organizer Won-Gun Koh / *Yonsei University, Korea, Republic of*

Chair Won-Gun Koh / *Yonsei University, Korea, Republic of*

Wonjae Lee / *Duke University, USA*

Keynote Speaker
14:40 S2-1-1
Designing bioactive microcapsules for scalable cultivation of stem cells
Alexander Revzin / *Mayo Clinic, USA*

Invited Speaker
15:05 S2-1-2
Micro- and nanopatterning modification of biomaterials to enhance vascular cell responses for vascular tissue engineering applications
Evelyn Yim / *University of Waterloo, Canada*

15:20 S2-1-3
Designing Biomimetic Soft Materials with Tailored Nanostructures and Properties for Advanced Functional Applications
Yeongseon Jang / *University of Florida, USA*

Oral Presenter
15:35 S2-1-4
Hydrogels with Magnetic Gradients/Patterns for Tissue Engineering Applications
Ángel Viteri / *Biomaterials, Biomechanics and Tissue Engineering Group, Spain*

15:45 S2-1-5
Multiscale biomechanical investigation of porous Mg-based WZM211 alloy for bone regeneration: from *in vitro* to *in vivo*
Withdrawal
Roxane Bonithon / *University of Portsmouth, United Kingdom*

Concurrent Symposium 2 (S2-2)

14:40~16:10 Room 325-CD

Biofunctional material and this use in medical device application

Organizer Jayden Park / *Evonik Korea Ltd., Korea, Republic of*

Chair Hyuk Sang Yoo / *Kangwon National University, Korea, Republic of*

Jake Cho / *Evonik Korea Ltd., Korea, Republic of*

Keynote Speaker
14:40 S2-2-1
Innovating biomaterials for clinical use
Andreas Karau / *Evonik Operations GmbH, Germany*

Invited Speaker
15:05 S2-2-2
Advancements in 3D-printed bioresorbable medical devices, bio-surgical solutions, and 3D bioprinting
Heidy Cruz / *T&R Biofab, Korea, Republic of*

15:20 S2-2-3
Artificial Intelligence Convergence Hyper-personalized SKIN Regeneration 3D Bioprinting Technology
Jeehee Kim / *ROKIT Healthcare, Inc., Korea, Republic of*

15:35 S2-2-4
Biomimetic and biosynthetic building blocks as platform technology in 3D-bioprinting
Andreas Blaeser / *Technical University of Darmstadt, Institute for Biomedical printing technology, Germany*

Oral Presenter
15:50 S2-2-5
Minimalistic strategies for designing new biomaterial solutions: From thin platforms to living materials
Tiago Correia / *University of Aveiro, Portugal*

16:00 S2-2-6
Bioinspired alginate-based bioinks to fabricate chemomechanically relevant disease models of hepatic steatosis
Giuseppe Guagliano / *Department of Chemistry, Materials, and Chemical Engineering 'G. Natta', Politecnico di Milano, Milan, Italy, Italy*

Concurrent Symposium 2 (S2-3)

14:40~16:10 Room 324-A

Nanomedicine for Immunotherapeutics

Organizer In-Kyu Park / *Chonnam National University, Korea, Republic of*

Co-organizer Won Jong Kim / *Pohang University of Science and Technology (POSTECH), Korea, Republic of*

Chair In-Kyu Park / *Chonnam National University, Korea, Republic of*

Chien-Wen Jeff Chang / *National Tsing Hua University, Chinese Taipei*

Keynote Speaker
14:40 S2-3-1
Control of Nitric Oxide for the Treatment of Inflammatory Disease
Won Jong Kim / *Pohang University of Science and Technology (POSTECH), Korea, Republic of*

Invited Speaker
15:05 S2-3-2
Nano-Sensor-Based Isolation and Characterization of Multidrug-Resistant Human Cancer Cells
Chien-Wen Jeff Chang / *National Tsing Hua University, Chinese Taipei*

15:20 S2-3-3
mRNA Vaccine Delivery using Polymeric Platforms for Global Health Equity
Jooli Han / *Massachusetts Institute of Technology (MIT), USA*

15:35 S2-3-4
Modification of antigenicity of cancer cells by conjugate consisting of hyaluronic acid and foreign antigen
Shinichi Mochizuki / *The University of Kitakyushu, Japan*

Oral Presenter
15:50 S2-3-5
Biomedical Application of Engineering NanoAlum Beyond Drug Delivery Systems
Withdrawal
Lingxiao Zhang / *Aarhus University, Denmark*

16:00 S2-3-6
Immunomodulatory, highly respirable yeast beta-glucan microparticles prepared by pressurized gas expanded liquid (PGX) technology to treat idiopathic pulmonary fibrosis
Nate Dowdall / *McMaster University, Canada*

Concurrent Symposium 2 (S2-4)

14:40~16:10 Room 324-B

Neuronal tissue engineering

Organizer In Bo Han / *CHA University School of Medicine, Korea, Republic of*

Chair In Bo Han / *CHA University School of Medicine, Korea, Republic of*

Xiang Zeng / *Sun-Yat-Sen University, China*

Keynote Speaker
14:40 S2-4-1
Grafting Tissue Engineering Neural Network Tissueoid Relays Excitatoty Neural Signals to Repair Complete Spinal Cord Injury
Xiang Zeng / *Sun-Yat-Sen University, China*

Invited Speaker
15:05 S2-4-2
SMART 3D Assembly of Nanomedicine and Stem Cells for Spine and Spinal Cord Regeneration
Letao Yang / *Tongji University, China*

Oral Presenter
15:20 S2-4-3
Microfiber topography drives neural and specifically oligodendroglial differentiation and extracellular matrix deposition in 3D hydrogels
Kyle Lampe / *University of Virginia, USA*

15:30 S2-4-4
A Recombinant Elastin-Like Protein-based Hydrogel Enhances Neuroprotection in a Neonatal Rat Model of Arterial Ischaemic Stroke
Maria Martinez-Vega / *Hospital Clinico San Carlos/Universidad Cmplutense, Spain*

15:40 S2-4-5
Let's talk about neuroprotection! Exploring biodegradable dendrimers as delivery vectors in stroke
Marília Torrado / *i3S - Institute for Research and Innovation in Health, INEB - Institute of Biomedical Engineering of the University of Porto, ICBAS - School of Medicine and Biomedical Sciences of the University of Porto, Portugal*

15:50 S2-4-6
Rolipram loaded PgP nanoparticles via intrathecal administration reduces secondary injury and improves motor function after spinal cord injury
Jeoung Soo Lee / *Clemson University, USA*

Concurrent Symposium 2 (S2-5)

14:40~16:10 Room 323

Biomaterials for advanced imaging and diagnostic technologies

Organizer Ki Su Kim / *Pusan National University, Korea, Republic of*

Chair Ki Su Kim / *Pusan National University, Korea, Republic of*

Seung Yun Yang / *Pusan National University, Korea, Republic of*

Keynote Speaker
14:40 S2-5-1
Advanced Theranostic Imaging: Unraveling Biodistribution and Tissue-Specific Targeting
Hak Soo Choi / *Harvard Medical School, USA*

Invited Speaker
15:05 S2-5-2
Design of nanomaterials for remote control of regenerative and cancer therapy and imaging
Heemin Kang / *Korea University, Korea, Republic of*

15:20 S2-5-3
***In vitro* photothermal therapy and immunotherapy for the lung cancer adenocarcinoma with molecularly imprinted composite nanoparticles**
Hung-Yin Lin / *National University of Kaohsiung, Chinese Taipei*

Oral Presenter
15:35 S2-5-4
Hydrogel based swellable microneedle for transdermal biosensing
Chenjie Xu / *City University of Hong Kong, Hong Kong SAR, China*

15:35 S2-5-5
Tracking implant degradation via radiographical monitoring utilizing tantalum oxide nanoparticle contrast agents
Kendell Pawelec / *Michigan State University, USA*

Concurrent Symposium 2 (S2-6)

14:40~16:10 Room 322

Biomaterials Functionalization with Tethered Growth Factors and Proteins for Tissue Engineering Applications

Organizer Oh Hyeong Kwon / *Kumoh National Institute of Technology, Korea, Republic of*

Chair Oh Hyeong Kwon / *Kumoh National Institute of Technology, Korea, Republic of*

Naoki Kawazoe / *National Institute for Materials Science, Japan*

Keynote Speaker
14:40 S2-6-1
Mussel-inspired adhesive growth factors for biosignalling materials.
Yoshihiro Ito / *RIKEN Institute, Japan*

Invited Speaker
15:05 S2-6-2
High-performance hydrogel bioadhesives and dressings for wounds healing
Hongli Mao / *Nanjing Tech University, China*

Oral Presenter
15:20 S2-6-3
Cysteine mastery: transforming platelet lysate proteins into advanced microparticles
Maria Clara Gomes / *University of Aveiro, Portugal*

15:30 S2-6-4
Suspension sprayed calcium phosphate (CaP) coatings with antibacterial properties
Maria Carolina Lanzino / *University Stuttgart, Germany*

15:40 S2-6-5
Polymer-based self-assembled coacervates
Pengchao Zhao / *South China University of Technology, China*

15:50 S2-6-6
Surface functionalization by micropatterning for investigation of stem cell differentiation in the viscous microenvironment
Naoki Kawazoe / *National Institute for Materials Science, Japan*

Concurrent Symposium 2 (S2-7)

14:40~16:10 Room 306-A

Enzyme and Protease-responsive biomaterials

Organizer Tommy Pashuck / *Lehigh University, USA*

Chair Tommy Pashuck / *Lehigh University, USA*

Rona Chandrawati / *University of New South Wales, Australia*

Keynote Speaker
14:40 S2-7-1
Introduction of dynamic reciprocity in supramolecular elastomeric materials and coatings
Patricia Dankers / *Eindhoven University of Technology, Netherlands*

Invited Speaker
15:05 S2-7-2
Design of Glucose-Responsive Biomaterials
Matthew Webber / *University of Notre Dame, USA*

Oral Presenter
15:20 S2-7-3
Nanozymes and polymers for nitric oxide delivery from prodrugs
Rona Chandrawati / *University of New South Wales, Australia*

15:30 S2-7-4
Identifying membrane-specific protease substrate peptides for improved hydrogel design
Tommy Pashuck / *Lehigh University, USA*

15:40 S2-7-5
Alkaline phosphatase responsive disassembly and intracellular polymerization for the supramolecular senolytics with high selectivity
Sangpil Kim / *UNIST, Korea, Republic of*

15:50 S2-7-6
Pepsin-digested ECM hydrogels promote inflammation and migration
Carolina Herranz-Diez / *Unitat de Biofísica i Bioenginyeria, Facultat de Medicina i Ciències de la Salut, Universitat de Barcelona, 08036 Barcelona, Spain, Spain*

16:00 S2-7-7
Targeted Delivery and Enzyme-responsive Release of Inorganic Polyphosphate from Platelet-inspired Synthetic Nanoparticles to Augment Hemostasis
Norman Luc / *Case Western Reserve University, USA*

Concurrent Symposium 2 (S2-8)

14:40~16:10 Room 306-B

Advanced hemocompatible coatings

Organizer Manfred Maitz / *Leibniz Institute of Polymer Research Dresden, Germany*

Chair Manfred Maitz / *Leibniz Institute of Polymer Research Dresden, Germany*

Mario Barbosa / *Universidade do Porto, Portugal*

Keynote Speaker
14:40 S2-8-1
Working at the interface of thromboinflammation and biomaterials: what we know and don't know quite yet
Maud Gorbet / *University of Waterloo, Canada*

Invited Speaker
15:05 S2-8-2
Platelet Membrane Coating on Macro-Scale Blood-Contacting Material Enables Multifunctional Biointerfacing
Rifang Luo / *Sichuan University, Chengdu, China*

15:20 S2-8-3
Improving hemocompatibility by suppression of the first steps of blood coagulation
Jenny Englert / *DWI - Leibniz Institute for Interactive Materials, Germany*

15:35 S2-8-4
Reimagining hemocompatible coatings: modulation of hemostasis by interactive polymer brushes
César Rodriguez-Emmenegger / *DWI - Leibniz-Institut für Interaktive Materialien, Germany*

Oral Presenter
15:50 S2-8-5
Functional coatings accelerate endothelialization on left atrial appendage occluder
Xingwang Wang / *Zhejiang University, China*

16:00 S2-8-6
The Impact of Different Cellulose Derivatives on the Anti-Adhesive Hydrogels
YIXIN LIU / *National Taipei University of Technology, Chinese Taipei*

Concurrent Symposium 2 (S2-9)

14:40~16:10 Room 314

Controlling degradation of bioresorbable materials to direct cell behavior

Organizer Whitney Stoppel / *University of Florida, USA*

Chair Whitney Stoppel / *University of Florida, USA*

Jonathan M. Grasman / *New Jersey Institute of Technology, USA*

Keynote Speaker
14:40 S2-9-1
Enzyme-sensitive peptide-polymer conjugates for cell-mediated scaffold degradation
Lesley Chow / *Lehigh University, USA*

Invited Speaker
15:05 S2-9-2
Controlling scaffold architecture and structural properties to enhance tissue regeneration
Jonathan M. Grasman / *New Jersey Institute of Technology, USA*

15:20 S2-9-3
Silk fibroin lyophilized sponge degradation and mechanics: connecting silk fibroin crystalline domains to biological activity
Whitney Stoppel / *University of Florida, USA*

Oral Presenter
15:35 S2-9-4
Subcutaneous Injection of Tetra-Branched Poly(ethylene glycol) in Mice: A Study on Diffusion, Biodistribution, and Molecular Weight Influence
Shohei Ishikawa / *School of Engineering, The University of Tokyo, Japan*

15:45 S2-9-5
3D printable alginate-gelatin hydrogels with variable viscoelastic properties as sole differentiation factor of induced pluripotent stem cells for tissue engineering
Lucas Lemarié / *LBTI - ICBMS - SEGULA Technologies, France*

15:55 S2-9-6
Biomaterial tools for studying the early phase of osteoblast differentiation and building a 3D *in vitro* bone model
Janne T. Koivisto / *Faculty of Medicine and Health Technology, Tampere University & Department of Laboratory Medicine, Karolinska Institutet, Stockholm, Finland*

Concurrent Symposium 2 (S2-10)

14:40~16:10 Room 321-A

Characterization of cell-scaffold interface in nanoscale for therapeutic applications

Organizer Jangho Kim / *Chonnam National University, Korea, Republic of*

Chair Jangho Kim / *Chonnam National University, Korea, Republic of*

Sunwoo Hoon / *Sunchon National University, Korea, Republic of*

Keynote Speaker
14:40 S2-10-1
Nanocellulose-based hybrid soft materials for biomedical engineering applications: design and assembly strategies
Jin-Woo Kim / *University of Arkansas, USA*

Invited Speaker
15:05 S2-10-2
Brain-on-a-Chip Technology for Modeling Human Brain Diseases
Hong Nam Kim / *KIST, Korea, Republic of*

15:20 S2-10-3
Enhancement of In Vitro Osteogenesis Using Alkaline Hydrolysis Modified 3D-Printed Poly(ε-Caprolactone)/ Hydroxyapatite Scaffolds
Kyung Je Jang / *Gyeongsang National University, Korea, Republic of*

Oral Presenter
15:35 S2-10-4
Material characterization and parameter identification of periodontal ligament considering tension-compression asymmetric moduli and nonlinear behavior
Shaoyang Bi / *Tianjin University, China*

15:45 S2-10-5
Hernia mesh with biomechanical and mesh–tissue interface dual compliance for scarless abdominal wall reconstruction
Chaojing Li / *Donghua University, China*

Concurrent Symposium 2 (S2-11)

14:40~16:10 Room 321-B

Biomaterials for Organoids

Organizer Qun Wang / *Iowa State University, USA*

Chair Qun Wang / *Iowa State University, USA*

Ying Mei / *Clemson University, USA*

Keynote Speaker
14:40 S2-11-1
Biomaterial toolkits for advanced organoid engineering
Seung-Woo Cho / *Yonsei University, Korea, Republic of*

Invited Speaker
15:05 S2-11-2
Engineering a simple and robust organoid on chip to recapitulate full NASH function
Hanry Yu / *National University of Singapore, Singapore*

15:20 S2-11-3
Human stomach micro-physiological system to recapitulate the dynamic mucosal defence mechanism
Tae-Eun Park / *UNIST, Korea, Republic of*

Oral Presenter
15:35 S2-11-4
Rational design of oral drugs targeting mucosa delivery with gut organoid platforms
Qun Wang / *Iowa State University, USA*

15:45 S2-11-5
Multiscale control of nanofiber-composite hydrogel for complex 3D cell culture
Chaenyung Cha / *Ulsan National Institute of Science and Technology, Korea, Republic of*

15:55 S2-11-6
In vitro 3D bone organoids based on demineralized bone paper
Jungwoo Lee / *University of Massachusetts-Amherst, USA*

Concurrent Symposium 2 (S2-12)

14:40~16:10 Room 320-A

Clinically relevant dental biomaterials

Organizer Jae-Sung Kwon / *Yonsei University College of Dentistry, Korea, Republic of*

Chair Jae-Sung Kwon / *Yonsei University College of Dentistry, Korea, Republic of*

James Tsoi / *Hong Kong University, Hong Kong SAR, China*

Keynote Speaker
14:40 S2-12-1
Titania Nanotube Applications in Dentistry: Innovations and Perspective
Seung Han Oh / *Wonkwang University, Korea, Republic of*

Invited Speaker
15:05 S2-12-2
Colourization of zirconia using photons
James Tsoi / *Hong Kong University, Hong Kong SAR, China*

15:20 S2-12-3
Developing symbiotic bio-interaction with dental materials for oral health improvement
Utkarsh Mangal / *Yonsei University College of Dentistry, Korea, Republic of*

Oral Presenter
15:35 S2-12-4
Urchin-like fluorohydroxyapatite coating on sulfonated PEEK implants with antimicrobial activity and osseointegration properties
Ning Huang / *College of Stomatology, Shanghai Jiao Tong University; Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, China, China*

15:45 S2-12-5
Particle release from dental implants and the potential of bioactive glass in implant dentistry
Siwei Li / *Visiting Specialist Services Ltd / Imperial College London, United Kingdom*

Concurrent Symposium 2 (S2-13)

14:40~16:10 Room 320-B

Emerging biomaterials: From bench to startup

Organizer Jinmyoung Joo / *Ulsan National Institute of Science and Technology, Korea, Republic of*

Chair Jinmyoung Joo / *Ulsan National Institute of Science and Technology, Korea, Republic of*

Keynote Speaker
14:40 S2-13-1
Translation of silicon-based nanoparticles for tissue-specific drug delivery
Michael J. Sailor / *University of California San Diego, USA*

Invited Speaker
15:05 S2-13-2
Soft Materials for Hard Problems in Healthcare: Hydrogels as Novel Medical Device
Hyunwoo Yuk / *SanaHeal, USA*

15:20 S2-13-3
Sustainable release of retinoic acid by porous silicon microparticles enhances the functional maturation of induced pluripotent stem cell-derived motor neurons
Alec Smith / *University of Washington, USA*

15:35 S2-13-4
Bridging Bench to Startup: Advancements in Emerging Biomaterials for Regenerative Medicine
Eun Je Jeon / *Cellartgen, Korea, Republic of*

Oral Presenter
15:50 S2-13-5
SymClot: synthetic platelets for improved hemorrhage control
Seema Nandi / *SelSym Biotech, Inc., USA*

16:00 S2-13-6
Confined migration drives stem cell epigenetics and differentiation
Xu Gao / *Department of Biomedical Enigneering, National University of Singapore, Singapore*

Concurrent Symposium 2 (S2-14)

14:40~16:10 Room 315

Biomineralization and biotemplating

Organizer Jae-Byum Chang / *Korea Advanced Institute of Science and Technology, Korea, Republic of*

Chair Jae-Byum Chang / *Korea Advanced Institute of Science and Technology, Korea, Republic of*

Keynote Speaker
14:40 S2-14-1
Osteocytic mechanisms of age-related bone fragility
Tamara N. Alliston / *Department of Orthopaedic Surgery, the University of California San Francisco, USA*

Invited Speaker
15:05 S2-14-2
Revolutionizing materials engineering and processing with microfluidic tools
Josep Puigmartí-Luis / *Department of Materials Science & Physical Chemistry, University of Barcelona, Spain*

Oral Presenter
15:20 S2-14-3
In-Situ TEM Studies of Biomineralization Withdrawal
Reza Shahbazian Yassar / *University of Illinois Chicago, USA*

15:30 S2-14-4
Mussel-inspired Polydopamine-coated Mesoporous Bioactive Glass: An Exploration of Potential Metal Ion Loading Platform and Biomineralization Molecular Dynamics Mechanism
Baiyan Sui / *Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, China*

15:40 S2-14-5
Metal-polyphenol complexes: unveiling photochemical routes to biomineralization
Jeonga Kim / *Korea Advanced Institute of Science and Technology, Korea, Republic of*

15:50 S2-14-6
Biomineralization of functional cellulose nanocrystal-based hydrogel platforms with bone-healing potential: role of the surface chemistry in hydroxyapatite formation
Jessica Borges Vilches / *Department of Bioproducts and Biosystems, School of Chemical Engineering, Aalto University, Finland, Finland*

16:00 S2-14-7
An advanced spheroid-based calcification model for small molecule drug screenings in the treatment of fibrodysplasia ossificans progressiva
Steven Vermeulen / *Maastricht University, Netherlands*

15:00~17:00

Affiliated Meeting 1

Room 505 AF1-4
Editorial Board Member Offline Meeting for the Journal (by invitation only)

Workshop 2 (W2-1)

16:00~19:00 Room 211

Biomaterials Science Excellence and Technology Translation

Organizer Bingyun Li / *West Virginia University School of Medicine, USA*

Chair Jian Yang / *Westlake University, China*

Kelvin Yeung / *The University of Hong Kong, Hong Kong SAR, China*

Speaker (35 min)
16:00 W2-1-1
William Wagner / *University of Pittsburgh, USA*

16:35 W2-1-2
Citrate biomaterials for implantable pro-regenerative medical devices
Guillermo Ameer / *Northwestern University, USA*

17:10 W2-1-3
Immuno-Materials: From Cancer, Infection, to Inflammatory Diseases
Xuesi Chen / *University of Chinese Academy of Sciences, China*

17:45 W2-1-4
Biomaterials beyond poly(ethylene glycol)
Shaoyi Jiang / *Cornell University, USA*

16:10~16:30

Coffee Break

Concurrent Symposium 3 (S3-1)

16:30~18:00 Room 325-AB

Symposium on Frontiers of Biomaterials Science and Engineering in Honor of Professor Xingdong Zhang

Organizer Hua Ai / *Chinese Society for Biomaterials, China*

Chair Yuliang Zhao / *National Center for Nanoscience and Technology, China*

Nicholas Peppas / *University of Texas at Austin, USA*

Keynote Speaker (30 min)
16:30 S3-1-1
3D printable biomaterials for tissue engineering
Antonios Mikos / *Rice University, USA*

Invited Speaker (15 min)
17:00 S3-1-2
Hydrogels for Orthopedic Repair: Preclinical Progress and Commercial Application
Arthur J. Coury / *Northeastern University, USA*

17:15 S3-1-3
Advancing Biomaterials: On the Shoulders of Giants
Serena Best / *University of Cambridge, United Kingdom*

17:30 S3-1-4
Tissue-inducing biomaterials: current status and future development
Kai Zhang / *Sichuan University, China*

Concurrent Symposium 3 (S3-2)

16:30~18:00 Room 325-CD

Volumetric tissue printing

Organizer Jinah Jang / *Pohang University of Science and Technology, Korea, Republic of*

Chair Khoon Lim / *University of Sydney, Australia*

Jinah Jang / *Pohang University of Science and Technology, Korea, Republic of*

Keynote Speaker
16:30 S3-2-1
Filamented Light (FLight) Biofabrication of Tendons and Muscle
Marcy Zenobi-Wong / *ETH Zurich, Switzerland*

Invited Speaker
16:55 S3-2-2
Volumetric bioprinting: from the first development to advanced imaging-guided and multi-technology biofabrication
Paulina Nunez Bernal / *University Medical Center Utrecht, Netherlands*

Oral Presenter
17:10 S3-2-3
Stable and Homogeneous SPION-infused Photo-Resins for 3D-Printing Magnetic Hydrogels
Ali Mohammed / *Imperial College London, United Kingdom*

17:20 S3-2-4
Melt electrowriting and its applications in biofabrication for the generation of synthetic tubular constructs with defined mechanical characteristics
Michael Bartolf-Kopp / *Universitätsklinikum Würzburg, Germany*

17:30 S3-2-5
Development of Efficient Photoinitiating Systems for 3D Printing
Pu Xiao / *Chinese Academy of Sciences, China*

17:40 S3-2-6
Visible Light-Induced 3D Co-axial Bioprinting of 3D Biomimetic Liver-like Tissue Module with Patterned Vascular Structures for Volumetric Tissue Reconstruction
Daekeun Kim / *Pohang University of Science and Technology, Korea, Republic of*

17:50 S3-2-7
Fibrillogenesis-inhibited collagen-based photoclick resins enable facile volumetric biofabrication of multi-cellular tissues
Parth Chansoria / *ETH Zurich, Switzerland*

Concurrent Symposium 3 (S3-3)

16:30~18:00 Room 324-A

Platform technology for theranostics

Organizer Yong Kyu Lee / *KNUT, Korea, Republic of*

Chair Youngwook Won / *University of North Texas, USA*

Hwan Kim / *KNUT, Korea, Republic of*

Keynote Speaker
16:30 S3-3-1
Protein-based cell engineering for targeted cancer therapy
Youngwook Won / *University of North Texas, USA*

Invited Speaker
16:55 S3-3-2
A theranostic approach to high tissue parenchymal accumulation of nanoparticles
Jayoung Kim / *University of North Texas Health Science Center, USA*

17:10 S3-3-3
Md. Nurunnabi / *School of Pharmacy at the University of Texas at El Paso, USA*

17:25 S3-3-4
Theranostic Applications of Polymersomes with Dual Agent Loading in Computed Tomography and Magnetic Resonance Imaging
Jessica Larsen / *Clemson University, USA*

17:40 S3-3-5
Nano-adaptor for Antibody Delivery
Jun Wang / *South University of Science and Technology, China*

Concurrent Symposium 3 (S3-4)

16:30~18:00 Room 324-B

Reproducing Reproductive Organs/Tissues via Tissue Engineering

Organizer Min Wang / *Department of Mechanical Engineering, The University of Hong Kong, Hong Kong SAR, China*

Chair Min Wang / *Department of Mechanical Engineering, The University of Hong Kong, Hong Kong SAR, China*

Bin Duan / *University of Nebraska Medical Center, University of Nebraska, USA*

Keynote Speaker
16:30 S3-4-1
Tissue Engineering: Current Perspectives in the Reproductive Field
James J. Yoo / *Wake Forest Institute for Regenerative Medicine, Wake Forest University School of Medicine, USA*

Invited Speaker
16:55 S3-4-2
Tissue engineering for difficult infertility cases
Seung-Yup Ku / *Seoul University, Korea, Republic of*

Oral Presenter
17:10 S3-4-3
Design and biosynthesis of recombinant humanized collagen toward application: strategies and practices
Hai Lin / *Sichuan University, China*

17:20 S3-4-4
Design of hydrogel scaffolds for stable and consistent in vitro complex human skin reconstruction
Kun Liang / *A*STAR Skin Research Labs, Singapore*

17:30 S3-4-5
Construction of multifunctional protein consisting of Elastin-like polypeptides for tissue engineering
Mutawakil Al Muqadasi / *Tokyo Institute of Technology, Japan*

17:40 S3-4-6
Culture systems matter: Comparing the longevity, regenerative capabilities, and secretome production of mesenchymal stem cells in different systems
Jacob Hodge / *University of Kansas Medical Center, USA*

17:50 S3-4-7
Enhancing male infertility treatment through tissue-engineered sperm Production
Rakesh Bhaskar / *Yeungnam University, Korea, Republic of*

Concurrent Symposium 3 (S3-5)

16:30~18:00 Room 323

Biomaterials for gene delivery applications

Organizer Sun Hwa Kim / *Korea Institute of Science and Technology, Korea, Republic of*

Chair Hyuk Jin Lee / *Ewha Womans University, Korea, Republic of*

Seokjoong Kim / *GenEdit, USA*

Keynote Speaker
16:30 S3-5-1
Development of Selective Organ Targeting (SORT) lipid nanoparticles (LNPs) for durable genome correction therapy of genetic lung disease
Daniel J. Siegwart / *UT Southwestern Medical Center, USA*

Invited Speaker
16:55 S3-5-2
Enabling genomic medicine with polymeric nanoparticle
Seokjoong Kim / *GenEdit, USA*

17:10 S3-5-3
Next-generation drug delivery system based on porous inorganic nanoparticle for advanced mRNA therapy and vaccines
Dal Hee Min / *Seoul National University, Korea, Republic of*

17:25 S3-5-4
Suprachoroidal injection of biodegradable nanoparticles enables efficient and durable ocular gene therapy
Jordan J. Green / *Johns Hopkins University School of Medicine, USA*

Oral Presenter
17:40 S3-5-5
Sustained Release of MAPK14-Targeting siRNA from Polyelectrolyte Complex Hydrogels Mitigates Bony Bar Formation in Growth Plate Injuries
Melissa Krebs / *Colorado School of Mines, USA*

17:50 S3-5-6
Comparison of rMSC stem cell seeded dual gene activated scaffold on wound healing of aged rats
Michael B. Keogh / *RCSI Bahrain, Bahrain*

Concurrent Symposium 3 (S3-6)

16:30~18:00 Room 322

Elastin-based biomaterials

Organizer Jose Carlos Rodríguez-Cabello / *University of Valladolid, Spain*

Chair Jose Carlos Rodríguez-Cabello / *University of Valladolid, Spain*

Giselle Yeo / *University of Sydney, Australia*

Keynote Speaker
16:30 S3-6-1
Tropoelastin-based biomaterials
Anthony Weiss / *University of Sydney, Australia*

Invited Speaker
16:55 S3-6-2
Giselle Yeo / *University of Sydney, Australia*

17:10 S3-6-3
Engineering innovative biomaterials by integrating elastin-like proteins with biological organization principles
Alvaro Mata / *University of Nottingham, United Kingdom*

Oral Presenter
17:25 S3-6-4
Keratin-mediated Mechanotransduction and its Application to Cell and Tissue Regeneration
HyeonJeong Kang / *KyungHee University, Korea, Republic of*

17:35 S3-6-5
Utilizing Recombinant Humanized Collagen Proteins in Advancing Regenerative Medicine
Yafang Chen / *Sichuan university, China*

17:45 S3-6-6
In-vitro laboratory models to study pathological calcification
Marta Cerruti / *McGill University, Canada,*

Concurrent Symposium 3 (S3-7)

16:30~18:00 Room 306-A

Plant and Polysaccharide-based biomaterials

Organizer Feng Jiang / *The University of British Columbia, Canada*

Chair Feng Jiang / *The University of British Columbia, Canada*

Lina Fu / *Huanghuai University, China*

Keynote Speaker
16:30 S3-7-1
Direct 3D biofabrication of bacterial nanocellulose via soft matter templating
Orlando Rojas / *The University of British Columbia, Canada*

Invited Speaker
16:55 S3-7-2
Cellulose nanofibrils-based ionic conductive gel as wearable sensors for physiological monitoring
Feng Jiang / *The University of British Columbia, Canada*

Oral Presenter
17:10 S3-7-3
Controllable construction and biomedical applications of functional natural polysaccharide hydrogels
Lina Fu / *Huanghuai University, China*

17:20 S3-7-4
Dynamic covalently crosslinked alginate hydrogels for biomedical applications
Yi-Cheun Yeh / *National Taiwan University, Chinese Taipei*

17:30 S3-7-5
Development of a novel plant-derived polysaccharide-based hydrogel for bone tissue engineering
Xinyu Li / *University of Glasgow, United Kingdom*

17:40 S3-7-6
Lubricant-infused cellulose-based biomaterials for biomedical applications
Maryam Badv / *University of Calgary, Canada*

Concurrent Symposium 3 (S3-8)

16:30~18:00 Room 306-B

Dynamic Hydrogels

Organizer Matthew Webber / *University of Notre Dame, USA*

Chair Matthew Webber / *University of Notre Dame, USA*

Patricia Dankers / *TU Eindhoven, Netherlands*

Sei Kwang Hahn / *POSTECH, Korea, Republic of*

Keynote Speaker
16:30 S3-8-1
Dynamic Hydrogel Biomaterials with Supramolecular Crosslinking
Matthew Webber / *University of Notre Dame, USA*

Invited Speaker
16:55 S3-8-2
Photocrosslinkable biopolymers for enhanced tissue adhesion and local drug delivery
Seung Yun Yang / *Pusan National University, Korea, Republic of*

17:10 S3-8-3
Engineering dynamic reciprocity through design of supramolecular polymer hydrogels
Patricia Dankers / *TU Eindhoven, Netherlands*

Oral Presenter
17:25 S3-8-4
Enzymatically Crosslinked Collagen as a Versatile Matrix for In Vitro and In Vivo Co-Engineering of Blood and Lymphatic Vasculature
Dominic Ruetsche / *ETH Zurich, Tissue Engineering + Biofabrication Laboratory Department of Health Sciences & Technology, Switzerland*

Concurrent Symposium 3 (S3-9)

16:30~18:00 Room 314

The Macrophage as a target in biomaterial-based tissue regeneration strategies

Organizer Jonathan Ian Dawson / *University of Southampton, United Kingdom*

Chair Yasuhiko Tabata / *Kyoto University, Japan*

Jonathan Ian Dawson / *University of Southampton, United Kingdom*

Keynote Speaker
16:30 S3-9-1
Macrophages as the gatekeepers of tissue repair and regeneration
Mikael Martino / *Monash University, Australia*

Invited Speaker
16:55 S3-9-2
Developing biomaterial technologies to modify macrophages polarization for tissue regeneration
Yasuhiko Tabata / *Kyoto University, Japan*

17:10 S3-9-3
The Role of Phagocytosis in Nanoclay Particle Induced Macrophage Polarisation
Yanghee Kim / *University of Southampton, United Kingdom*

Oral Presenter
17:25 S3-9-4
Neutrophil targeting platform reduces neutrophil extracellular traps for improved traumatic brain injury and stroke theranostics
Longguang Tang / *Zhejiang University, China*

17:35 S3-9-5
Mechanoregulation of MSC spheroid immunomodulation
Sabrina Mierswa / *Department of Orthopaedic Surgery, University of California Davis, USA*

17:45 S3-9-6
Influence of secreted signals from macrophages on osteocyte maturation
Paula Giraldo / *University of Gothenburg, Sweden*

Concurrent Symposium 3 (S3-10)

16:30~18:00 Room 321-A

Bio-fabrication/bioprinting and characterization for biomedical application

Organizer Suk Ho Bhang / *School of Chemical Engineering / Sungkyunkwan University, Korea, Republic of*

Chair Suk Ho Bhang / *School of Chemical Engineering / Sungkyunkwan University, Korea, Republic of*

Hyun-Ji Park / *Department of Applied Chemistry and Biological Engineering / Ajou University, Korea, Republic of*

Keynote Speaker
16:30 S3-10-1
Engineering scaffold-free tissue constructs via modular assembly, cell-only bioprinting and 4D strategies
Eben Alsberg / *Departments of Biomedical Engineering, Mechanical & Industrial Engineering, Pharmacology and Regenerative Medicine, and Orthopaedic Surgery / University of Illinois Chicago, USA*

Invited Speaker
16:55 S3-10-2
Repurposing Antiviral Peptides for Tumor-Derived Exosome Inhibition and Cancer Immunotherapy Enhancement: A Membrane Biophysics Perspective
Jackman Joshua A. / *School of Chemical Engineering, Sungkyunkwan University, USA*

17:10 S3-10-3
Multilevel neurium-mimetic individualized graft via a sugar painting-inspired additive manufacturing for peripheral nerve injuries
Wei Sun / *State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University, China*

Oral Presenter
17:25 S3-10-4
Printing and full characterization of metamaterials using shape memory alloys for a new generation of smart personalized implants
Monica Echeverry Rendon / *IMDEA Materials, Spain*

17:35 S3-10-5
3D Printed Ti6Al4V Porous Implant Surface Functionalization by Ultraviolet LED
Chuan Yin / *Beijing Surface Medical Technology Co., Ltd., Beijing, China*

17:45 S3-10-6
Towards a Cystic Fibrosis-Biofilm model: Acetylation of alginate and its influence on physicochemical properties
Stephan Schandl / *3D-Printing and Biofabrication, TU Wien, Getreidemarkt 9, 1060 Vienna, Austria*

Concurrent Symposium 3 (S3-11)

16:30~18:00 Room 321-B

In vitro microphysiological systems for studying tumor microenvironment

Organizer Joo Hun Kang / *UNIST, Korea, Republic of*

Chair Joo Hun Kang / *UNIST, Korea, Republic of*

Junsang Doh / *Seoul National University, Korea, Republic of*

Keynote Speaker
16:30 S3-11-1
Microengineered Biomimicry of Human Physiological Systems
Dan Dongeun Huh / *University of Pennsylvania, USA*

Invited Speaker
16:55 S3-11-2
Engineering patient-derived microphysiological systems to reconstruct the tumor microenvironments
Jihoon Ko / *Gachon University, Korea, Republic of*

17:10 S3-11-3
Reverse Engineering of Tumor Microenvironment Using Microfluidics and 3D Printing
Sungsu Park / *Sungkyunkwan University, Korea, Republic of*

Oral Presenter
17:25 S3-11-4
Intratumoral mapping of local 3D tissue viscoelasticity at cellular clength scales during breast cancer progression
Christopher Moraes / *McGill University, Canada*

17:35 S3-11-5
Comparative analysis of 3D-printed β-TCP and freeze-dried alginate-bioactive glass scaffolds as bone-like microenvironments for osteosarcoma in vitro modelling
Ksenia Menshikh / *Center for Translational Research on Autoimmune and Allergic Diseases, Università del Piemonte Orientale, Italy*

Concurrent Symposium 3 (S3-12)

16:30~18:00 Room 320-A

Biomaterials Interventions in Aging Around the World

Organizer Liisa Kuhn / *University of Connecticut Health Center, USA*

Chair Liisa Kuhn / *University of Connecticut Health Center, USA*

Keynote Speaker
16:30 S3-12-1
Biomaterial interventions in aging of the musculoskeletal system
Stuart Goodman / *Stanford University, USA*

Invited Speaker
16:55 S3-12-2
From 3D bioengineered Models to Therapeutic Solutions: Senescence in Musculoskeletal Disease
Okhee Jeon / *Korea University, Korea, Republic of*

Oral Presenter
17:10 S3-12-3
Local delivery of ruxolitinib modulates aged macrophage phenotype transitions and promotes aged bone healing
Liisa Kuhn / *University of Connecticut Health Center, USA*

17:20 S3-12-4
Microvesicles-hydrogel breaks the cycle of cellular senescence by improving mitochondrial function
Senrui Liu / *The first affiliation of Chongqing medical university, China*

17:30 S3-12-5
Optimization towards the tipping point of senescence induction: a method for a passageable, induced-senescent osteoprogenitor cell line for biomaterials research
Travis Wallace / *University of Connecticut Health Center (UConn Health), USA*

17:40 S3-12-6
Cell-Free Osteoarthritis Treatment with Sustained-Release of Chondrocyte-Targeting Exosomes from Umbilical Cord-Derived Mesenchymal Stem Cells to rejuvenate ageing chondrocytes
Hongfu Cao / *National Engineering Research Center for Biomaterials, Sichuan university, China*

Concurrent Symposium 3 (S3-13)

16:30~18:00 Room 320-B

Drop-based microfluidic technologies

Organizer Hyomin Lee / *POSTECH, Korea, Republic of*

Chair To Ngai / *Chinese University of Hong Kong, Hong Kong SAR, China*

Siyoung Choi / *KAIST, Korea, Republic of*

Keynote Speaker
16:30 S3-13-1
Oil-eating bacteria lay down to stay fit
Andrew S. Utada / *University of Tsukuba, Japan*

Invited Speaker
16:55 S3-13-2
Designing hydrogel-shelled microcapsules through multiple -emulsion templating
Shin-Hyun Kim / *KAIST, Korea, Republic of*

17:10 S3-13-3
All-aqueuous interfacial materials
Ho Cheung Anderson SHUM / *Advanced Biomedical Instrumentation Centre, Hong Kong SAR, China*

Oral Presenter
17:25 S3-13-4
3D microfluidic bioprinting of foams for hierarchical fabrication of skeletal substitutes
Federico Serpe / *La Sapienza University of Rome, Italy*

17:35 S3-13-5
Sustainable synthesis of calcium phosphate microparticles in 3D-printed droplet micro-reactors for precise morphological control
Konstantinos Tsachouridis / *the University of Manchester, United Kingdom*

Concurrent Symposium 3 (S3-14)

16:30~18:00 Room 315

DNA or RNA Nanotechnologies

Organizer Maartje Bastings / *EPFL, Switzerland*

Co-organizer Minseok Kwak / *Pukyong National University, Korea, Republic of*

Young Hoon Roh / *Yonsei University, Korea, Republic of*

Chair Maartje Bastings / *EPFL, Switzerland*

Minseok Kwak / *Pukyong National University, Korea, Republic of*

Young Hoon Roh / *Yonsei University, Korea, Republic of*

Keynote Speaker 16:30 S3-14-1
Multi-micron crisscross structures grown from DNA-origami slats
William M. Shih / *Harvard University, USA*

Invited Speaker 16:55 S3-14-2
Ultrasound-responsive and autonomously acting nucleic acid materials
Andreas Herrmann / *RWTH Aachen University, Germany*

17:10 S3-14-3
Rapid Nucleic Acid Detection using CLASSIC
Youngeun Kim / *Seoul National University, Korea, Republic of*

Oral Presenter 17:25 S3-14-4
DNA origami for photonics and phononics
Seungwoo Lee / *Korea University, Korea, Republic of*

17:35 S3-14-5
Toward real-time analysis and design of DNA origami nanostructures using AI
Do-Nyun Kim / *Seoul National University, Korea, Republic of*

18:00~19:00 Grand Ballroom, 3F

Poster Session 2

May 28 (Tue)

07:00~08:30 Lobby, 3F

Registration

Oral Session 1 (OS1-1)

08:30~09:30 Room 325-AB

Hydrogel 1

Chair Probal Basu / *University of Oslo, Norway*

Manon Minsart / *Ghent University, Belgium*

Oral Presenter 1 08:30 OS1-1-1
Multi-functional supramolecular hydrogel based on custom-made polyurethanes for fighting inflammation by combined delivery of natural phenols and nitric oxide
Giulia Crivello / *Politecnico di Torino, Italy*

Oral Presenter 2 08:40 OS1-1-2
Multipurpose peptide-based engineered materials for cornea, skin, and heart repairde
Alex Ross / *University of Ottawa, Canada*

Oral Presenter 3 08:50 OS1-1-3
Lactic acid biofunctionalized microcrystalline cellulose reinforced chitosan membranes for guided tissue regeneration
Probal Basu / *University of Oslo, Norway*

Oral Presenter 4 09:00 OS1-1-4
Stiffness mechanosensation of airway smooth muscle cells in obstructive airway diseases
Yong Hwee (Joe) Tan / *School of Human Sciences The University of Western Australia Perth, Western Australia 6009, Australia*

Oral Presenter 5 09:10 OS1-1-5
Blue biomaterials: exploring the potential of alginate and collagen extracted from aquatic waste products to serve the biomedical field
Manon Minsart / *Ghent University, Belgium*

Oral Presenter 5 09:20 OS1-1-6
Tumor microenvironment targeting for glioblastoma multiforme treatment via hybrid cell membrane coating supramolecular micelles
Xiaobei Huang / *Chinese Academy of Sciences, China*

Oral Session 1 (OS1-2)

08:30~09:30 Room 325-CD

Diverse fabrication technology 1

Chair Aura - Cătălina Mocanu / *National University of Science and Technology POLITEHNICA Bucharest, Romania*

Nehar Celikkin / *Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, Poland, Poland*

Oral Presenter 1 08:30 OS1-2-1
PRINTABLE COMPOSITE FILAMENTS WITH ANTIMICROBIAL EFFECT FOR THE MANUFACTURING OF IMPLANTABLE DEVICES
Aura - Cătălina Mocanu / *National University of Science and Technology POLITEHNICA Bucharest, Romania*

Oral Presenter 2 08:40 OS1-2-2
A Stretchable, Strain-limiting, and Mechanically Stable Bio-inspired Microfiber for Wearable Electronics
Adeela Hanif / *Pohang University of Science and Technology, Korea, Republic of*

Oral Presenter 3 08:50 OS1-2-3
Rotary wet-spinning biofabrication of skeletal muscle constructs and electro-mechanical stimulation towards the in vitro production of functional myo-substitutes
Nehar Celikkin / *Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, Poland, Poland*

Oral Presenter 4 09:00 OS1-2-4
Mechanical stimulation in melt electrowritten scaffolds: influencing cellular response
Piotr Zielinski / *University of Groningen, Netherlands*

Oral Presenter 5 09:10 OS1-2-5
A low-cost and open-source bio-multimaterial multinozzle 3D printer (BioMM3D)
Jonathan D. Weiss / *Bioengineering, Stanford University, USA*

Oral Session 1 (OS1-3)

08:30~09:30 Room 324-A

Biomaterials for treatment of bone-related diseases and Bone regeneration

Chair Mahdiyeh Nouri-Goushki / *Delft University of Technology (TUDelft), Netherlands*

Fang Yang / *Radboud University Medical Center, Netherlands*

Oral Presenter 1 08:30 OS1-3-1
Designing Osteoimmunomodulatory Surfaces: Insights from 3D-Printed Submicron Patterns
Mahdiyeh Nouri-Goushki / *Delft University of Technology (TUDelft), Netherlands*

Oral Presenter 2 08:40 OS1-3-2
Enhancing radiation therapy efficacy in hypoxic osteosarcoma with a calcium-based nano-scintillator
Yu-Chi Wang / *Department of Biomedical Engineering, National Yang Ming Chiao Tung University, Chinese Taipei*

Oral Presenter 3 08:50 OS1-3-3
Copper-doped mesoporous bioactive glass nanoparticles for treating infected bone defects
Fang Yang / *Radboud University Medical Center, Netherlands*

Oral Presenter 4 09:00 OS1-3-4
Grannular hydrogel scaffolds modulate MSC microenvironment and extracellular vescile secretion to influence bone regenration in vivo
Georgios Tseropoulos / *University of Colorado Boulder, USA*

Oral Presenter 5 09:10 OS1-3-5
A reduced graphene oxide substituted hydroxyapatite: ameliorating nerve trauma and fragility fractures with electroactive cryogels in diabetic rats
Ekta Srivastava / *Indian Institute of Technology, Kanpur, India, India*

Oral Session 1 (OS1-4)

08:30~09:30 Room 324-B

Biomaterials scaffolds 1

Chair Hwan Kim / *Korea National University of Transportation, Korea, Republic of*

Oral Presenter 1 08:30 OS1-4-1
Nanofibrillar hydrogels as 3D matrix microenvironments for stem cell culture and chondrogenic ECM deposition
Christopher Chong / *Department of Biochemistry & Chemistry, La Trobe Institute for Molecular Science, La Trobe University, Australia*

Oral Presenter 2 08:40 OS1-4-2
Pharmacokinetic/dynamic performance of nerve regenerative polymersomes in vivo
Kayleigh Trumbull / *Clemson University, USA*

Oral Presenter 3 08:50 OS1-4-3
A shape-memory methacrylated cartilage-derived extracellular matrix scaffold for cartilage tissue engineering
TaeHo Lee / *Sungkyunkwan University, Korea, Republic of*

Oral Presenter 4 09:00 OS1-4-4
Engineering Granular High Throughput Confining 3D Cellular Microenvironments
Shinny Sunny / *National University of Singapore, Singapore*

Oral Presenter 5 09:10 OS1-4-5
Deciphering mechanoregulation of YAP in 3D glycated extracellular matrix
Insung Yong / *Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of*

Oral Session 1 (OS1-5)

08:30~09:30 Room 323

Biomaterials for medical applications 1

Chair Song Liu / *University of Manitoba, Canada*

Laurabelle Gautier / *CEA-Leti, France*

Oral Presenter 1 08:30 OS1-5-1
A Theranostic Wound Dressing and four strategies for boosting the detection of Wound Bacterial Infection
Song Liu / *University of Manitoba, Canada*

Oral Presenter 3 08:50 OS1-5-3
Self-healing elastic conducting nanocomposite fiber for strain-durable peripheral neural interface
Soojung An / *Department of Electrical and Computer Engineering, Sungkyunkwan University, Suwon 16419, Korea, Korea, Republic of*

Oral Presenter 4 09:00 OS1-5-4
Main challenges of continuous monitoring of biomarkers in ISF through hydrogel micro-needles array
Laurabelle Gautier / *CEA-Leti, France*

Oral Presenter 5 09:10 OS1-5-5
ROS-responsive nanoceria composite carriers loaded with PTH1-34 for healing of osteoporotic bone defects
BAOYU TAN / *the university of hong kong, Hong Kong SAR, China*

Oral Session 1 (OS1-6)

08:30~09:30 Room 322

Natural biomaterials for regenerative medicine

Chair Rita Sobreiro-Almeida / *Department of Chemistry, CICECO – Aveiro Institute of Materials, University of Aveiro, Portugal*

Jose Carlos Rodríguez-Cabello / *University of Valladolid, Spain*

Oral Presenter 1 08:30 OS1-6-1
Recombinamers: Pioneering the Quest for Exceptional Multi-Biofunctional Capabilities with Increased Feasibility
Jose Carlos Rodríguez-Cabello / *University of Valladolid, Spain*

Oral Presenter 2 08:40 OS1-6-2
Using blood components to engineer highly bioactive and customized implantable biomaterials
Rita Sobreiro-Almeida / *Department of Chemistry, CICECO - Aveiro Institute of Materials, University of Aveiro, Portugal*

Oral Presenter 3 08:50 OS1-6-3
A Matrigel-Fibrinogen-Thrombin composite hydrogel for fabrication of bio-syncretic muscle actuator
Tao Jiang / *National University of Defense Technology, China*

Oral Presenter 4 09:00 OS1-6-4
Tailoring Tumor-recognizable Hyaluronic Acid-Lipid Conjugates to Enhance Anticancer Efficacies of Surface-engineered Natural Killer Cells
Chae Eun Lee / *Dongguk university, Korea, Republic of*

Oral Presenter 5 09:10 OS1-6-5
Granular microgel bioink based on photocrosslinkable alginate for 3D cell-laden scaffold construction
Sangmin Lee / *Pohang University of Science and Technology (POSTECH), Korea, Republic of*

Oral Session 1 (OS1-7)

08:30~09:30 Room 306-A

Bioceramics 1

Chair Kunio Ishikawa / *Kyushu University, Japan*

Susana Olhero / *University of Aveiro, Portugal*

Oral Presenter 1 08:30 OS1-7-1
Fabrication and histological evaluation of sponge type-carbonate apatite artifical bone
Kunio Ishikawa / *Kyushu University, Japan*

Oral Presenter 2 08:40 OS1-7-2
3D-printed luminescent bioactive glass scaffold for bone bioengineering
Amel Houaoui / *CY Cergy Paris Université, France*

Oral Presenter 3 08:50 OS1-7-3
Design of advanced calcium phosphate bioceramics using one-dimensional calcium phosphate biomaterials as building blocks
Yonggang Zhang / *Dalian University of Technology, China*

Oral Presenter 4 09:00 OS1-7-4
Engineered cell-laden armor unit-mimicking bioceramic granules for bone regeneration
Zhengyi Xing / *National Engineering Research Center for Biomaterials, Sichuan University, China*

Oral Presenter 5 09:10 OS1-7-5
Self-setting 3D printed calcium phosphate-based bone substitutes with enhanced bioactivity
Susana Olhero / *University of Aveiro, Portugal*

Oral Session 1 (OS1-8)

08:30~09:30 Room 306-B

Technology for Additive Manufacturing 1 (Non-polymeric)

Chair: Joanna Żur-Pińska / *Silesian University of Technology, Poland*

Chair: Annett Gebert / *Leibniz IFW Dresden, Germany*

Oral Presenter 1 — 08:30 — OS1-8-1
Additively manufactured biodegradable porous zinc and chondroitin sulfate hydrogel bilyaer scaffold for osteochondral defect repair
Yageng Li / *University of Science and Technology Beijing, China*

Oral Presenter 2 — 08:40 — OS1-8-2
Additive manufacturing of beta-type Ti-Nb alloy for patient-specific bone implant designs
Annett Gebert / *Leibniz IFW Dresden, Germany*

Oral Presenter 3 — 08:50 — OS1-8-3
The role of silane coupling agents on the properties of novel hybrid α-TCP-based biomaterials obtained by robocasting
Piotr Pańtak / *Faculty of Materials Science and Ceramics, AGH University of Kraków, Poland*

Oral Presenter 4 — 09:00 — OS1-8-4
Metal-complexed pH-tunable inks with dynamic network for biomedical applications
Joanna Żur-Pińska / *Silesian University of Technology, Poland*

Oral Presenter 5 — 09:10 — OS1-8-5
Bioactive magnesium-based whitlockite ceramic as bone cement additives for enhancing osseointegration and bone regeneration
Tae Hoon Kang / *SMG-SNU Boramae Medical Center, Korea, Republic of*

Oral Session 1 (OS1-9)

08:30~09:30 Room 314

Biomaterials tissue regeneration 1

Chair: ASHOK KUMAR / *Department of Biological Sciences and Bioengineering, Indian Institute of Technology Kanpur, Kanpur-208016, UP, India*

Chair: Yi-Chen Li / *Feng Chia University, Chinese Taipei*

Oral Presenter 1 — 08:30 — OS1-9-1
Tissue Nanotransfection improves grafting of natural biomaterials in a mouse model of peripheral nerve injury
Ana Salazar Puerta / *The Ohio State University, USA*

Oral Presenter 2 — 08:40 — OS1-9-2
GnT-V generates insulin producing cells derived from gland acinar cells
TAI-HORNG YOUNG / *National Taiwan University, Chinese Taipei*

Oral Presenter 3 — 08:50 — OS1-9-3
Water-triggered tissue adhesive hydrogel for rapid wound closure and promotion of lung regeneration
Qingfeng Bai / *Shanghai Pulmonary Hospital, China*

Oral Presenter 4 — 09:00 — OS1-9-4
Functional Biomaterials for Tissue Regeneration and Inter-Tissue Cross-talk Analysis
ASHOK KUMAR / *Department of Biological Sciences and Bioengineering, Indian Institute of Technology Kanpur, Kanpur-208016, UP, India*

Oral Session 1 (OS1-10)

08:30~09:30 Room 321-A

Recent Advances in biomaterial Science and Engineering 1

Chair: Jeong-Kee Yoon / *Chung-Ang University, Korea, Republic of*

Chair: Sally McArthur / *Deakin University, Australia*

Oral Presenter 1 — 08:30 — OS1-10-1
3D cell culture systems for characterising biomaterials
Sally McArthur / *Deakin University, Australia*

Oral Presenter 2 — 08:40 — OS1-10-2
Controlled release system for antibacterial and anticoagulant blood contacting materials Withdrawal
Zhiwen Zheng / *South China University of Technology, China*

Oral Presenter 3 — 08:50 — OS1-10-3
A plasma-based, rapid, stable, and reagent-free method to create bioinstructive surfaces inside porous scaffold
Behnam Akhavan / *University of Newcastle, Australia*

Oral Presenter 4 — 09:00 — OS1-10-4
Fiber-reinforced porous extracellular matrix mimicking scaffolds for tissue engineering and regenerative medicine
Mengnan Dennis / *North Carolina State University, USA*

Oral Presenter 5 — 09:10 — OS1-10-5
Hydrogel encapsulating glucose oxidase, horseradish peroxidase and tannic acid for excessive glucose and ROS modulation for diabetic wound management
Quang Anh Tu / *Ajou Univiersity, Korea, Republic of*

Oral Session 1 (OS1-11)

08:30~09:30 Room 321-B

Biomaterials for organoids and organ models 1

Chair: Gianluca Ciardelli / *Politecnico di Torino, Italy*

Chair: Rachit Agarwal / *Department of Bioengineering, Indian Institute of Science, India*

Oral Presenter 1 — 08:30 — OS1-11-1
New frontiers in biomaterials design and processing towards more reliable in vitro organ models
Gianluca Ciardelli / *Politecnico di Torino, Italy*

Oral Presenter 2 — 08:40 — OS1-11-2
Lung-mimicking hydrogel culture systems to study host-pathogen interaction and drug efficacy in tuberculosis
Rachit Agarwal / *Department of Bioengineering, Indian Institute of Science, India*

Oral Presenter 3 — 08:50 — OS1-11-3
Photo-responsive hydrogel system to study mechano-transduction during intestinal tissue homeostasis
Kaustav Bera / *Department of Chemical and Biological Engineering, University of Colorado Boulder, Boulder, CO 80309, USA. BioFrontiers Institute, University of Colorado Boulder, Boulder, CO 80309, USA., USA*

Oral Presenter 4 — 09:00 — OS1-11-4
3D Printed Anisotrpic and Porous Dense Collagen Hydrogels to Model Skeletal Muscle
Christophe Helary / *Sorbonne University, France*

Oral Presenter 5 — 09:10 — OS1-11-5
3D-printed airway model: a tool for investigating SARS-CoV-2 infection and antiviral drug efficacy
Yunji Lee / *Pohang university of science and technology (POSTECH), Korea, Republic of*

Oral Session 1 (OS1-12)

08:30~09:30 Room 320-A

Dental & Craniofacial biomaterials 1

Chair William Arthur Lackington / *Biointerfaces Lab, Empa, Switzerland*

Oral Presenter 1 08:30 OS1-12-1
Development of composite collagen plugs incorporating anti-inflammatory and osteoinductive nanoparticles for treatment of periodontitis: study on in vivo beagle model
Hyewoo Jeong / *Hanyang University, Korea, Republic of*

Oral Presenter 2 08:40 OS1-12-2
Electrospinning of recombinet human-like collagen incorporated PCL membranes using benign solvents for periodontal tissue regeneration
Minyi Ren / *Nanjing Medical University, China*

Oral Presenter 3 08:50 OS1-12-3
Laser-textured titanium implants: Enhanced integration in hard and soft tissue using designer surface topographies
William Arthur Lackington / *Shanghai Pulmonary Hospital, China, Biointerfaces Lab, Empa, Switzerland*

Oral Presenter 4 09:00 OS1-12-4
Inactivated probiotics on tannic acid nanocoating - enhancing bioactivity for improved bone and soft tissue integration
Agnes Rogala / *Department of Biomaterials, Faculty of Dentistry, University of Oslo, Norway*

Oral Session 1 (OS1-13)

08:30~09:30 Room 320-B

Designer biomaterials using microfluidics

Chair Amirpasha Moetazedian / *University of Hull, United Kingdom*

Daniele Vigolo / *The University of Sydney, Australia*

Oral Presenter 1 08:30 OS1-13-1
A microfluidic chip for membrane mechanoporation: In vitro cellular delivery of impermeable biofunctional molecules
Aishik Chakraborty / *The University of Western Ontario, Canada*

Oral Presenter 2 08:40 OS1-13-2
M3D-BIO: Microfluidics-Enabled 3D Printing for Biofabrication
Amirpasha Moetazedian / *University of Huddersfield, United Kingdom*

Oral Presenter 3 08:50 OS1-13-3
High-throughput quantification of nascent pericellular matrix in single-cell and multi-cell microgels using Extracellular Protein Identification Cytometry (EPIC)
Marieke Meteling / *Leijten Lab, Department of Developmental BioEngineering, University of Twente, Netherlands*

Oral Presenter 4 09:00 OS1-13-4
Measuring viscoelastic properties of tumoroids using Capillary Micromechanics
Kalpit Bakal / *Eindhoven University of Technology, Netherlands*

Oral Presenter 5 09:10 OS1-13-5
Recapitulating deep vein thrombosis with a vein-on-chip mode
Daniele Vigolo / *The University of Sydney, Australia*

Oral Session 1 (OS1-14)

08:30~09:30 Room 315

Biosensors and Bioelectronics

Chair Seong-Eun Kim / *Korea Electronics Technology Insitute (KETI), Korea, Republic of*

Yoon Sung Nam / *KAIST, Korea, Republic of*

Oral Presenter 1 08:30 OS1-14-1
Zwitterionic hydrogel-encapsulated microneedle-based glucose biosensor for enhancing reliability and anti-biofouling properties
Shicheng Zhou / *The University of Tokyo, Japan*

Oral Presenter 2 08:40 OS1-14-2
On-skin printable, adhesive, self-doped conductive granular hydrogels for human-machine interface
Sumin Kim / *Sungkyunkwan University, Korea, Republic of*

Oral Presenter 3 08:50 OS1-14-3
3-D Multifunctional neural probe for optogenetic spatiotemporal control
Zih Huei Chen / *Department of Materials Science and Engineering, National Yang-Ming Chiao Tung University, Chinese Taipei*

Oral Presenter 4 09:00 OS1-14-4
Photopatternable solid-state organic electrochemical transistors for advanced biosensing
Charles-Théophile Coen / *Eindhoven University of Technology, Netherlands*

Oral Session 1 (OS1-15)

08:30~09:30 Room 211

CRISPR and Gene editing, therapy technology

Chair Kyuri Lee / *College of Pharmacy, Gyeongsang National University, Korea, Republic of*

Kevin McHugh / *Rice University, USA*

Oral Presenter 1 08:30 OS1-15-1
A modular microparticle platform enabling customizable cancer therapeutic delivery
Kevin McHugh / *Rice University, USA*

Oral Presenter 2 08:40 OS1-15-2
Tissue-specific delivery of circular RNAs for prolonged protein expression in gene therapy
Qinghao Zhang / *Shanghai Institute of Nutrition and Health, Chinese Academy of Sciences, China*

Oral Presenter 3 08:50 OS1-15-3
IN-SITU MITOCHONDRIAL GENE THERAPY FOR THE TREATMENT OF LEBER'S HEREDITARY OPTIC NEUROPATHY
Yi Wang / *China Pharmaceutical University, China*

Oral Presenter 4 09:00 OS1-15-4
Lipid Nanoparticles for Overcoming Biological Barriers to mRNA Delivery
Michael Mitchell / *University of Pennsylvania, USA*

Oral Presenter 5 09:10 OS1-15-5
Pyroptosis-triggered mRNA lipid nanoparticles enhances cancer immunotherapy in immunologically cold tumor models
Withdrawal
Xiaoyang Xu / *New Jersey Institute of Technology, USA*

Concurrent Symposium 4 (S4-1)

09:30~11:00 Room 325-AB

Biofabrication strategies to engineer complex tissues

Organizer Lesley Chow / *Lehigh University, USA*

Chair Lesley Chow / *Lehigh University, USA*

Liliang Ouyang / *Tsinghua University, China*

Keynote Speaker
09:30 S4-1-1
Light-based Biofabrication of Mammary Tissue
Marcy Zenobi-Wong / *ETH Zurich, Switzerland*

Invited Speaker
09:55 S4-1-2
3D bioprinting of transplantable tracheas
Yong He / *Zhejiang University, China*

10:10 S4-1-3
Recreating tendon structure and biomechanical environment using magnetic 3D Bioprinting
Manuela Gomes / *3B's Research Group, University of Minho, Portugal*

Oral Presenter
10:25 S4-1-4
3D Bioprinting of Perfusable Networks Using an Interfacial Diffusant Strategy
Betty Cai / *Stanford University, USA*

10:35 S4-1-5
3D-Printing of Scaffolds with Surface Micropatterns For Oriented Tissue Regeneration
Yonghui Ding / *Worcester Polytechnic Institute, USA*

Concurrent Symposium 4 (S4-2)

09:30~11:00 Room 325-CD

Bio-hybrid tissue printing

Organizer Hyun-Wook Kang / *Ulsan National Institute of Science and Technology, Korea, Republic of*

Chair Aleksandr Ovsianikov / *Technische Universität Wien, Austria*

Hyun-Wook Kang / *Ulsan National Institute of Science and Technology, Korea, Republic of*

Keynote Speaker
09:30 S4-2-1
Scaffold-free Bio-3D Printing for Solid organ fabrication
Koichi Nakayama / *Saga University, Japan*

Invited Speaker
09:55 S4-2-2
3D Bioprinting Strategies for Building Human Body Parts
Sang Jin Lee / *Wake Forest School of Medicine, USA*

10:10 S4-2-3
Scaffolded Spheroids - A New Strategy for Cartilage and Bone Tissue Engineering
Aleksandr Ovsianikov / *Technische Universität Wien, Austria*

10:25 S4-2-4
Non-adjacent wireless electrotherapy for tissue repair by a bioresorbable fully soft triboelectric nanogenerator
Zhengwei You / *Donghua University, China*

Oral Presenter
10:40 S4-2-5
3D bioprinting hydrogel of biomimetic ECM for engineered brain-like constructs fabrication
Yu Song / *Tsinghua University, China*

10:50 S4-2-6
Voxel-by-voxel multi-material 3D printing for creating biomimetic interfaces
Mohammad J. Mirzaali / *TU Delft, Netherlands*

Concurrent Symposium 4 (S4-3)

09:30~11:00 Room 324-A

Engineering of biomaterials for drug delivery

Organizer Yoon Shin Park / *Chungbuk National University, Korea, Republic of*

Chair Yongzhuo Huang / *Shanghai Institute of Materia Medica, China*

Jinhwan Kim / *UC Davis, USA*

Keynote Speaker
09:30 S4-3-1
Engineering the nanomaterials for the image-guided drug delivery and controlled release
Stanislav Emelianov / *Georgia Tech, USA*

Invited Speaker
09:55 S4-3-2
Allan E. David / *Auburn University, USA*

10:10 S4-3-3
Targeting tumor metabolism using advanced drug delivery systems for treatment enhancement
Yongzhuo Huang / *Shanghai Institute of Materia Medica, China*

10:25 S4-3-4
Natural-Based Liposomes for Versatile Drug Delivery Applications
Dai Hai Nguyễn / *Institute of Chemical Technology - Vietnam Academy of Science and Technology, Vietnam*

Concurrent Symposium 4 (S4-4)

09:30~11:00 Room 324-B

Learning from Successful Failures in Tissue Engineering & Regenerative Medicine

Organizer Sing Yian Chew / *Nanyang Technological University, Singapore*

Chair Sing Yian Chew / *Nanyang Technological University, Singapore*

Catherine Le Visage / *Inserm; University of Nantes, France*

Keynote Speaker
09:30 S4-4-1
That's not right, it is not even wrong
Michael Sefton / *University of Toronto, Canada*

09:55 S4-4-2
Neglecting complexity when extrapolating from cell culture to the human
Viola Vogel / *ETH Zurich, Switzerland*

10:20 S4-4-3
Exploring correlations between in vitro cellular responses and in vivo results
Catherine Le Visage / *University of Nantes; Inserm, France, France*

Oral Presenter
10:45 S4-4-4
Improving stem cell differentiation potency using simulated microgravity
Jeremy Teo / *New York University Abu Dhabi, United Arab Emirates*

Concurrent Symposium 4 (S4-5)

09:30~11:00 Room 323

Challenge to Microbiology Using Nanomaterials

Organizer Hu-Lin Jiang / *China Pharmaceutical University, China*

Chair Chong-Su Cho / *Seoul National University, Korea, Republic of*

Hu-Lin Jiang / *China Pharmaceutical University, China*

Keynote Speaker
09:30 S4-5-1
Challenge to Microorganism by Polysaccharide Nanoparticles as an Intracellular Inducer
Chong-Su Cho / *Seoul National University, Korea, Republic of*

Invited Speaker
09:55 S4-5-2
Tissue Fibrosis Therapy
Hu-Lin Jiang / *China Pharmaceutical University, China*

Oral Presenter
10:10 S4-5-3
Microbe-material biointerface design of polyelectrolyte nanocomplexes to treat bacterial infections
Joel Finbloom / *University of British Columbia, Canada*

10:20 S4-5-4
Combatting antimicrobial resistance with selenium nanoparticle-antimicrobial peptide conjugates
Shaveen Sasanka Bogahapitiya Gamage / *University of Melbourne, Australia*

10:30 S4-5-5
Au/Pt bimetallic nanoparticles-decorated nonwoven mat promotes wound healing:
meng-yi bai / *National Taiwan University of Science and Technology, Chinese Taipei*

Concurrent Symposium 4 (S4-6)

09:30~11:00 Room 322

Bioactive Materials and Structures for Tissue Interface Engineering

Organizer Eben Alsberg / *University of Illinois Chicago, USA*

Chair Sangamesh Kumbar / *University of Connecticut Health, USA*

Melissa Krebs / *Colorado School of Mines, USA*

Keynote Speaker
09:30 S4-6-1
Osteochondral Interface Engineering: The role of Biomaterials
Syam Nukavarapu / *University of Connecticut, USA*

Invited Speaker
09:55 S4-6-2
Unconventional Biomaterials for Tissue Engineering and Regenerative Medicine
Gulden Camci-Unal / *UMASS Lowell, USA*

10:10 S4-6-3
Engineered NK-Cancer Immune Synapses via Tumor Recognizable Lipid Conjugates for Augmented Cancer Immunotherapy
Kyobum Kim / *Dongguk University, Korea, Republic of*

Oral Presenter
10:25 S4-6-4
Innovative biphasic 3D scaffold based on bioglass or bone inorganic matrix and biodegradable polymer honeycomb membrane for bone tissue engineering
Emmanuel PAUTHE / *ERRMECe, Equipe de Recherche sur les Relations Matrice Extracellulaire-Cellules, International House of Research, CY Cergy-Paris Université, 95000 Neuville sur Oise, France*

10:35 S4-6-5
SILICATE and Silicate-Based Bioactive Glasses as Potential Therapies for Medication-Related Osteonecrosis of the Jaw (MRONJ)
Maria Florez-Martin / *Division of Surgery and Interventional Sciences, University College London, London, United Kingdom*

10:45 S4-6-6
Biological performance in mini pigs of 3D Ti6Al4V–beta Calcium phosphate composite scaffolds
Jiaping Li / *Kuros Biosciences, Netherlands*

Concurrent Symposium 4 (S4-7)

09:30~11:00 Room 306-A

Synthetic protein-complexing hydrogel materials to direct cell fate

Organizer Uwe Freudenberg / *Leibniz Institute of Polymer Research Dresden, Germany*

Chair Carsten Werner / *Leibniz Institute of Polymer Research Dresden, Germany*

Uwe Freudenberg / *Leibniz Institute of Polymer Research Dresden, Germany*

Keynote Speaker
09:30 S4-7-1
Chitosan scaffolds containing engineered short forms of perlecan promote angiogenesis via the potentiation of growth factors
Megan Lord / *University of New South Wales, Australia*

Invited Speaker
09:55 S4-7-2
A cell-instructive hydrogel library with variable sulf(on)ation pattern to tune protein affinity
Passant Atallah / *Leibniz-Institut f. Polymerforschung Dresden e.V., Germany*

Oral Presenter
10:10 S4-7-3
Hybrid supramolecular-covalent gelatin bioresins as dynamic matrices for enhanced cell migration and self-assembly in light-based volumetric bioprinted constructs
Marc Falandt / *Dept. of Clinical Sciences, Faculty of Veterinary Medicine, Utrecht University, Netherlands*

10:20 S4-7-4
Hyaluronan topography impacts epithelial to mesenchymal transition
Katherine Ballard / *South Dakota School of Mines and Technology, USA*

10:30 S4-7-5
Inflammation-triggered hydrogels to remodel pathological microenvironment for lessening cerebral ischemia injury
Wen Zhang / *sichuan university, Chinas*

10:40 S4-7-6
Dynamic protein-based G-quadruplex-derived supramolecular hydrogels as stable bioinks for healthcare
Vera Sousa / *CICECO – Aveiro Institute of Materials, Department of Chemistry, University of Aveiro, Portugal*

10:50 S4-7-7
Spatiotemporal Regulation of Injectable Heterogeneous Silk Gel Scaffolds for Accelerating Guided Vertebral Repair
Tianji Wang / *Xijing Hospital, China*

Concurrent Symposium 4 (S4-8)

09:30~11:00 Room 306-B

Advanced sustainable hydrogels for smart wearable technologies

Organizer Kindness Uyanga / *City University of Hong Kong, Hong Kong SAR, China*

Chair Kindness Uyanga / *City University of Hong Kong, Hong Kong SAR, China*

Hong Zhao / *School of Materials Science and Hydrogen Energy, Foshan University, China*

Keynote Speaker
09:30 S4-8-1
Advanced sustainable hydrogels for smart wearable technologies
Walid A. Daoud / *Department of Mechanical Engineering, City University of Hong Kong, Hong Kong SAR, China*

Invited Speaker
09:55 S4-8-2
Conductive Hydrogels for Biomechanical Energy Harvesting and Wearable Sensing
Lingyun Wang / *School of Microelectronics, Shandong University, China*

10:10 S4-8-3
Self-healing, Stretchable, and Tissue-adhesive Materials for Stable Bioelectronic
Donghee Son / *Sungkyunkwan University, Korea, Republic of*

Oral Presenter
10:25 S4-8-4
Carboxymethyl cellulose-chitosan composite hydrogel: Modelling and experimental study of the effect of composition on microstructure and swelling response
Kindness Uyanga / *City University of Hong Kong, Hong Kong SAR, China*

10:35 S4-8-5
Multifunctional bioengineered active 3D hydrogels
Carolina Vargas Estevez / *Biomaterials, Biomechanics and Tissue Engineering Group, Department of Materials Science and Engineering, Universitat Politècnica de Catalunya-BarcelonaTech (UPC), 08019, Barcelona, Spain., Spain*

10:45 S4-8-6
Temperature responsive polymer, poly(N-acryloyl-piperidine-carboxamide) and its application to the preparation of smart hydrogel
Yoshikatsu AKIYAMA / *Tokyo Women's Medical University, Japan*

Concurrent Symposium 4 (S4-9)

09:30~11:00 Room 314

Hydrogels for fibrocartilage regeneration

Organizer Joana Silva-Correia / *3B's Research Group, University of Minho, Portugal*

Chair Joana Silva-Correia / *3B's Research Group, University of Minho, Portugal*

Changyou Gao / *Zhejiang University, China*

Keynote Speaker
09:30 S4-9-1
Natural-based biomaterials in the biofabrication of fibrocartilage tissues and personalised implants
J. Miguel Oliveira / *3B's Research Group - University of Minho, Portugal*

Invited Speaker
09:55 S4-9-2
Hydrogels with enhanced oxygen control, tissue integration and immunomodulatory properties for biofabrication of cartilage implants
Gabriella Lindberg / *University of Oregon, USA*

10:10 S4-9-3
Structure/property/processing relationships in hydrogel based materials
Maurice N. Collins / *School of Engineering, University of Limerick, Ireland*

Oral Presenter
10:25 S4-9-4
Broad spectrum antimicrobial hyperbranched poly-L-lysine and its applications in medicinal devices
Changyou Gao / *Zhejiang University, China*

10:35 S4-9-5
Encapsulation of mesenchymal stem cells in alginate does not impair their immunoregulatory potential
Cécile Boyer / *Nantes Université, Oniris, CHU Nantes, INSERM, Regenerative Medicine and Skeleton, RMeS, UMR 1229, F-44000 Nantes, France*

10:45 S4-9-6
Delivery of Biological Molecules from Hydrogels for Enhanced Cartilage Tissue Engineering
Lilith M. Caballero Aguilar / *Melbourne University, Australia*

Concurrent Symposium 4 (S4-10)

09:30~11:00 Room 321-A

Materials and characterizations for cardiovascular applications

Organizer Hyun-Ji Park / *Ajou University, Korea, Republic of*

Chair Hyun-Ji Park / *Ajou University, Korea, Republic of*

Suk Ho Bhang / *Sungkyunkwan University, Korea, Republic of*

Keynote Speaker
09:30 S4-10-1
3D printed biomaterials for cardiac repair
Michael Davis / *Emory University and Georgia Institute of Technology, USA*

Invited Speaker
09:55 S4-10-2
Underwater acoustic levitation technology that forms ultra-fast 3D cell aggregates and improves the therapeutic efficacy of the aggregates
Suk Ho Bhang / *Sungkyunkwan University, Korea, Republic of*

10:10 S4-10-3
Multi-scale models reveal low-penetrance hypertrophic cardiomyopathy MYH7 G256E mutation drives hypercontractility and early metabolic remodeling
Soah Lee / *Sungkyunkwan University, Korea, Republic of*

Oral Presenter
10:25 S4-10-4
Recombinant spider silk for cardiovascular applications: biodegradable, drug eluting, and endothelial cell-specific materials
Daniel Heath / *The University of Melbourne, Australia*

10:35 S4-10-5
Reinforced composite hydrogels with Wharton`s jelly stromal cells for vascular patches
Simon Prazak / *Institute of Physiology of the Czech Academy of Sciences, Czech Republic*

10:45 S4-10-6
Bioactive coatings for enhancing the corrosion resistance and biocompatibility of magnesium alloys for cardiovascular stents
Changjiang Pan / *Changzhou University, China*

Concurrent Symposium 4 (S4-11)

09:30~11:00 Room 321-B

Microphysiological systems for modeling pathologies of central nervous system

Organizer Hong Nam Kim / *Korea Institute of Science and Technology, Korea, Republic of*

Chair Hong Nam Kim / *Korea Institute of Science and Technology, Korea, Republic of*

Seokyoung Bang / *Dongguk University, Korea, Republic of*

Keynote Speaker
09:30 S4-11-1
Advancing Stem Cell Therapies and Neuroinflammation Research Using Nanotechnology-Enabled Biosensing
Ki Bum Lee / *Rutgers University, USA*

Invited Speaker
09:55 S4-11-2
Refining Cultivation Techniques for Human Neural Systems with Tailored Extracellular Matrix and Microfluidic Integration
Yoonhee Jin / *Yonsei University College of Medicine, Korea, Republic of*

10:10 S4-11-3
Human spinal cord organoids exhibiting neural tube morphogenesis for a quantifiable drug screening system of neural tube defects
Ju-Hyun Lee / *Korea Institute of Science and Technology, Korea, Republic of*

Oral Presenter
10:25 S4-11-4
A 3D *in vitro* cortical tissue model For Studying effects of ionizing radiation on human neuronal network function
Chiara E Ghezzi / *University of Massachusetts Lowell, USA*

10:35 S4-11-5
Acoustic Stimulation in BBB-on-a-Chip: Advancing Blood-Brain Barrier Research
Melanie Stamp / *University of Melbourne, Australia*

Concurrent Symposium 4 (S4-12)

09:30~11:00 Room 320-A

Biomaterials for cardiovascular disease models and therapeutics

Organizer Ho-Wook Jun / *University of Alabama at Birmingham, USA*

Chair Ho-Wook Jun / *University of Alabama at Birmingham, USA*

Hun-Jun Park / *The Catholic University of Korea, Seoul St. Mary Hospital, Korea, Republic of*

Keynote Speaker
09:30 S4-12-1
Investigating heart development and disease using cardiac organoids
Do-Sun Lim / *Korea University, Anam Hospital, Korea, Republic of*

Invited Speaker
09:55 S4-12-2
***Pro-healing* Nanomatrix Coated Stent Analysis in an In Vitro Vascular Double-Layer System and in a Rabbit Model**
Ho-Wook Jun / *University of Alabama at Birmingham, USA*

10:10 S4-12-3
Therapeutic potential of 3D cardiac spheroids derived from human pluripotent stem cells for cardiac regeneration
Hun-Jun Park / *The Catholic University of Korea, Seoul St. Mary Hospital, Korea, Republic of*

10:25 S4-12-4
Bioengineering human vascular networks for therapeutic applications
Juan Melero-Martin / *Boston Children's Hospital, USA*

Oral Presenter
10:40 S4-12-5
Preclinical Evaluation of Cell-Assembled Extracellular Matrix Sheets for Surgical Fallot's Tetralogy Repair
Fabien Kawecki / *University of Bordeaux, Inserm BioTis U 1026, France*

10:50 S4-12-6
Development and characterization of a geometrically-tunable blood shunt for pediatric heart reconstruction
Akari Seiner / *Drexel University, USA*

Concurrent Symposium 4 (S4-13)

09:30~11:00 Room 320-B

Nano- and microencapsulation technologies

Organizer Jinwoong Kim / *Sungkyunkwan university/School of Chemical Engineering, Korea, Republic of*

Chair Ho Cheung Anderson SHUM / *Advanced Biomedical Instrumentation Centre, Hong Kong SAR, China*

Shin-Hyun Kim / *KAIST, Korea, Republic of*

Keynote Speaker
09:30 S4-13-1
Stimuli-responsive smart microcapsules for controlled release
Liang-Yin Chu / *Sichuan University, China*

Invited Speaker
09:55 S4-13-2
Formation of Controllable Complex Emulsions: From Functional Particles to Encapsulation
Chang-Soo Lee / *Chungnam National University, Korea, Republic of*

10:10 S4-13-3
Light-Driven Spatiotemporal Pickering Emulsion Droplet Manipulation Enabled by Plasmonic Hybrid Microgels
To Ngai / *Chinese University of Hong Kong, Hong Kong SAR, China*

Oral Presenter
10:25 S4-13-4
Direct visualization of phase transformation between lamellae and bicontinuous cubic phase within microspheres
Wenpeng Shan / *Shanghai Institute of Ceramics, Chinese Academy of Sciences, China*

10:35 S4-13-5
Development of novel biomacromolecule microcapsules based on designed synthetic coacervates
Akihiro Kishimura / *Faculty of Engineering, Kyushu University, Japan*

10:45 S4-13-6
Redox-responsive disulfide polymer synthesized by the oxidation polymerization of a dithiol trehalose derivative for drug delivery applications
Naozumi Teramoto / *Chiba Institute of Technology, Japan*

Concurrent Symposium 4 (S4-14)

09:30~11:00 Room 315

Nucleic acid nanotechnology-based therapeutics and diagnostics

Organizer Maartje Bastings / *EPFL, Switzerland*

Co-organizer Young Hoon Roh / *Yonsei University, Korea, Republic of*

Minseok Kwak / *Pukyong National University, Korea, Republic of*

Chair Young Hoon Roh / *Yonsei University, Korea, Republic of*

Maartje Bastings / *EPFL, Switzerland*

Minseok Kwak / *Pukyong National University, Korea, Republic of*

Keynote Speaker
09:30 S4-14-1
DNA-based Materials and Their Real-World Applications
Dan Luo / *Cornell University, USA*

Invited Speaker
09:55 S4-14-2
The impact of ligand spatial distribution on therapeutic outcomes using DNA origami: CpG spacing for cancer vaccine
Ju Hee Ryu / *KIST, Korea, Republic of*

10:10 S4-14-3
Intelligent Wearable Skins and Soft Probing Contractile Forces of Cardiac Organoids
Wenlong Cheng / *University of Sydney, Australia*

10:25 S4-14-4
Reconfigurable multi-component assemblies built from DNA origami voxels
Shelley Wickham / *The University of Sydney, Australia*

Oral Presenter
10:40 S4-14-5
(Super-) Selective biomaterials? A balancing act of rigidity and geometry at the nanoscale
Maartje Bastings / *EPFL, Switzerland*

10:50 S4-14-6
Plasmon-enhanced FRET between i-motif DNA encapsulated Silver Nanoclusters and Fluorescein amidites visualizes the redox state of live cells
Seong Wook Yang / *Yonsei University, Korea, Republic of*

11:00~11:20
Coffee Break

11:20~12:10 Convention Hall, 5F

Plenary Lecture 2

Chairs Anthony Weiss / *University of Sydney, Australia*

John Fisher / *University of Maryland, USA*

Plenary Speaker
11:20 PL2
Regeneration on chips and chips for regeneration: using microtechnology to advance the field of biomaterials-driven regenerative medicine
Pamela Habibovic / *Maastricht University, Netherlands*

12:10~13:40
Lunch

12:10~13:40
Affiliated Meeting 2

Room 505 AF2-1
JBMR A Editorial Board Meeting (by invitation only)

Room 504 AF2-2
Open Meeting of Chinese Society for Biomaterials

Lunch & Luncheon Seminar 1 (LS1-1)

12:20~13:30 Room 325-AB

Meet editors related to biomaterials

Organizer Hyuk Sang Yoo / *Kangwon National University, Korea, Republic of*

Chair Hyuk Sang Yoo / *Kangwon National University, Korea, Republic of*

Katja Schenke-Layland / *Eberhard Karls University Tubingen, Germany*

Speaker (8 min)
12:20 LS1-1-1
Kam W. Leong / *Columbia University, USA*

12:28 LS1-1-2
Katja Schenke-Layland / *Eberhard Karls University Tubingen, Germany*

12:36 LS1-1-3
Fan Yang / *Stanford University School of Medicine, USA*

12:44 LS1-1-4
Byeongmoon Jeong / *Ewha Womans University, Korea, Republic of*

12:52 LS1-1-5
Michaela Muehlberg / *Royal Society of Chemstry (RSC), United Kingdom*

Panel Discussion (30 min) 13:00 -

Lunch & Luncheon Seminar 1 (LS1-2)

12:20~13:10 Room 325-CD

Company Seminar (DENTIS / Dalim Tissen)

Speaker
12:20 LS1-2-1
Overview of Compact bone grafting and absorptive membranes
Inhae Shin / *Human Materials R&D Team, Korea, Republic of*

12:45 LS1-2-2
Hemostatic efficacy and safety of CollaStat in a spinal surgery
In Bo Han / *CHA Univ. School of Medicine, Korea, Republic of*

Lunch & Luncheon Seminar 1 (LS1-3)

12:20~13:20 Room 324-A

Women in Biomaterials Science

Organizer Seung-Woo Cho / *Yonsei University, Korea, Republic of*

Chair Shelly Sakiyama-Elbert / *University of Washington, USA*

Yoonhee Jin / *Yonsei University, Korea, Republic of*

Speaker
12:20 LS1-3-1
Strength in Diversity: A BioEngineering Journey
Hala Zreiqat / *University of Sydney, Australia*

12:35 LS1-3-2
Past, Present, and Future States of Korean Woman Scientists in Korean Biomaterials Research Society
Sung Yun Yang / *Chungnam National University, Korea, Republic of*

12:50 LS1-3-3
A fascinating journey in Biomaterials for Tissue Engineering
Maria Chatzinikolaidou / *Foundation for Research and Technology Hellas (FORTH) Institute of Electronic Structure and Laser 100, Greece*

Panel Discussion (15 min) 13:05 -

Lunch & Luncheon Seminar 1 (LS1-4)

12:20~13:20 Room 323

Young Scientist Forum (YSF) I: Successful career development

Organizer Seung-Woo Cho / *Yonsei University, Korea, Republic of*

Chair James Moon / *University of Michigan, Ann Arbor, USA*

Sing Yian Chew / *Nanyang Technological University, Singapore*

Speaker
12:20 LS1-4-1
My Faculty Odyssey: A Polymer Love Story
Elizabeth Cosgriff Hernandez / *University of Texas at Austin, USA*

12:35 LS1-4-2
High and Low Tides in Science: navigating through the sea with serendipity in a daring adventure
Lorenzo Moroni / *Maastricht University, Netherlands*

12:50 LS1-4-3
Building a meaningful peer-support network for greater success
Khoon Lim / *University of Sydney, Australia*

Panel Discussion (15 min) 13:05 -

Lunch & Luncheon Seminar 1 (LS1-5)

12:20~13:10 Room 322

Company Seminar (MAVERICK / Desktop Health™)

Speaker
12:20 LS1-5-1
Telocollagen additives for Regenerative Medicine seen through a Dental Device Lens
Terance Hart / *Maverick Biosciences, United Kingdom*

12:45 LS1-5-2
Designing patterns for tubular scaffolds using the 3D-Bioplotter's PrintRoll system
Carlos Carvalho / *Desktop Health™, Germany*

Lunch & Luncheon Seminar 1 (LS1-6)

12:20~13:30 Room 306-A

FBSE WBC - Fellows Debate

Organizer Rui Reis / *3B's Research Group, University of Minho, Portugal*

Chair Rui Reis / *3B's Research Group, University of Minho, Portugal*

Intro-duction Rui Reis / *3B's Research Group, University of Minho, Portugal*

Keynote Speaker 12:30 LS1-6-1
Milica Radisic / *University of Toronto, Canada*

Invited Speaker 12:40 LS1-6-2
Changyou Gao / *Zhejiang University, China*

12:50 LS1-6-3
Laura Poole-Warren / *The University of New South Wales, Australia*

13:00 LS1-6-4
Bikramjit Basu / *Indian Institute of Science, Bangalore, India*

Panel Discussion (15 min) 13:10 -

13:40~15:10

Affiliated Meeting 2

Room 505 AF2-3
SFB President's Advisory Committee (by invitation only)

Concurrent Symposium 5 (S5-1)

13:40~15:10 Room 325-AB

Roles of interfacial water states on cells/proteins/materials interactions and Biomaterials design

Organizer Masaru Tanaka / *Kyushu University, Japan*

Chair Masaru Tanaka / *Kyushu University, Japan*

Takuya Matsumoto / *Okayama University, Japan*

Keynote Speaker 13:40 S5-1-1
State of water in biofilms
Liraz Chai / *Institute of Chemistry, The Hebrew University of Jerusalem, Israel*

Invited Speaker
14:05 S5-1-2
Unraveling the Role of Intermediate Water in the Biocompatibility of Elastin-like Polypeptides
Seung-Wuk Lee / *University of California, Berkeley, USA*

14:20 S5-1-3
Engineered viscoelasticity in stem cell microenvironments
Manuel Salmeron-Sanchez / *University of Glasgow, United Kingdom*

14:35 S5-1-4
Design of cell adhesive/non-adhesive synthetic polymers based on the intermediate water concept
Masaru Tanaka / *Kyushu University, Japan*

Oral Presenter
14:50 S5-1-5
Surface coatings on biodegradable magnesium alloys for orthopedic applications
IULIAN ANTONIAC / *University Politehnica of Bucharest, Romania*

15:00 S5-1-6
Implications of bioactive glass surface modification on protein adsorption.
Virginia Alessandra Gobbo / *Tampere University, Finland*

Concurrent Symposium 5 (S5-2)

13:40~15:10 Room 325-CD

Converged Technologies towards Tissue Biofabrication

Organizer Y. Shrike Zhang / *Harvard Medical School, USA*

Chair Y. Shrike Zhang / *Harvard Medical School, USA*

Jinah Jang / *Pohang University of Science and Technology, Korea, Republic of*

Keynote Speaker 13:40 S5-2-1
Biointerface fiber technology from electrospinning to in situ fibre printing
Yan Yan Shery Huang / *University of Cambridge, United Kingdom*

Invited Speaker
14:05 S5-2-2
Enabling bioinks with tunable mechanical and topological cues for 3D cell culture and vascularization
Liliang Ouyang / *Tsinghua University, China*

14:20 S5-2-3
Convergence of Biofabrication Approaches for the Generation of Small Diameter Vascular Tissue Models
Tomasz Jungst / *University of Würzburg, Germany*

Oral Presenter
14:35 S5-2-4
Advanced materials and biofabrication technologies to design in vitro central nervous system models
Chiara Tonda-Turo / *Department of Mechanical and Aerospace Engineering - Politecnico di Torino, Italy and Inter-University Centre for the Promotion of the 3Rs Principles in Teaching & Research, Pisa, Italy, Italy*

14:35 S5-2-2
Mechanical Behavior of 3D Printed Continuous Carbon Fiber Reinforced PEKK Composites for Trauma Plate Applications
Steven Kurtz / *Drexel University, USA*

Concurrent Symposium 5 (S5-3)

13:40~15:10 Room 324-A

Biomaterial-assisted gene therapy to treat musculoskeletal disorders

Organizer Nicholas Dunne / *Dublin City University, Ireland*

Chair Nicholas Dunne / *Dublin City University, Ireland*

Ahmed Elkashif / *Queen's University Belfast, United Kingdom*

Keynote Speaker
13:40 S5-3-1
Peptide-microRNA nanoparticles delivered via a thermoresponsive hydrogel for enhanced bone regeneration
Helen McCarthy / *Queen's University Belfast, United Kingdom*

Invited Speaker
14:05 S5-3-2
Nanoparticle-mediated non-viral gene editing for in utero treatment of Duchenne muscular dystrophy
Aijun Wang / *University of California, Davis, USA*

Oral Presenter
14:20 S5-3-3
Delivery of microRNA loaded nanoparticles via a 3D printed PEG-chitosan-PCL wound dressing
Ahmed Elkashif / *Queen's University Belfast, United Kingdom*

14:30 S5-3-4
Urinary Extracellular Vesicles as Therapy in Genetic Kidney Disease
Eunji Chung / *University of Southern California, USA*

14:40 S5-3-5
Plasmid DNA Mono-Ion Complexes with Mono-cationic PEGs for Muscular Gene Delivery
Shoichiro Asayama / *Tokyo Metropolitan University, Japan*

14:50 S5-3-6
Targeting ROS-induced osteoblast senescence and RANKL production by Prussian blue nanozyme based gene editing platform to reverse osteoporosis
Huihui Wang / *Yangzhou University, China*

15:00 S5-3-7
Bone-targeted nanoparticle-mediated osteoimmunomodulation for enhanced fracture healing
Danielle Benoit / *University of Oregon, USA*

Concurrent Symposium 5 (S5-4)

13:40~15:10 Room 324-B

Musculoskeletal tissue engineering

Organizer Hyuk-Soo Han / *Seoul National University College of Medicine, Korea, Republic of*

Chair Hyuk-Soo Han / *Seoul National University College of Medicine, Korea, Republic of*

Su Chin Heo / *University of Pennsylvania, USA*

Keynote Speaker
13:40 S5-4-1
Tailored Decellularized Extracellular Matrix-based Hydrogel Systems for Zone-Specific Meniscus Repair
Su Chin Heo / *University of Pennsylvania, USA*

Invited Speaker
14:05 S5-4-2
***In vivo* Validation of a Continuous Gradient Porous Scaffold for Osteochondral Defect Repair in a Rabbit Model**
Riccardo Gottardi / *Children's Hospital of Philadelphia/University of Pennsylvania, USA*

14:20 S5-4-3
Guiding cartilage repair microenvironments to prevent contraction and fibrosis
Jay Patel / *Emory University, USA*

Oral Presenter
14:35 S5-4-4
Tribological properties of bare and gel-infiltrated fibrous materials
Elisa Bissacco / *Institute for Biomechanics, Department of Health Sciences and Technology, ETH Zurich, Switzerland*

14:45 S5-4-5
Selective mineralization of nanofibers for enthesis repair
Gabrielle Hamner / *The Pennsylvania State University, USA*

Concurrent Symposium 5 (S5-5)

13:40~15:10 Room 323

Biomaterials in regeneration applications and drug delivery

Organizer Hyuk Sang Yoo / *Kangwon National University, Korea, Republic of*

Chair Hyuk Sang Yoo / *Kangwon National University, Korea, Republic of*

Yu Han Lee / *Harvard University, USA*

Keynote Speaker
13:40 S5-5-1
Noninvasive Gut-to-Brain Oral Delivery Systems
Hsing Wen Sung / *National Tsing Hua University, Chinese Taipei*

Invited Speaker
14:05 S5-5-2
Yu Han Lee / *Harvard University, USA*

14:20 S5-5-3
Cell Membrane-cloaked Scaffolds for Biomedical Applications
Hye Sung Kim / *Dankook University, Korea, Republic of*

Oral Presenter
14:35 S5-5-4
Surface-cellular interaction and protein adsorption on polymer coatings for implantable medical device application
Bruna Garms / *Materials Sciences and Engineering, Monash University, Australia*

14:45 S5-5-5
Hybrid collagen-based biomaterials for tissue Regeneration applications
Yujiang Fan / *Sichuan University, China*

Concurrent Symposium 5 (S5-6)

13:40~15:10 Room 322

Directing cell fate & tissue regeneration by extracellular matrix signalling

Organizer Catherine Le Visage / *Nantes University, France*

Chair Catherine Le Visage / *Nantes University, France*

Evelyn Yim / *University of Waterloo, Canada*

Keynote Speaker
13:40 S5-6-1
Directing cell fate & tissue regeneration by biomimetic scaffolds
Sing Yian Chew / *Nanyang Technological University, Singapore*

Invited Speaker
14:05 S5-6-2
Applications of Transplantable and Biodegradable Nanoarchitecture Scaffolds for Tissue Engineering
Hee Seok Yang / *Dankook University, Korea, Republic of*

14:20 S5-6-3
Overcoming Challenges in Islet Encapsulation for Bioartificial Pancreas Applications
Kisuk Yang / *Incheon National University, Korea, Republic of*

Oral Presenter
14:35 S5-6-4
Tissue Tuning with Liminal Spaces and Signal Density: Reimagining the signalling landscape via Self Assembled Regenerative Hydrogels
Richard Williams / *School of Medicine, Deakin University, Australia*

14:45 S5-6-5
Tissue-engineered highly biomimetic and anisotropic vascularized cardiac patch
Feng Zhao / *Texas A&M University, USA*

14:55 S5-6-6
High-throughput screening of physicochemical material properties to prevent biomaterial-associated fibrosis of implants
Lisa Tromp / *University Medical Center Groningen, the Netherlands, Netherlands*

Concurrent Symposium 5 (S5-7)

13:40~15:10 Room 306-A

Supramolecular Nanomaterials

Organizer Bret Ulery / *University of Missouri, USA*

Co-organizer Eunji Chung / *University of Southern California, USA*

Adrianne Rosales / *University of Texas at Austin, USA*

Mark Tibbit / *ETH Zurich, Switzerland*

Chair Bret Ulery / *University of Missouri, USA*

Eunji Chung / *University of Southern California, USA*

Keynote Speaker 13:40 S5-7-1
Designing bioinspired materials to heal the body and detect diseases earlier
Molly Stevens / *Imperial College London, United Kingdom*

Invited Speaker 14:05 S5-7-2
Hydrogels as cell culture platforms to determine sex chromosome regulation of myofibroblast phenotypes
Brian Aguado / *University of California San Diego, USA*

14:20 S5-7-3
Supramolecular Biomaterials for Localized Biotherapeutic Delivery
Greg Hudalla / *University of Florida, USA*

Oral Presenter 14:35 S5-7-4
Hydrogel for aptamer selection in a single step
Yong Wang / *Penn State, USA*

Concurrent Symposium 5 (S5-8)

13:40~15:10 Room 306-B

Programming dynamic materials for engineering functional tissues

Organizer Roxanne Kieltyka / *Leiden University, Netherlands*

Chair Khoon Lim / *University of Sydney, Australia*

Matt Baker / *Maastricht University, Netherlands*

Keynote Speaker 13:40 S5-8-1
Encoding Interactions and Printability into Biomaterials - It's Time to get Hairy and Open the Window!
Justin Cooper-White / *The University of Queensland, Australia*

Invited Speaker 14:05 S5-8-2
Exploration of photo-responsive biodegradable shape-memory polymers in the biomedical realm
Sandra Van Vlierberghe / *Ghent University, Belgium*

Oral Presenter 14:20 S5-8-3
Advancing corrosion control in biodegradable magnesium implants through dual-layer calcium phosphate coatings for enhanced bone remodelling
Tina Sadat Hashemi / *Centre for Medical Engineering Research, School of Mechanical and Manufacturing Engineering, Dublin City University, Dublin, Ireland, Ireland*

14:30 S5-8-4
Emulating physical dynamicity of arterial blood vessels and neighbouring tissue interaction
Cécile Bosmans / *Leijten Laboratory, Department of Developmental BioEngineering, University of Twente, Enschede, Netherlands*

14:40 S5-8-5
Spinal disc repair with tunable ultrasound-triggered in situ hydrogel formation
Veerle A. Brans / *University of Oxford, United Kingdom*

14:50 S5-8-6
Hydrogel loaded 3D printed bone graft for reconstruction of the segmental bone defect
Anupama Devi V. K. / *Centre for Biomaterials, Cellular and Molecular Theranostics, Vellore Institute of Technology, Vellore, India*

15:00 S5-8-7
Macrophage reprogramming modulated by piezoelectric hydrogels for enhancing bone regeneration
Xin Liu / *Shanghai Jiaotong University School of Medicine, China*

Concurrent Symposium 5 (S5-9)

13:40~15:10 Room 314

Advanced biofabrication techniques for musculoskeletal tissue engineering

Organizer Junmin Lee / *POSTECH, Korea, Republic of*

Chair Junmin Lee / *POSTECH, Korea, Republic of*

Jeroen Leijten / *University of Twente, Netherlands*

Keynote Speaker 13:40 S5-9-1
Designing multiscale spheroid fusion platforms for musculoskeletal regenerative medicine and disease modelling
Tim Woodfield / *University of Otago, New Zealand*

Invited Speaker 14:05 S5-9-2
Multi-tissue type cell condensation for vascularized osteochondral tissue regeneration via individual cell bioprinting
Oju Jeon / *University of Illinois Chicago, USA*

14:20 S5-9-3
Designer micro/nano-crumpled MXene multilayer coatings accelerate osteogenesis and regulate macrophage polarization
Jouha Min / *University of Michigan Ann Arbor, USA*

Oral Presenter 14:35 S5-9-4
Exploring Chondrogenic Pathways: Unlocking SOX9 Regulation in Mesenchymal Stem Cells within Hydrogel Bioscaffolds for Cartilage In-Situ Tissue Engineering
Carmine Onofrillo / *Department of Surgery, The University of Melbourne, St Vincent's Hospital Melbourne, Fitzroy 3065, VIC Australia., Australia*

14:45 S5-9-5
Tailoring Bioinks for Cultured Meat Engineering: Differentiating Bioprinted Spheroids into Myogenic and Adipogenic Phenotypes in Edible Gellan-Protein Blends
Petra Kluger / *Reutlingen University, Germany*

14:55 S5-9-6
Bioactive Magnesium Incorporated Scaffold for Challenging Bone Defects Repair
Yuxiao LAI / *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China*

Concurrent Symposium 5 (S5-10)

13:40~15:10 Room 321-A

Antifouling biomaterials and surface characterization

Organizer Yoon Ki Joung / *Korea Institute of Science and Technology, Korea, Republic of*

Chair Yoon Ki Joung / *Korea Institute of Science and Technology, Korea, Republic of*

Sung-Hwan Choi / *Yonsei University College of Dentistry, Korea, Republic of*

Keynote Speaker 13:40 S5-10-1
Zwitterionic Materials for Biomedical Applications
Shaoyi Jiang / *Cornell University, USA*

Invited Speaker 14:05 S5-10-2
Harnessing nature's blueprints to design antifouling interactive biointerfaces
César Rodriguez-Emmenegger / *DWI – Leibniz-Institut für Interaktive Materialien, Germany*

14:20 S5-10-3
Antifouling bioactive materials using zwitterions
Sung-Hwan Choi / *Yonsei University College of Dentistry, Korea, Republic of*

Oral Presenter 14:35 S5-10-4
Surface-protein interactions on additively manufactured CoCr alloy for biomedical application
Thomas Luxbacher / *Anton Paar GmbH, Austria*

14:45 S5-10-5
The attachment and conformation of fibrinogen and albumin controlled by PAMAM-NH_2/-COOH and the thermodynamic-interaction between PAMAM and proteins
Li Li / *School of Health Management, Xihua University, China*

14:55 S5-10-6
Combined Use of Polycarboxybetaine Coatings with a Selective FXIIa Inhibitor to Create Potent Anticoagulation without Bleeding during ECLS
Suji Shin / *Carnegie Mellon University, USA*

Concurrent Symposium 5 (S5-11)

13:40~15:10 Room 321-B

Imaging and spectroscopic analysis of biomaterials and biological systems

Organizer Sung Sik Lee / *ETH Zurich, Switzerland*

Chair Sung Sik Lee / *ETH Zurich, Switzerland*

Jong-Chan Lee / *DGIST, Korea, Republic of*

Keynote Speaker
13:40 S5-11-1
Holotomography and artificial intelligence: label-free 3D imaging, classification, and inference of live cells, tissues, and organoids
Yong Keun Park / *KAIST, Korea, Republic of*

Invited Speaker
14:05 S5-11-2
Byung Mook Weon / *Sungkyunkwan University, Korea, Republic of*

14:20 S5-11-3
Tackling background noise problem in STED optical nanoscopy
Jong-Chan Lee / *DGIST, Korea, Republic of*

14:35 S5-11-4
Microfluidic platform for single live sperm analysis
Jae Bem You / *Kyungpook National University, Korea, Republic of*

Oral Presenter
14:50 S5-11-5
Comprehensive Analysis of Collagen Hydrogel Response to Physiological pH Fluctuations: Structure, Viscoelasticity, and Permeability
Orit Bronner Shtrauchler / *Department of Chemical Engineering, Ben-Gurion University, Beer Sheva, Israel*

Concurrent Symposium 5 (S5-12)

13:40~15:10 Room 320-A

Clinical Translation of Biodegradable Materials

Organizer Huinan Liu / *University of California, Riverside, USA*

Chair Huinan Liu / *University of California, Riverside, USA*

Yufeng Zheng / *Peking University, China*

Keynote Speaker
13:40 S5-12-1
Technology Development and Translation of Citrate-Based Biomaterials
Jian Yang / *Westlake University, China*

Invited Speaker
14:05 S5-12-2
Elastic biodegradable hydrogels for tissue repair
Yi Hong / *University of Texas at Arlington, USA*

14:20 S5-12-3
Magnesium Oxide and Magnesium Hydroxide Nanoparticles Disrupted Pseudomonas aeruginosa, Staphylococcus epidermidis, and Staphylococcus aureus Biofilms in vitro
Patricia Holt-Torres / *University of California, Riverside, USA*

14:35 S5-12-4
Preparation and biological evaluation of high strength and toughness degradable zinc alloys
Lijing Yang / *Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, China*

Oral Presenter
14:50 S5-12-5
Engineering Bioresorbable Implants and Composites for Medical Applications
Huinan Liu / *University of California, Riverside, USA*

15:00 S5-12-6
Biodegradable polymer stents for the treatment of Eustachian tube dysfunction
Kerstin Lebahn / *Institute for Biomedical Engineering, Rostock University Medical Center, Germany*

Concurrent Symposium 5 (S5-13)

13:40~15:10 Room 320-B

Biomedical technology based on rheology

Organizer Jun Dong Park / *Sookmyung Women's University, Korea, Republic of*

Chair Atsushi Matsumoto / *University of Fukui, Japan*

Jun Dong Park / *Sookmyung Women's University, Korea, Republic of*

Keynote Speaker
13:40 S5-13-1
Polymer Lung Surfactant: A Novel Synthetic Therapy for Respiratory Distress Syndrome
You-Yeon Won / *Purdue University, USA*

Invited Speaker
14:05 S5-13-2
Development of Human Skin Model: Evaluation of Antibiotic Treatment and Transdermal Absorption
Jae Jung Kim / *Hongik University, Korea, Republic of*

14:20 S5-13-3
Understanding rheological behavior of thixotropic fluids during swallowing
Seon Yeop Jung / *Dankook University, Korea, Republic of*

Oral Presenter
14:35 S5-13-4
New methodological insights into supply-agnostic control of collagen slurry rheology
Emma Gough / *University of Cambridge, United Kingdom*

14:45 S5-13-5
Rheology of entangled polyelectrolyte solutions in the semidilute regime studied by diffusing wave spectroscopy microrheometry
Atsushi Matsumoto / *University of Fukui, Japan*

Concurrent Symposium 5 (S5-14)

13:40~15:10 Room 315

Immunoengineering Redefines Biocompatibility

Organizer Buddy Ratner / *University of Washington, USA*

Chair Buddy Ratner / *University of Washington, USA*

Yoon Sung Nam / *Korea Advanced Institute of Science and Technology, Korea, Republic of*

Keynote Speaker
13:40 S5-14-1
Redefining Biocompatibility
Buddy Ratner / *University of Washington, USA*

Invited Speaker
14:05 S5-14-2
Immunological Cloaking of Lytic Bacteriophage for In vivo Anti-bacterial Therapy
Yoon Sung Nam / *Korea Advanced Institute of Science and Technology, Korea, Republic of*

Oral Presenter
14:20 S5-14-3
Establishing an Artificial Intelligence-Driven Definition of Biomaterial Biocompatibility
Miguel Mateu Sanz / *Biomaterials, Biomechanics and Tissue Engineering Group, Department of Materials Science and Engineering, Universitat Politècnica de Catalunya, Barcelona, Spain., Spain*

14:30 S5-14-4
Cadmium ions removal by dissolution/precipitation of calcium phosphate
Ahmad Bikharudin / *Department of Biomaterials, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Japan*

14:40 S5-14-5
AI-Based Macrophage Phenotype Discrimination Method Reveals Morphological and Migratory Differences between Cell Line
Yurika Shibuya / *Shibaura Institute of Technology, Japan*

14:50 S5-14-6
Supervised Machine Learning Tool for Precision Bioink Printing Parameter Prediction
Yaxi Chen / *Department of Mechanical Engineering, University College London, United Kingdom*

15:00 S5-14-7
Polypept(o)ides: From functional materials based on endogenous amino acids to cancer immune therapies
Matthias Barz / *Leiden Academic Center for Drug Research, Leiden University, Netherlands*

15:10~15:20

Break

15:20~16:10 Convention Hall, 5F

Plenary Lecture 3

Chairs Tetsuji Yamaoka / *National Cerebral and Cardiovascular Research Institute, Japan*

Molly Stevens / *Imperial College London, United Kingdom*

Plenary Speaker 15:20 PL3

Minimally Invasive Interventional Cardiovascular Materials and Devices

Yunbing Wang / *Sichuan University, China*

15:30~16:30

Affiliated Meeting 2

Room 504 AF2-4

Steering Committee of the International College of Fellows - FBSE

16:10~16:30

Coffee Break

16:30~18:00

Affiliated Meeting 2

Room 504 AF2-5

General Assembly of the FBSE (by invitation only)

Concurrent Symposium 6 (S6-1)

16:30~18:00 Room 325-AB

Functional materials for nerve regeneration

Organizer Jae Young Lee / *Gwangju Institute of Science and Technology, Korea, Republic of*

Chair Jae Young Lee / *Gwangju Institute of Science and Technology, Korea, Republic of*

Young Hye Song / *University of Arkansas, USA*

Keynote Speaker 16:30 S6-1-1

Harnessing the regenerative power of brain using injectable peptide hydrogels

John Forsythe / *Monash University, Australia*

Invited Speaker 16:55 S6-1-2

Nervous system regeneration using tissue engineering strategies

Tzu-Wei Wang / *National Tsing Hua University, Chinese Taipei*

17:10 S6-1-3

Understanding Neuro-Regenerative Behavior of Adipose-Derived Stem Cells as a Function of Extracellular Matrix Parameters

Young Hye Song / *University of Arkansas, USA*

Oral Presenter 17:25 S6-1-4

The effect of bioactive scaffolds with enhanced supramolecular motion on neuronal regeneration

Zaida Alvarez / *Institute for Bioengineering of Catalonia (IBEC), Spain*

17:35 S6-1-5

Fully biodegradable self-powered electronics for neurological diseases treatment

Liu Wang / *Beihang University, China*

17:45 S6-1-6

Semi-Interpenetrated Network Structure of Collagen/PEG/PPy Hydrogel with Enhanced Mechanical Strength, Biostability, and Electrical Conductivity for Potential Neural Tissue Regeneration Application

Nur Hidayah Shahemi / *Faculty of Applied Sciences, Universiti Teknologi MARA, Malaysia*

Concurrent Symposium 6 (S6-2)

16:30~18:00 Room 325-CD

Frontiers in Biofabrication Technologies

Organizer Lorenzo Moroni / *Maastricht University, Netherlands*

Chair Lorenzo Moroni / *Maastricht University, Netherlands*

Koichi Nakayama / *Saga University, Japan*

Keynote Speaker 16:30 S6-2-1

Dynamic biomaterials to enable biofabrication of personalized tissue mimics

Sarah Heilshorn / *Stanford University, USA*

Invited Speaker 16:55 S6-2-2

Matryoshka-inspired Biological Constructs to mimic skeletal niche for osteochondral regeneration

Lorenzo Moroni / *Maastricht University, Netherlands*

17:10 S6-2-3

Inventing for scalability: creating a formulation library to bioprint any human tissue from one tuneable synthetic biomaterial foundation

Martin Engel / *Inventia Life Science, Australia*

17:25 S6-2-4

Tissue regenerative medicine research using 3D bioprinters and bioinks

Dong Hyuk Lee / *Gachon University, CleCell Co., Ltd., Korea, Republic of*

Oral Presenter 17:40 S6-2-5

Bioinspired scaffolds for the regeneration of the temporomandibular joint

Joanna BABILOTTE / *Complex Tissue Regeneration department, MERLN Institute for Technology-Inspired Regenerative Medicine, Maastricht University, Netherlands*

Concurrent Symposium 6 (S6-3)

16:30~18:00 Room 324-A

Biomaterials Award Session

Organizer Emma Xu / *Elsevier, China*

Chair Kam W. Leong / *Columbia University, USA*

Invited Speaker (20 min) 16:30 S6-3-1

Biomaterials for Tissue Engineering and Disease Modeling

Antonios Mikos / *Rice University, USA*

16:50 S6-3-2

Engineering in Precision Medicine

Ali Khademhosseini / *Terasaki Institute, USA*

17:10 S6-3-3

Photocrosslinkable Polymers for Tissue Regeneration

Xin Zhao / *The Hong Kong Polytechnic University, Hong Kong SAR, China*

17:30 S6-3-4

Revitalizing exhausted T Cells with IL-10: a journey from lab discovery to clinical application for enhanced cancer immunotherapy

Li Tang / *EPFL, Switzerland*

Concurrent Symposium 6 (S6-4)

16:30~18:00 Room 324-B

Granular Biomaterials for Tissue Engineering

Organizer Amir Sheikhi / *Penn State University, USA*

Chair Amir Sheikhi / *Penn State University, USA*

Tatiana Segura / *Duke University, USA*

Keynote Speaker
16:30 S6-4-1
Engineering hydrogel microparticle-based materials for bioprinting, tissue regeneration, and biosensing
Daniel L. Alge / *Texas A&M University, USA*

Invited Speaker
16:55 S6-4-2
Gelatin Methacryloyl (GelMA) Granular Biomaterials for Patterning Soft Tissues
Amir Sheikhi / *Penn State University, USA*

Oral Presenter
17:10 S6-4-3
Functionalized injectable microgels for the treatment of osteoarthritis
Yiting Lei / *The First Affiliated Hospital of Chongqing Medical University, China*

17:20 S6-4-4
Developing vascularized *in vitro* 3D jammed microgel scaffolds without RGD
Natasha Claxton / *University of Virginia ,USA*

17:30 S6-4-5
Mineralized Collagen Building Blocks Fabrication for Bottom-Up Bone Tissue Engineering
Esra Güben Kaçmaz / *Maastricht University, Netherlands*

17:40 S6-4-6
Granular hydrogel model of hematopoietic stem cells in bone marrow
Gunnar Thompson / *University of Illinois Urbana-Champaign, USA*

Concurrent Symposium 6 (S6-5)

16:30~18:00 Room 323

Biomaterials meets glia: biomaterials applications to study glia and gliopathologies

Organizer Ana Paula Pego / *i3S / INEB - University of Porto, Portugal*

Chair Ana Paula Pego / *i3S / INEB - University of Porto, Portugal*

Shelly Sakiyama-Elbert / *University of Washington, USA*

Keynote Speaker
16:30 S6-5-1
Glial engineering and interfaces: multifunctional bio(nano) materials and devices to dialogue with glia
Valentina Benfenati / *Consiglio Nazionale delle Ricerche, Istituto per la Sintesi Organica e Fotoreattività, Italy*

Invited Speaker
16:55 S6-5-2
Unravelling glia mechanobiology in bioengineered models to tackle neural repair failure
Ana Paula Pego / *i3S / INEB - University of Porto, Portugal*

17:10 S6-5-3
Biomaterials scaffolds to modulate the role of astrocytes after spinal cord injury
Shelly Sakiyama-Elbert / *University of Washington, USA*

Oral Presenter
17:25 S6-5-4
Extracellular Matrix-based Biocompatible Adhesive Hydrogel for Neural-electrode Interface
Yeonggwon Jo / *Pohang University of Science and Technology, Korea, Republic of*

17:35 S6-5-5
Piezoelectric stimulation of microglia as an innovative approach for glioma immunotherapy
Gianni Ciofani / *Istituto Italiano di Tecnologia, Italy*

Concurrent Symposium 6 (S6-6)

16:30~18:00 Room 322

Smart biomaterials for the modulation of inflammation and coagulation process

Organizer Wendong Gao / *Queensland University of Technology, Australia*

Chair Yingying Du / *Huazhong University of Science and Technology, China*

Keynote Speaker
16:30 S6-6-1
INFLAMMATION AND BONE REGENERATION
Yin Xiao / *Griffith University, Australia*

Invited Speaker
16:55 S6-6-2
Immunomodulation Based Strategy for Improving Metal Implant-Soft Tissue Integration
Zetao Chen / *Sun Yat-sen University, China*

17:10 S6-6-3
Multifunctional magnetic nanovesicles for treating severe bacteremia
Joo Hun Kang / *Ulsan National Institute of Science & Technology, Korea, Republic of*

Oral Presenter
17:25 S6-6-4
Rendering antimicrobial hernia meshes without an adverse immune reaction
Cynthia Calligaro / *SPARTHA Medical, France*

17:35 S6-6-5
Superhydrophilic poly(ε-caprolactone)/Tween-20 electrospun fiber coated with chitosan/heparin - A promising material for developing cardiac patches
Roberta Maia Sabino / *University of Wyoming, USA*

Concurrent Symposium 6 (S6-7)

16:30~18:00 Room 306-A

Canadian Biomaterials Society Award Presentation Symposium

Organizer Marta Cerruti / *McGill University, Canada*

Chair Marta Cerruti / *McGill University, Canada*

Sophie Lerouge / *École de Technologie Supérieure, Canada*

Keynote Speaker (40 min)
16:30 S6-7-1
Delivering Gene Medicines without Viruses
Hasan Uludag / *University of Alberta, Canada*

Invited Speaker (20 min)
17:10 S6-7-2
PEPTIDE-BASED MATERIALS FOR SOFT TISSUE AND ORGAN REPAIR
Emilio Alarcon / *University of Ottawa, Canada*

17:30 S6-7-3
Nanoparticle nanoassemblies with stimulus-responsive properties for enhanced local drug delivery
Todd Hoare / *McMaster University, Canada*

Concurrent Symposium 6 (S6-8)

16:30~18:00 Room 306-B

Bioadhesive Biomaterials

Organizer Jayakumar Rangasamy / *Amrita Vishwa Vidyapeetham, India*

Chair Jayakumar Rangasamy / *Amrita Vishwa Vidyapeetham, India*

Nathaniel Hwang / *Seoul National University, Korea, Republic of*

Keynote Speaker
16:30 S6-8-1
Antibacterial Bioadhesives in Mediastinitis
Jayakumar Rangasamy / *Amrita Vishwa Vidyapeetham, India*

Invited Speaker
16:55 S6-8-2
Development of Bio-polysaccharide-based Biomimetic Hemostatic Bone Adhesives
Arun Kumar Rajendran / *Seoul National University, Korea, Republic of*

Oral Presenter
17:10 S6-8-3
Injectable asymmetric adhesive-antifouling bifunctional hydrogel for peritoneal adhesion prevention
Zhongming Zhao / *tianjin university, China*

17:20 S6-8-4
Anisotropic hydrogel-based engineered extracellular matrices for promoting regenerative tendon healing
Tayler Hebner / *Department of Bioengineering, University of Oregon, USA*

17:30 S6-8-5
Biodegradable bottlebrush polymer with salt-tunable adhesion properties
Hoyong Chung / *FAMU-FSU College of Engineering, USA*

17:40 S6-8-6
Alginate (ALG)-*g*-maleic anhydride-chitosan particles as potential mucoadhesive oral drug delivery devices
Adley Forti Rubira / *Maringá State University, Department of Chemistry, Brazil*

17:50 S6-8-7
Tissue adhesive materials based on hydrophobically-modified Alaska pollock-derived gelatin for biomedical applications
Tetsushi Taguchi / *NIMS, Japan*

Concurrent Symposium 6 (S6-9)

16:30~18:00 Room 314

Biomaterials for the Maternal-Fetal Interface

Organizer Samantha Zambuto / *Washington University in St. Louis, USA*

Chair Samantha Zambuto / *Washington University in St. Louis, USA*

Juan Gnecco / *Tufts University, USA*

Keynote Speaker
16:30 S6-9-1
Biomimetic scaffolds for vaginal tissue engineering
Samantha Zambuto / *Washington University in St. Louis, USA*

Oral Presenter
17:10 S6-9-2
Selection of a kidney cell line for organoid studies in collagen scaffolds
Emrys Thursfield / *Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom*

17:20 S6-9-3
Generation of low immunogenic stem cell by induced cardiomyocyte differentiation
TzuCheng Sung / *Wenzhou medical university, China*

17:30 S6-9-4
Forming and probing human neuromuscular junctions using iPSC-derived cell types within microfabricated devices
Stephanie Belen Michelena Tupiza / *School of Chemical Engineering, The University of Queensland, Brisbane, QLD, Australia., Australia*

17:40 S6-9-5
Microgranular endometrial orgnaoids to reconstruct endometrial injuries for infertility treatment
Myeong Jae Baek / *Kyungpook national university, Korea, Republic of*

17:50 S6-9-6
A CONTROLLABLE HUMAN SPINAL CORD MODEL WITH FULL DORSOVENTRAL PATTERNING
Jeyoon Bok / *University of Michigan, USA*

Concurrent Symposium 6 (S6-10)

16:30~18:00 Room 321-A

Design, Fabrication and Evaluation of Biomedical Textiles

Organizer Martin W. King / *North Carolina State University, USA*

Chair Martin W. King / *North Carolina State University, USA*

Fujun Wang / *Donghua University, China*

Keynote Speaker
16:30 S6-10-1
Advanced Textile Structural Devices for Load-Bearing Soft Tissue High Quality Repair
Lu Wang / *Donghua University, China*

Invited Speaker
16:55 S6-10-2
Fabrication of barbed sutures using a laser system for reconstructive surgery
Martin W. King / *North Carolina State University, USA*

17:10 S6-10-3
Long term organotypic culture of vascular endothelium: A preliminary study
Ze Zhang / *CHU de Quebec, Universite Laval, Canada*

17:25 S6-10-4
Advances in the in vivo evaluation of a tissue-engineered vascular graft made by weaving threads of cell-assembled extracellular matrix
Nicolas L'Heureux / *Université de Bordeaux, France*

Oral Presenter
17:40 S6-10-5
Preparation and characterization of silk fibroin-based biomaterial film from *Antheraea frithi* Moore cocoon for potential biomedical applications
Sanasam Yaiphabi / *Manipur University, India*

17:50 S6-10-6
Braided silk fibroin artificial ligament combining with gradient hydrogel for ligament-bone integration
Guoping GUAN / *Key Laboratory of Textile Science and Technology, Ministry of Education College of Textiles, Donghua University, Shanghai, 201620, China, China*

Concurrent Symposium 6 (S6-11)

16:30~18:00 Room 321-B

Liquid biopsy for cancer diagnosis and prognosis

Organizer Seungpyo Hong / *University of Wisconsin-Madison, USA*

Chair Seungpyo Hong / *University of Wisconsin-Madison, USA*

Tian Zhang / *University of Texas Southwestern Medical Center, USA*

Keynote Speaker
16:30 S6-11-1
Andrew Wang / *University of Texas Southwestern Medical Center, USA*

Invited Speaker
16:55 S6-11-2
Liquid Biopsy for Cancer Immunotherapy
Jiyoon Bu / *Inha University, Korea, Republic of*

17:10 S6-11-3
Capturing and positioning the nanoparticle down to single particle level
Yong-Sang Ryu / *Korea University, Korea, Republic of*

Oral Presenter
17:25 S6-11-4
Investigation of extrachromosomal DNA (ecDNA) activities in extracellular matrix component-based environmen
SeoYul Jo / *Sungkyunkwan University, Korea, Republic of*

17:35 S6-11-5
Living single-cell secreted multiple biomarker profiling using microfluidic chip and machine learning for tumor cell classification
Lin Han / *Shandong University, China*

17:45 S6-11-6
An efficient strategy for circulating tumor cell detection: surface-enhanced Raman spectroscopy
Jie Lin / *Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China*

Concurrent Symposium 6 (S6-12)

16:30~18:00 Room 320-A

Regulatory science for the translation of biomaterials products

Organizer Kai Zhang / *Sichuan University, China*

Chair Kai Zhang / *Sichuan University, China*

Arthur J. Coury / *Northeastern University, USA*

Keynote Speaker
16:30 S6-12-1
Regulatory Science for Medical Devices
Suping Lyu / *Medtronic Inc., USA*

Oral Presenter
16:55 S6-12-2
A safe-by-design approach for medical implants
Anniek Gielen / *National institute of public health and the environment, Netherlands*

17:05 S6-12-3
Immunogenicity assessment for swim bladder-derived biomaterials
Jing Liu / *Institute of Biomedical Engineering, Chinese Academy of Medical Sciences & Peking Union Medical College, China*

17:15 S6-12-4
The research on key technology for evaluation of soft tissue wound repair materials
LI NA / *Sichuan university, China*

17:25 S6-12-5
Research Status of Nanomaterial Medical Devices and Discussion on Biological Evaluation
SUN Lingxiao / *Shandong Institute of Medical Device and Pharmaceutical Packaging Inspection, NMPA Key Laboratory for Safety Evaluation of Biomaterials and Medical Devices, Shandong Key Laboratory of Biological Evaluation for Medical Devices, Jinan, Shandong, China ,China*

Concurrent Symposium 6 (S6-13)

16:30~18:00 Room 320-B

Biomaterials' challenges: From academia to industry

Organizer Sandra Van Vlierberghe / *Ghent University, Belgium*

Chair Sandra Van Vlierberghe / *Ghent University, Belgium*

Insup Noh / *Seoul National University of Science and Technology, Korea, Republic of*

Keynote Speaker
16:30 S6-13-1
From BIO INK to BIO INCorporation: the launch of BIO INX
Jasper Van Hoorick / *BIO INX, Belgium*

Invited Speaker
16:55 S6-13-2
Taking exosome therapeutics from academia to industry
Yong Woo Cho / *Hanyang University, Korea, Republic of*

17:10 S6-13-3
Academia, Start-Ups, CDMOs, CROs and Strategics: The challenge of translating innovative biomaterials to the clinic
Chris Wattengel / *Collagen Solutions, United Kingdom*

Oral Presenter
17:25 S6-13-4
Evaluating Global Participation in Biomaterials Science: Addressing Disparities in Authorship and Editorial Boards
Aåçna Maria Porras / *University of Florida, USA*

17:35 S6-13-5
Double network bioadhesives for tissue adhesion
Terry Steele / *Nanyang Technological University, Singapore*

17:45 S6-13-5
The Impact of Salt on the Skin Adhesion Properties of Cosmetic Acrylic Polymer Gels
Jihoon Ha / *Kolmar Korea, Korea, Republic of*

Concurrent Symposium 6 (S6-14)

16:30~18:00 Room 315

Emerging Nanobiomaterials and Nanofabrication

Organizer Bingyun Li / *West Virginia University School of Medicine, USA*

Chair Bingyun Li / *West Virginia University School of Medicine, USA*

Malcolm Xing / *University of Manitoba and Children's Hospital Research Institute of Manitoba, Canada*

Keynote Speaker
16:30 S6-14-1
Proteomic-driven discovery of developmental peptides for guiding iPSC pancreatic lineage specification and maturation
Kaiming Ye / *Binghamton University, State University of New York, USA*

Invited Speaker
16:55 S6-14-2
Near-atomic-scale tribocorrosion testing of metallic biomaterial surfaces and e-beam formed carbon overlayers
Jeremy L. Gilbert / *Clemson University, USA*

17:10 S6-14-3
Engineered nanoparticles for treating ischemic cardiovascular diseases
Jianjun Guan / *Washington University in St. Louis, USA*

Oral Presenter
17:25 S6-14-4
Unique Antimicrobial Peptide Presents Low *in vitro* Toxicity toward Mammalian Cells
Bingyun Li / *West Virginia University School of Medicine, USA*

17:35 S6-14-5
Nitrogen-Enriched Carbon Quantum Dots Immobilized in Hydrogels for Long-Term Continuous Glucose Monitorin
Ranjit De / *Pohang University of Science and Technology (POSTECH), Korea, Republic of*

Workshop 3 (W3-1)

16:30~18:40 Room 211

Explore a better future with advanced science and technology

Organizer Xing-Jie Liang / *National Center for Nanoscience and Technology of China, China*

Chair Xing-Jie Liang / *National Center for Nanoscience and Technology of China, China*

Bingyang Shi / *Henan University, China*

Speaker (25+5 min)
16:30 W3-1-1
Kam Leong / *Columbia University, USA*

Speaker (20+5 min)
17:05 W3-1-2
Recent Progress on Fluorescent Imaging Probes and Phototheray
Juyoung Yoon / *Ewha Womans University, Korea, Republic of*

17:25 W3-1-3
Research advances of cell membrane coated biomimetic nanomedicines for targeted treatment of atherosclerosis
Guixue Wang / *Bioengineering College of Chongqing University, China*

17:50 W3-1-4
Hyung-Jun Im / *Seoul National University, Korea, Republic of*

18:15 W3-1-5
Dong Ma / *Jinan University, China*

18:00~19:00 Grand Ballroom, 3F

Poster Session 2

19:00~21:00 Event Hall, 2F, Fashion Center Korea

Young Investigators' & Students' Night

May 29 (Wed)

07:00~08:30 Lobby, 3F

Registration

08:30~10:00

Affiliated Meeting 3

Room 504 AF3-1

Annual General Meeting of the Canadian Biomaterials Society (by invitation only)

Oral Session 2 (OS2-1)

08:30~09:30 Room 325-AB

Hydrogel 2

Chair Max Yavitt / *University of Otago Christchurch, New Zealand*

Takashi Miyata / *Kansai University, Japan*

Oral Presenter 1 08:30 OS2-1-1

Diffusion-based microfluidic approach enables tuning of multiscale hydrogel architectures for stem cell culture

Max Yavitt / *University of Otago Christchurch, New Zealand*

Oral Presenter 2 08:40 OS2-1-2

Design of molecularly imprinted hydrogels with dynamic molecular binding sites for drug delivery

Takashi Miyata / *Kansai University, Japan*

Oral Presenter 3 08:50 OS2-1-3

Life cycle regulators: Micro-nanohydrogel microspheres for regulating mitochondrial biogenesis in middle-old cells and apoptosis in senescent cells

Honglin Xiang / *Affiliated Hospital of North Sichuan Medical College, China*

Oral Presenter 4 09:00 OS2-1-4

Physicochemical Properties and Biocompatibility Analysis of Temperature-sensitive Hydrogels with Different Formulations

PEI-YU CHEN / *National Taipei University of Technology, Chinese Taipei*

Oral Session 2 (OS2-2)

08:30~09:30 Room 325-CD

Diverse fabrication technology 2

Chair Fan Zhao / *Donghua University, China*

Michael Teske / *Institute for Biomedical Engineering, University Medical Center Rostock, Germany*

Oral Presenter 1 08:30 OS2-2-1

Development of a hydrogel ionic circuit device and its application in chronic wound biofilm treatment

Fan Zhao / *Donghua University, China*

Oral Presenter 2 08:40 OS2-2-2

Hybrid additive manufacturing process for drug delivery applications

Michael Teske / *Institute for Biomedical Engineering, University Medical Center Rostock, Germany*

Oral Presenter 3 08:50 OS2-2-3

Ultrasound-Controlled Release of GFs from Cerasomes combined with Implantation of PCL Scaffolds Seeded with BMSCs for Biomimetic Tendon-to-Bone Interface Engineering

Cancan Du / *Peking University Third Hospital, China*

Oral Presenter 4 09:00 OS2-2-4

Fully 3D-printed PVDF-TrFE based piezoelectric devices with PVDF-TrFE-rGO composites as electrodes

Antrea Spanou / *Uppsala University, Sweden*

Oral Session 2 (OS2-3)

08:30~09:30 Room 324-A

Inorganic materials for therapeutic agents

Chair Matthias Epple / *University of Duisburg-Essen, Germany*

Elham Sharifikolouei / *Politecnico di Torino, Italy*

Oral Presenter 1 08:30 OS2-3-1

Metallic Glasses for Biomedical Applications: From Intrinsically Antibacterial Surfaces, Dental Implants, Smart Healthcare Wearable Biomaterials to 4D-Materials for Wound Healing

Elham Sharifikolouei / *Politecnico di Torino, Italy*

Oral Presenter 2 08:40 OS2-3-2

Doxorubicin-loaded ultrasmall gold nanoparticles (2 nm) for tumor therapy and fluorescent imaging

Matthias Epple / *University of Duisburg-Essen, Germany*

Oral Presenter 3 08:50 OS2-3-3

Dual-Sensitization of X-ray and Near-Infrared Based on Pd-Loaded Metal-Organic Framework for Radiation-Photothermal Combined Cancer Therapy

Yu-Sheng Yu / *National Taiwan University, Department of Chemical Engineering, Chinese Taipei*

Oral Presenter 4 09:00 OS2-3-4

Transition metal-doped nanoprobe materials and their applications in tumor theranostics

Fang Yang / *Ningbo Institute of Materials Science and Engineering, Chinese Academy of Sciences, China*

Oral Presenter 5 09:10 OS2-3-5

Controlling Cellular Activity through Deep Learning via Cellular Contact Guidance on Nanowrinkled Graphene Oxide Surfaces with Highly Aligned Configurations

Moon Sung Kang / *Pusan National University, Korea, Republic of*

Oral Session 2 (OS2-4)

08:30~09:30 Room 324-B

Biomaterials scaffolds 2

Chair Xing Zhang / *Institute of Metal Research, Chinese Academy of Sciences, China*

Ju Jin / *Menzies Health Institute Queensland, Griffith University, Australia*

Oral Presenter 1 08:30 OS2-4-1

Biomimetic anisotropic polymeric scaffolds for heart valve tissue engineering

Xing Zhang / *Institute of Metal Research, Chinese Academy of Sciences, China*

Oral Presenter 2 08:40 OS2-4-2

Revolutionising Nerve Repair with Cell Therapy Devices: Latest Developments and Future Prospects

Ju Jin / *Menzies Health Institute Queensland, Griffith University, Australia*

Oral Presenter 3 08:50 OS2-4-3

Gelatin/alginate double-network hydrogel nerve guidance conduits: fabrication by gamma irradiation and performance for peripheral nerve regeneration

Junghyun Kim / *Gwangju institute of science and technology (GIST), Korea, Republic of*

Oral Presenter 4 09:00 OS2-4-4

Insertional tissues mimetics: 3D printing thiolated gelatin hydrogel as a cell carrier for porous scaffold fabrication

Genesis Rios Adorno / *Department of Chemical and Biomolecular Engineering, University of Illinois Urbana-Champaign, USA*

Oral Presenter 5 09:10 OS2-4-5

A Novel Foam-based Scaffold Platform Technology for Guided Tissue Regeneration and Cell Delivery

Ishay Attar / *BioChange ltd, Israel*

Oral Presenter 6 09:20 OS2-4-6

3D Biomimetic piezoelectric scaffolds-based therapeutic approach for volumetric muscle loss repair

Oana Dobre / *Centre for the Cellular Microenvironment, Advanced Research Centre, University of Glasgow, UK., United Kingdom*

Oral Session 2 (OS2-5)

08:30~09:30 Room 323

Biomaterials for medical applications 2

Chair Yifeng Lei / *Wuhan University, China*

YUYUN YANG / *Harbin Engineering University, China*

Oral Presenter 1 08:30 OS2-5-1
Facilitating Tissue Ingrowth of the Stent Graft for Potentially Reducing Interventions in AAA Patients
Klaudia Jurczak / *University of Groningen, Netherlands*

Oral Presenter 2 08:40 OS2-5-2
The go-graft odyssey: shaping a non-fouling hydrogel into an anti-adhesive vascular graft for bypass surgery
Salomé Luís / *i3s – Instituto de Investigação e Inovação em Saúde; INEB - Instituto Nacional de Engenharia Biomédica, Portugal*

Oral Presenter 3 08:50 OS2-5-3
Photonic crystal hydrogels for wearable glucose sensor
Yifeng Lei / *Wuhan University, China*

Oral Presenter 4 09:00 OS2-5-4
Iron oxide-based nanotubes: biomagnetic, biodegradable properties, and prospective biomedical applications
YUYUN YANG / *Harbin Engineering University, China*

Oral Presenter 5 09:10 OS2-5-5
BSA-ICG Complex loaded 3D Printed Phototherapeutic Patches for Wound Healing
Jayashree Roy / *Indian Institute of Technology, Jodhpur, India*

Oral Session 2 (OS2-6)

08:30~09:30 Room 322

Functional nanobiomaterials for tissue engineering 1

Chair Su-Hwan Kim / *Dong-A University, Korea, Republic of*

Viviana M. Posada / *The Pennsylvania State University, USA*

Oral Presenter 1 08:30 OS2-6-1
Cell interaction effects of irradiation-synthesized nanoscale topographies
Viviana M. Posada / *The Pennsylvania State University, USA*

Oral Presenter 2 08:40 OS2-6-2
Nano-scale clustering of cell adhesive ligands promotes myoblast proliferation and myotube formation: novel technology for skeletal muscle tissue engineering
Shirin Nour / *1 Department of Biomedical Engineering, The University of Melbourne; 2 Graeme Clark Institute for Biomedical Engineering, University of Melbourne; 3 2 Polymer Science Group, Department of Chemical Engineering, The University of Melbourne, Australia*

Oral Presenter 3 08:50 OS2-6-3
Bioenergetic-active exosomes for cartilage regeneration
Xulong Liu / *Advanced Biomaterials & Tissue Engineering Center, Huazhong University of Science and Technology, China*

Oral Presenter 4 09:00 OS2-6-4
Development of a photo-curable, bioactive, biodegradable silica-GelMA hybrid for advanced bone regeneration
Bowen Zheng / *Imperial College London, United Kingdom*

Oral Presenter 5 09:10 OS2-6-5
Synthetic self-assembling growth factors capable of dynamic signaling for directed tissue engineering
Vivek Kumar / *New Jersey Institute of Technology, USA*

Oral Session 2 (OS2-7)

08:30~09:30 Room 306-A

Bioceramics 2

Chair Harikrishna Varma / *SCTIMST, India*

Mamoru Aizawa / *Meiji University, Japan*

Oral Presenter 1 08:30 OS2-7-1
Bioceramic – PVA Composite for Graft Applications : Demonstration in Rat Calvarial Model
Harikrishna Varma / *SCTIMST, India*

Oral Presenter 2 08:40 OS2-7-2
Development of calcium phosphate/ modified starch composite for hemostasis and bone regeneration
Huan Zhou / *Hebei University of Technology, India*

Oral Presenter 3 08:50 OS2-7-3
Densification of low-crystalline calcium phosphates to near-full density by simple uniaxial compaction at room temperature
Kristaps Rubenis / *Riga Technical University, Latvia*

Oral Presenter 4 09:00 OS2-7-4
Development of apatite ceramics based on innovative crystal anisotropy control technology
Mamoru Aizawa / *Meiji University, Japan, Development of apatite ceramics based on innovative crystal anisotropy control technology*

Oral Presenter 5 09:10 OS2-7-5
Functionalized micro/nano morphology of 3D printing bioceramic tuning cellular mechanotransduction signal to achieve osteogenic response
Lina Wu / *Sichuan university, China*

Oral Session 2 (OS2-8)

08:30~09:30 Room 306-B

Technology for Additive Manufacturing 2 (Non-polymeric)

Chair Monica Sandri / *CNR-ISSMC Institute of Science, Technology and Sustainability for Ceramics, Italy*

Nurulhuda Mohd / *Department of Restorative Dentistry, Faculty of Dentistry, Universiti Kebangsaan Malaysia, Kuala Lumpur 50300, Malaysia, Malaysia*

Oral Presenter 1 08:30 OS2-8-1
3D printing technology for bone tissue engineering: biomimetic hydroxyapatites as osteoinductive ingredient for nanocomposite bioinks desig
Monica Sandri / *CNR-ISSMC Institute of Science, Technology and Sustainability for Ceramics*

Oral Presenter 2 08:40 OS2-8-2
Pulsed laser-triggered nano-sized biodegradable metal powder production for the precise metal 3D printing and skin-permeable drug applications
Pascale Chevallier / *Laval University, Canada*

Oral Presenter 3 08:50 OS2-8-3
Development of Three-Dimensional Bioprinted Gelatin/ Hydroxyapatite Hydrogel for Future Use in Periodontal Regeneration
Nurulhuda Mohd / *Department of Restorative Dentistry, Faculty of Dentistry, Universiti Kebangsaan Malaysia, Kuala Lumpur 50300, Malaysia, Malaysia*

Oral Presenter 4 09:00 OS2-8-4
Metal-ion doped bioceramic reinforced PEEK: An FDM-friendly feedstock material for customized fabrication of bone implants
Justy N Francis / *Medical Technology, Smart Health Care, Inter-disciplinary Research Platform, Indian Institute of Technology, Jodhpur, India*

Oral Presenter 5 09:10 OS2-8-5
Sustainable additive manufacturing of biodegradable iron-eggshell composite scaffolds for bone regeneration and prevention of biomaterials-associated infections
Niko Eka Putra / *Department of Biomechanical Engineering, Faculty of Mechanical Engineering, Delft University of Technology, Mekelweg 2, 2628 CD Delft, Netherlands*

Oral Session 2 (OS2-9)

08:30~09:30 Room 314

Biomaterials tissue regeneration 2

Chair Robert Kapsa / *RMIT University, Australia*

Oral Presenter 1 08:30 OS2-9-1
BIOFABRICATION and Tissue Engineering (BiTE) Functional Muscle.
Robert Kapsa / *RMIT University, Australia*

Oral Presenter 2 08:40 OS2-9-2
Early intervention for traumatic bone injury using a novel self-adhesive biomaterial that facilitates a local delivery of active compounds
Miruna Chipara / *University of Birmingham, United Kingdom*

Oral Presenter 3 08:50 OS2-9-3
Computational model and physical validation of inflatable soft load-bearing elastomeric implant for knee osteoarthritis
Karl Galea Naudi Borg / *University of Malta, Malta*

Oral Presenter 4 09:00 OS2-9-4
Biocompatibility Study of the Ti6Al4V Alloys Heat-Treated for Medical Applications
Mercedes Paulina Chávez Díaz / *Centro de Estudios Científicos y Tecnológicos No. 7 del Instituto Politécnico Nacional, Mexico*

Oral Presenter 5 09:10 OS2-9-5
Bio-Xolography: fast and high resolution volumetric 3D bioprinting of large engineered tissues
Alexis Wolfel / *University of Twente, Netherlands*

Oral Presenter 6 09:20 OS2-9-6
Engineering self-assembled peptide hydrogel scaffolds for the osteochondral interface
Aaqil Rifai / *Deakin University, Australia*

Oral Session 2 (OS2-10)

08:30~09:30 Room 321-A

Recent Advances in biomaterial Science and Engineering 2

Chair Sylwester Domanski / *Polbionica, Ltd., Poland*

Qingchuan Wang / *Institute of Metal Research, Chinese Academy of Sciences, China*

Oral Presenter 1 08:30 OS2-10-1
Revealing the potential of Nuclear Magnetic Resonance in characterization and sustainable development of biomaterials
Sylwester Domanski / *Polbionica, Ltd., Poland*

Oral Presenter 2 08:40 OS2-10-2
A novel biodegradable high nitrogen iron alloy
Qingchuan Wang / *Institute of Metal Research, Chinese Academy of Sciences, China*

Oral Presenter 3 08:50 OS2-10-3
Antimicrobial and antioxidant chitosan-polyvinyl alcohol hydrogel hernia mesh loaded with S-nitroso-N acetyl-DL-penicillamine
Ziyu Wang / *Wilson College of Textiles, North Carolina State University, Raleigh, USA*

Oral Presenter 4 09:00 OS2-10-4
Exploring tannic acid-mediated protein interactions on titanium surfaces
Enrique Oreja Remartinez / *University of Oslo, Norway*

Oral Presenter 5 09:10 OS2-10-5
Development of a prodrug to increase the intracellular ATP levels
Takahisa Anada / *Kyushu University, Japan*

Oral Session 2 (OS2-11)

08:30~09:30 Room 321-B

Biomaterials for organoids and organ models 2

Chair Yoonhee Jin / *Yonsei University, Korea, Republic of*

Sara Pedron-Haba / *University of Illinois Urbana-Champaign, USA*

Oral Presenter 1 08:30 OS2-11-1
Identification of the role of tumor-produced hyaluronan to enhance therapeutic interventions in glioblastoma
Sara Pedron-Haba / *University of Illinois Urbana-Champaign, USA*

Oral Presenter 2 08:40 OS2-11-2
Vascular Microphysiological systems for Organ Preservation Study Testbed
Yongdeok Kim / *University of California, Berkeley, USA*

Oral Presenter 3 08:50 OS2-11-3
Photothrombosis-on-a-Chip for Site-Specific Thrombus Formation
Kuan-Ting Liu / *Department of Chemical Engineering, National Taiwan University, Chinese Taipei*

Oral Presenter 4 09:00 OS2-11-4
Growth factor patterning into fusing microtissues: 3D bioprinting of spatiotemporal cues for cell spheroid and organoid based tissue engineering
Josephine Wu / *Trinity College Dublin, Ireland*

Oral Presenter 5 09:10 OS2-11-5
A Dynamic Perfusion-Based 3D Bio-Printed *In Vitro* Osteosarcoma Model for Anticancer Drug Screening Application
CHITRA JAISWAL / *Biomaterials and Tissue Engineering Laboratory, Department of Biosciences and Bioengineering, Indian Institute of Technology Guwahati, Guwahati-781039, Assam, India., India*

Oral Session 2 (OS2-12)

08:30~09:30 Room 320-A

Dental & Craniofacial biomaterials 2

Chair Shereen Azer / *The Ohio State University College of Dentistry, USA*

Capucine Guyot / *McGill University, Canada*

Oral Presenter 1 08:30 OS2-12-1
Advancing caries therapy: insights from X-ray microbeam diffraction on SDF and GIC combination for tooth structure restoration
Xuefei Chen / *Department of Cariology and Operative Dentistry, Tokyo Medical and Dental University, Japan*

Oral Presenter 2 08:40 OS2-12-2
Material characterization of human tooth crowns
Shereen Azer / *The Ohio State University College of Dentistry, USA*

Oral Presenter 3 08:50 OS2-12-3
Surface reduction and sol-gel silica coating to improve tissue integration of poly(etheretherketone) (PEEK) implants
Capucine Guyot / *McGill University, Canada*

Oral Presenter 4 09:00 OS2-12-4
Silicon containing bioceramics for tissue regeneration
Chen Yang / *University of Chinese Academy of Sciences, china*

Oral Session 2 (OS2-13)

08:30~09:30 Room 320-B

Fabrication of biomaterials with bioindustrial applicability

Chair: Daniil Parshin / *Lavrentyev Institute of Hydrodynamics SB RAS, Russia*

Kihak Gwon / *Department of Physiology and Biomedical Engineering, Mayo Clinic, Rochester, USA*

Oral Presenter 1 — 08:30 — OS2-13-1
Guiding stem cell fate decisions in bioactive microcapsules by multi-step loading and release of growth factors
Kihak Gwon / *Department of Physiology and Biomedical Engineering, Mayo Clinic, Rochester, USA*

Oral Presenter 2 — 08:40 — OS2-13-2
Metal-phenolic Network Coatings for Suppressing Phototoxicity of Titanium Dioxide
Saehan Choi / *Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of*

Oral Presenter 3 — 08:50 — OS2-13-3
Viscoelastic characteristics of vascular tissues: from experiment to understanding the differences in their mechanics
Daniil Parshin / *Lavrentyev Institute of Hydrodynamics SB RAS, Russia*

Oral Presenter 4 — 09:00 — OS2-13-4
Thermo-/photo- responsive bioink for improved printability in extrusion-based bioprinting
Seo Hyung Moon / *Inha University, Korea, Republic of*

Oral Session 2 (OS2-14)

08:30~09:30 Room 315

Recent Advances in biomaterial Science and Engineering 3

Chair: Wooram Um / *Pukyong National University, Korea, Republic of*

Aleksandra Serafin / *University of Limerick, Ireland*

Oral Presenter 1 — 08:30 — OS2-14-1
Assessing biomaterial-induced extracorporeal circuit thrombosis on-a-chip, under customisable material-flow combinations
Tiffany Goh / *School of Medical Sciences, Faculty of Medicine and Health, The University of Sydney, NSW 2006, Australia, Australia*

Oral Presenter 2 — 08:40 — OS2-14-2
Analysis of *in vitro* and *in vivo* skin wound healing efficacy of crosslinked electrospun chitosan-gelatin-elastin membranes
Alex Bryan / *The University of Memphis, USA*

Oral Presenter 3 — 08:50 — OS2-14-3
Electroconductive biomaterial scaffolds for spinal cord injury repair
Aleksandra Serafin / *University of Limerick, Ireland*

Oral Presenter 4 — 09:00 — OS2-14-4
Multifactorial bioengineering to control cell fate
Alexandre Watigny / *University College Dublin, Ireland*

Oral Presenter 5 — 09:10 — OS2-14-5
ROS scavenging ultrasonicated graphene oxide/alginate microgel for mesenchymal stem cell delivery and hindlimb ischemia therapy
Seungjun Lee / *Gwangju Institute of Science and Technology, Korea, Republic of*

Concurrent Symposium 7 (S7-1)

09:30~11:00 Room 325-AB

Electrically conductive polymers for bioelectrode applications

Organizer: Jae Young Lee / *Gwangju Institute of Science and Technology, Korea, Republic of*

Chair: Jae Young Lee / *Gwangju Institute of Science and Technology, Korea, Republic of*

Elisa Castagnola / *Louisiana Tech University, USA*

Keynote Speaker — 09:30 — S7-1-1
Conducting Polymers and Biomaterial Strategies Towards Seamless Neural Tissue-Device Interface
Tracy X. Cui / *University of Pittsburgh, USA*

Invited Speaker — 09:55 — S7-1-2
Integration of poly(3,4-ethylenedioxythiophene)/carbon nanotube (PEDOT/CNT) coating on flexible implantable neural devices to achieve multimodality and implant stability
Elisa Castagnola / *Louisiana Tech University, USA*

10:10 — S7-1-3
Why do we still need better electrode materials for bioelectronic medicine?
Maria Asplund / *Chalmers University of Technology, Sweden*

Oral Presenter — 10:25 — S7-1-4
Electrically induced shape memory hydrogels and their biomedical application
Georgios Mikalef / *University of Birmingham, United Kingdom*

10:35 — S7-1-5
A multimodal approach with magnetic and piezoelectric activation in injectable hydrogel therapy for functional skeletal muscle regeneration
Silvia Panseri / *National Research Council of Italy, Italy*

10:45 — S7-1-6
Magnetoelectric nanoelectrodes for wireless neuronal modulation
Kozielski Kristen / *Technical University of Munich, Germany*

Concurrent Symposium 7 (S7-2)

09:30~11:00 Room 325-CD

Micro/nano-patterning

Organizer: Dong Sung Kim / *POSTECH, Korea, Republic of*

Chair: Dong Sung Kim / *POSTECH, Korea, Republic of*

Jennifer H. Shin / *KAIST, Korea, Republic of*

Keynote Speaker — 09:30 — S7-2-1
Hair regenerative medicine using tissue engineering approaches
Junji Fukuda / *Yokohama National University (YNU), Japan*

Invited Speaker — 09:55 — S7-2-2
Role of ECM Microstructures in the Dynamics of the Tumor Microenvironment
Jennifer H. Shin / *KAIST, Korea, Republic of*

10:10 — S7-2-3
Understanding matrix remodeling-directed lineage specification through microfluidic encapsulation of single stem cells
Jae-Won Shin / *University of Illinois at Chicago, USA*

Oral Presenter — 10:25 — S7-2-4
Shape-specific microcomposites induce osteogenic differentiation in bottom-up engineered microtissue
Ke Song / *Maastricht University, Netherlands*

10:35 — S7-2-5
Vanillin-based functionalization strategy to construct multifunctional microspheres for treating inflammation and regenerating intervertebral disc
Zhuang Zhu / *Soochow University, China*

10:45 — S7-2-6
***In situ* culture of the unculturable human gastrointestinal bacteria**
Sydney Wheatley / *École de technologie supérieure & University of Montreal Hospital Research Center, Canada*

Concurrent Symposium 7 (S7-3)

09:30~11:00 Room 324-A

Biomaterials for Biomedical Imaging: Applications and Challenges

Organizer Hua Ai / *West China Hospital, Sichuan University, China*

Chair Yanglong Hou / *College of Engineering, Peking University, China*

Brent Weinberg / *Emory University School of Medicine, USA*

Keynote Speaker
09:30 S7-3-1
Iron Based Nanomaterials for Medical Theranostics of Cardiovascular Diseases
Ning Gu / *Nanjing University, China*

Invited Speaker
09:55 S7-3-2
Ultrasound Contrast Nanoparticles and Their Diagnosis and Treatment in Chronic Diseases
Aiguo Wu / *Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, China*

10:10 S7-3-3
Strategies to Promote Cancer Nanomedicine Clinical Translation
Twan Lammers / *RWTH Aachen University Clinic, Germany*

10:25 S7-3-4
Challenges and opportunities in MRI contrast agents
Brent Weinberg / *Emory University School of Medicine, USA*

10:40 S7-3-5
MRI nanoprobes: design considerations and biological responses
Hua Ai / *West China Hospital, Sichuan University, China*

Concurrent Symposium 7 (S7-4)

09:30~11:00 Room 324-B

Soft tissue regeneration

Organizer Ji-Ung Park / *Seoul National University College of Medicine, Korea, Republic of*

Chair Ji-Ung Park / *Seoul National University College of Medicine, Korea, Republic of*

Su Ryon Shin / *Harvard Medical School, USA*

Keynote Speaker
09:30 S7-4-1
Engineering nano-biomaterials for tissue fabrication and regenerative medicine
Su Ryon Shin / *Harvard Medical School, USA*

Invited Speaker
09:55 S7-4-2
Deciphering the Complexity of Tissue Repair: 3D Models, Fibrosis, and Beyond
Jiranuwat Sapudom / *New York University Abu Dhabi, United Arab Emirates*

Oral Presenter
10:10 S7-4-3
Light-activated adipose tissue grafts for soft tissue reconstruction
Khoon Lim / *University of Sydney, Australia*

10:20 S7-4-4
Establishment of a clinical application technique for breast reconstruction using in vitro vascularized 3D adipose tissue:injectable prevascularized adipose tissues (iPAT)
Yoshihiro Sowa / *Department of Plastic Surgery, Jichi Medical University, Japan*

10:30 S7-4-5
Spider silk as potential biomaterial for a biological annular closure device after disc herniation
Janin Reifenrath / *Hannover Medical School, Clinic for Orthopedic Surgery, Germany*

10:40 S7-4-6
Reproducible preparation of transplantable hepatic tissue sheets using thermoresponsive surfaces
Jun Kobayashi / *Tokyo Women's Medical University, Japan*

Concurrent Symposium 7 (S7-5)

09:30~11:00 Room 323

Biomaterials for polymeric therapeutics

Organizer Hye Sung Kim / *Dankook University, Korea, Republic of*

Chair Hyuk Sang Yoo / *Kangwon National University, Korea, Republic of*

Sing Yian Chew / *Nanyang Technological University, Singapore*

Keynote Speaker
09:30 S7-5-1
Nonviral and viral vectors for in vivo gene editing
Kam W. Leong / *Columbia University, USA*

Invited Speaker
09:55 S7-5-2
Nano-Therapeutics with Adaptive Morphological Changes for Enhanced Treatment
Hyuk Sang Yoo / *Kangwon National University, Korea, Republic of*

10:10 S7-5-3
Synthesis of polypeptide for drug delivery application
Jianjun Cheng / *Westlake University, China*

Oral Presenter
10:25 S7-5-4
In vitro and in vivo evaluation of a gentamycin-vancomycin loaded emulsion-based hydrogel for orthopedic device-related infection
Pamela Nylund / *AO Research Institute, Davos, Switzerland*

10:35 S7-5-5
Dual stimuli activation for tougher diazirine-grafted polycaprolactone bioadhesive
Elwin Ang / *School of Materials Science and Engineering, Nanyang Technological University, Singapore*

Concurrent Symposium 7 (S7-6)

09:30~11:00 Room 322

Marine biomaterials towards tissue engineering

Organizer Hyung Joon Cha / *Pohang University of Science and Technology, Korea, Republic of*

Chair Hyung Joon Cha / *Pohang University of Science and Technology, Korea, Republic of*

Tiago H. Silva / *University of Minho, Portugal*

Keynote Speaker
09:30 S7-6-1
Innovative marine adhesive platform biomaterial for effective tissue regeneration
Hyung Joon Cha / *Pohang University of Science and Technology, Korea, Republic of*

Invited Speaker
09:55 S7-6-2
Marine Inspired Biomaterials as enabling tools for different Advanced Therapies
Tiago H. Silva / *University of Minho, Portugal*

10:10 S7-6-3
Sutureless Bioelectronics Integrated with Tissue-adhesive Hydrogel Biointerfaces Inspired by Marine Mussels
Mikyung Shin / *Sungkyunkwan University, Korea, Republic of*

Oral Presenter
10:25 S7-6-4
Marine Shells Biomaterials
Jingdi Chen / *Shandong University, China*

10:35 S7-6-5
From the Depths of the Sea to The Skin: Advancing Wound Healing through a Tough and Print-Friendly Marine Hydrogel
Hafez Jafari / *Polymer Chemistry and Biomaterials Group, Department of Organic and Macromolecular Chemistry, CMAC - Centre of Macromolecular Chemistry, Ghent University, Krijgslaan 281, 9000 Ghent, Belgium, Belgium*

10:45 S7-6-6
Cationic complexes of chelated nanohydroxyapatite modulate alveolar bone regeneratio
Peilei Wang / *Sichuan university, China*

Concurrent Symposium 7 (S7-7)

09:30~11:00 Room 306-A

Self-assembling polymeric biomaterials for healthcare

Organizer João Borges / *University of Aveiro, Portugal*

Chair João Borges / *University of Aveiro, Portugal*

Jeroen Leijten / *University of Twente, Netherlands*

Keynote Speaker
09:30 S7-7-1
Biofunctional supramolecular polymeric biomaterials and their interaction with living systems
João Borges / *CICECO - Aveiro Institute of Materials, University of Aveiro, Portugal*

Invited Speaker
09:55 S7-7-2
Glycopolymers for the delivery of drugs
Martina Stenzel / *University of New South Wales, Australia*

10:10 S7-7-3
Hydrogels of Brain-Derived Decellularized Extracellular Matrices for 3D Astrocyte Culture
Insung Choi / *KAIST, Korea, Republic of*

10:25 S7-7-4
Biomimetic materials presenting extracellular matrix components to study bone morphogenetic protein bioactivity
Elisa Migliorini / *CEA, France*

Oral Presenter
10:40 S7-7-5
Self-assembling hydrogels with tunable stiffness instruct tumour cell phenotypes and therapy resistance in pancreatic cancer model
Babatunde Okesola / *University of Nottingham, United Kingdom*

10:50 S7-7-6
Surface-assembled optoelectronic assemblies for directing electrogenic tissue anisotropy
Herdeline Ann Ardoña / *University of California, Irvine, USA*

Concurrent Symposium 7 (S7-8)

09:30~11:00 Room 306-B

Thermo responsive hydrogels and their biomedical applications

Organizer Byeongmoon Jeong / *Ewha Womans University, Korea, Republic of*

Chair Kang Moo Huh / *Chung-Nam University, Korea, Republic of*

Younsoo Kim / *Younsoo Kim, Korea, Republic of*

Keynote Speaker
09:30 S7-8-1
Block copolymer thermogel for medical applications
Jiandong Ding / *Fudan University, China*

Invited Speaker
09:55 S7-8-2
Development of functional hydrogels of imidazolium-based zwitterionic polymers for bioelectronics
Younsoo Kim / *POSTECH, Korea, Republic of*

10:10 S7-8-3
Thermogels as cell storage and drug screening platforms
Byeongmoon Jeong / *Ewha Womans University, Korea, Republic of*

Oral Presenter
10:25 S7-8-4
Thermosensitive chitosan-grafted-fibronectin for injectable bioactive macroporous cell-laden hydrogels
Pierre Marquaille / *Molecular, Macromolecular Chemistry and Materials, C3M, ESPCI Paris PSL, France*

10:35 S7-8-5
Biomedical Tubes of Hydrogels
Lidong Zhang / *East China Normal University, China*

10:45 S7-8-6
Injectable dopamine-alginate/pluronic based hydrogel reinforced by peroxidase mimicking bioglass for bone regeneratio
Le Hang Dang / *Vietnam Academy of Science and Technologym, Vietnam*

Concurrent Symposium 7 (S7-9)

09:30~11:00 Room 314

Functional nanomaterials for tissue engineering

Organizer Anderson Oliveira Lobo / *Federal University of Piauí, Brazil*

Chair Thomas Jay Webster / *Interstellar Therapeutics, USA*

Keynote Speaker
09:30 S7-9-1
3D Bioprinting for Tissue Fabrication
Y. Shrike Zhang / *Harvard Medical School, USA*

Invited Speaker
09:55 S7-9-2
Introducing nanoporous metallic membranes for improved stem cell delivery and function: A collection of in vitro and in vivo studies
Thomas Jay Webster / *Interstellar Therapeutics, USA*

10:10 S7-9-3
Nanotechnology in Dentistry: SPIONs Coated Chitosan Hydrochloride for Improved Therapeutic Delivery
Rodrigo França / *University of Manitoba, Canada*

Oral Presenter
10:25 S7-9-4
Regulation of human mesenchymal stem cells by surface-carboxylated cellulose nanofiber scaffolds
Mayumi Hatakeyama / *Kyushu University, Japan*

10:35 S7-9-5
Liquid capsules: A versatile tool for tissue engineering strategies
Sara Nadine / *CICECO - Aveiro Institute of Materials, University of Aveiro, Portugal*

10:45 S7-9-6
Development of a Hybrid Acellular Biological and Electrospun Synthetic Vascular Conduit for Haemodialysis
BESHAIR ALSAFFAR / *University College London (UCL) and King Abdulaziz City for Science and Technology (KACST), United Kingdom*

Concurrent Symposium 7 (S7-10)

09:30~11:00 Room 321-A

Bioinspired antimicrobial and hemocompatible materials

Organizer Elizabeth Brisbois / *University of Georgia, USA*

Chair Elizabeth Brisbois / *University of Georgia, USA*

Hitesh Handa / *University of Georgia, USA*

Keynote Speaker
09:30 S7-10-1
Combinatorial approaches for improved biocompatibility
Christopher Siedlecki / *Penn State University, USA*

Invited Speaker
09:55 S7-10-2
Bioinspired endothelium-mimicking surface for blood-contacting medical devices
Hitesh Handa / *University of Georgia, USA*

Oral Presenter
10:10 S7-10-3
Photoactive nitric oxide release for enhanced antimicrobial biointerfaces
Elizabeth Brisbois / *University of Georgia, USA*

10:20 S7-10-4
An *in vivo* imaging model to study the cellular foreign body response and infection resistance of novel implant coatings
Elles Boonstra / *UMCG, Netherlands*

10:30 S7-10-5
Polypyrrole-based conductive fibers and textiles for biomedical applications
Jifu Mao / *Donghua University, China*

10:40 S7-10-6
Platelet membrane coated Cu-based layered double hydroxide nanoparticles as an endothelial nitric oxide synthase mimic for atherosclerosis treatment
Jiawei Cui / *Southwest Jiaotong university, China*

10:50 S7-10-7
A mechanically resilient and tissue-conformable hydrogel with hemostatic and antibacterial capabilities for wound care
Tae Young Kim / *School of Electrical and Electronic Engineering, Yonsei university, Korea, Republic of*

Concurrent Symposium 7 (S7-11)

09:30~11:00 Room 321-B

Optical biosensors for fast and accurate diagnosis

Organizer Heebeom Koo / *The Catholic University of Korea, Korea, Republic of*

Chair Heebeom Koo / *The Catholic University of Korea,Korea, Republic of*

Joonhyuck Park / *The Catholic University of Korea, Korea, Republic of*

Keynote Speaker
09:30 S7-11-1
FRET biosensors for multiplexed clinical diagnostics
Niko Hildebrandt / *McMaster University, Canada*

Invited Speaker
09:55 S7-11-2
Engineering cells with nanomaterials for augmenting and tracking cell-based therapies
Jinhwan Kim / *UC Davis, USA*

Oral Presenter
10:10 S7-11-3
Nanomaterial based ultrasensitive bioimaging and biosensor platforms
Joonhyuck Park / *The Catholic University of Korea, Korea, Republic of*

10:20 S7-11-4
***In vitro* tissue-equivalent models for studying foreign body reaction**
Liliana Agresti / *University Medical Center Groningen (UMCG), Netherlands*

10:30 S7-11-5
Hydrogel-Based 3D In Vitro Model of Liver Toxicity with Simulated Human Immune System for Predicting Hepatotoxicity and Immune Hyperactivity
Yu Bin Lee / *Korea Institute of Toxicology, Korea, Republic of*

10:40 S7-11-6
Ultrasensitive Paper-based Surface-Enhanced Raman Spectroscopy for Clinical Applications
DEHUI WAN / *National Tsing Hua University, Chinese Taipei*

Concurrent Symposium 7 (S7-12)

09:30~11:00 Room 320-A

Clinical application of biomaterials in Orthopaedic field

Organizer Ji-Hoon Bae / *Department of Orthopaedic Surgery, Korea University Guro Hospital, Korea, Republic of*

Chair Hyung Bin Park / *Gyeongsang National University ,Korea, Republic of*

Hongsik Cho / *1) Dept. of Orthopaedic Surgery, UTHSC-Campbell Clinic 2) VA Medical Center, USA*

Keynote Speaker
09:30 S7-12-1
Biological intervention strategy for post-traumatic osteoarthritis (PTOA)
Hongsik Cho / *1) Dept. of Orthopaedic Surgery, UTHSC-Campbell Clinic 2) VA Medical Center, USA*

Invited Speaker
09:55 S7-12-2
Development of Scaffold-free Three-dimensional Tendon Construct Using Mouse Tendon Cells
Kyu Sang Joeng / *McKay Orthopaedic Research Laboratory, Department of Orthopaedic Surgery, Perelman School of Medicine, University of Pennsylvania, USA*

10:10 S7-12-3
Clinical Application of Polydeoxyribonucleotide for Shoulder and Elbow Diseases
Jung-Taek Hwang / *Department of Orthopedic Surgery, Cuncheon Sacred Heart Hospital, Hallym University Medical College, Korea, Republic of*

Oral Presenter
10:25 S7-12-4
Mechanical properties and bone regeneration ability of additively manufactured trabecular porous tantalum scaffolds
Jiaxiang Wang / *Qingdao University of Technology, China*

10:35 S7-12-5
***In vivo* studies of an innovative 3D printed device for articular cartilage regeneration**
Xinyu Li / *Imperial College London, United Kingdom*

Concurrent Symposium 7 (S7-13)

09:30~11:00 Room 320-B

Biodegradable Metals for Medical Devices

Organizer Diego Mantovani / *Laval University, Canada*

Chair Yufeng Zheng / *Peking University, China*

Diego Mantovani / *Laval University, Canada*

Keynote Speaker
09:30 S7-13-1
Biodegradable metals advance into clinical applications
Frank Witte / *Berlin Charite Research Center - Dental School, Germany*

Invited Speaker
09:55 S7-13-2
Synthesis of Inorganic nanomaterials for Soft Bioelectronics
SangIhn Han / *Center for Biomaterials, Biomedical Research Division, Korea Institute of Science and Technology, Korea, Republic of*

10:10 S7-13-3
***In vitro* and in vivo assessment of biodegradable metals**
Regine Willumeit-Romer / *Helmholtz-Zentrum Hereon GmbH, Germany*

Oral Presenter
10:25 S7-13-4
Bio-integrative Fixation Implants: Post-Market Clinical Evaluation of 9,851 Cases
Orahn Preiss-Bloom / *OSSIO Ltd, Israel*

10:35 S7-13-5
HEALING OF BONE, AND ENHANCED JOINT FIXATION, WITH A NOVEL ADHESIVE, PHOSPHOSERINE CALCIUM PHOSPHATE, IN-VIVO & EX-VIVO
Philip Procter / *Uppsala University, Department of Materials Science and Engineering, France*

10:45 S7-13-6
In vivo studies of additive manufactured bioabsorbable magnesium/zinc scaffolds
Donghui Zhu / *Stony Brook University, USA*

Concurrent Symposium 7 (S7-14)

09:30~11:00 Room 315

Biomaterials for immunoisolation

Organizer Nathaniel Hwang / *Seoul National University, Korea, Republic of*

Chair Nathaniel Hwang / *Seoul National University, Korea, Republic of*

Minglin Ma / *Cornell University, USA*

Keynote Speaker
09:30 S7-14-1
Delivering insulin-producing cells without immunosuppression
Minglin Ma / *Cornell University, USA*

Invited Speaker
09:55 S7-14-2
Nathaniel Hwang / *Seoul National University, Korea, Republic of*

Oral Presenter
10:10 S7-14-3
MRI contrast-enhanced alginate formulation for efficient surgical explantation of beta cell-containing islets in diabetes therapy
Marc-Andre Fortin / *CR-CHU de Québec - Université Laval, Canada*

10:20 S7-14-4
Human stem cell-derived β-cells delivered with vasculogenic hydrogels reverse hyperglycemia in diabetic immunodeficient mice
Sophia Kioulaphides / *Georgia Institute of Technology, USA*

10:30 S7-14-5
Porous Microwell Scaffolds for 3D Culture of Pancreatic Beta Cells to Promote Cell Aggregation and Insulin Secretion
Tianjiao Zeng / *Research Center for Macromolecules and Biomaterials, National Institute for Materials Science, Tsukuba, Japan; Graduate School of Science and Technology, University of Tsukuba, Tsukuba, Japan*

10:40 S7-14-6
Photo-responsive 3D hydrogel platform promotes vascularization for islet transplantation
Martha Fowler / *Rice University, USA*

11:00~11:20

Coffee Break

11:20~12:10 Convention Hall, 5F

Plenary Lecture 4

Chairs Shengmin Zhang / *Huazhong University of Science and Technology, China*

Diego Mantovani / *Laval University, Canada*

Plenary Speaker
11:20 PL4
Research and development of metallic biomaterials: central player of medical devices
Takao Hanawa / *Tokyo Medical and Dental University, Japan*

12:10~13:40

Lunch

Affiliated Meeting 3

Room 320-B 12:10 ~ 13:30 AF3-2
Society For Biomaterials & Artificial Organs (India) Meeting (by invitation only)

Room 505 12:10 ~ 13:40 AF3-3
Editorial Board Meeting of Regenerative Biomaterials (by invitation only)

Room 504 12:10 ~ 13:40 AF3-4
Society For Biomaterials (US) Annual Business Meeting

Lunch & Luncheon Seminar 2 (LS2-1)

12:20~13:10 Room 325-AB

Company Seminar (GENOSS)

Speaker 12:20 LS2-1-1
Genoss : an innovating company with a variety of advanced medical devices
In Kwon Jung / *Genoss Co., Ltd., Korea, Republic of*

Lunch & Luncheon Seminar 2 (LS2-2)

12:20~13:10 Room 325-CD

Company Seminar (Rousselot / Readily3D)

Speaker 12:20 LS2-2-1
Innovative Tissue Sealants: Advancing Scarless Wound Treatment with X-Pure GelMA
Ju Young Park / *BioBricks Co.,Ltd., Korea, Republic of*

12:45 LS2-2-2
3D volumetric tomographic bioprinting
Paul Delrot / *Readily3D, Switzerland*

Lunch & Luncheon Seminar 2 (LS2-3)

12:20~13:30 Room 324-A

Biomaterials Education Symposium at the WBC 2024

Organizer Jurica Bauer / *Maastricht University, Netherlands*

Chair Jurica Bauer / *Maastricht University, Netherlands*

The University of Sydney / *nThe University of Sydney, Australia*

Keynote Speaker (25 min) 12:20 LS2-3-1
Undergraduate and graduate training in biomaterials within a BME curriculum
Johnna S. Temenoff / *Georgia Tech and Emory University, USA*

Invited Speaker (15 min) 12:45 LS2-3-2
Teaching biomaterials in a new multidisciplinary bachelor "Regenerative Medicine and Technology"
Jurica Bauer / *Maastricht University, Netherlands*

13:00 LS2-3-3
Effectively engaging the next generation of biomedical engineers in biomaterials through innovative learning activities and assessment design
Young Jung No / *The University of Sydney, Australia*

13:15 LS2-3-4
Integrating Engineering Principles into Biotechnology Education Through Biomaterials and Biomedical Engineering
Jeong-Kee Yoon / *Chung-Ang University, Korea, Republic of*

Lunch & Luncheon Seminar 2 (LS2-4)

12:20~13:20 Room 323

Young Scientist Forum (YSF) II: The past, present, and future of Biomaterials Research (meeting mentors)

Organizer Seung-Woo Cho / *Yonsei University, Korea, Republic of*

Chair Hua Ai / *West China Hospital, Sichuan University, China*

Nicholas Dunne / *Dublin City University, Ireland*

Speaker 12:20 LS2-4-1
CRITICAL TURNING POINTS IN BIOMATERIALS RESEARCH FROM 1980 TO TODAY
Joachim Kohn / *Rutgers University/IUSBSE, USA*

12:35 LS2-4-2
Futuring Neurosciences with Biomaterials
Ana Paula Pego / *i3S / INEB - University of Porto, Portugal*

12:50 LS2-4-3
A Career in Research: Still Opportune? An introspective journey into the meaning of becoming a scientist in the 21th century
Diego Mantovani / *Laval University, Canada*

Panel Discussion (15 min) 13:05 -

Lunch & Luncheon Seminar 2 (LS2-5)

12:20~13:40 Room 322

Bridging the gap between preclinical and clinical research

Organizer Sukmo Kang / *Biotoxtech.Co.Ltd, Korea, Republic of*

Chair Sukmo Kang / *Biotoxtech.Co.Ltd, Korea, Republic of*

Speaker (20 min) 12:20 LS2-5-1
Process and analytical development for nanomedicine manufacturing
Mark van Eldijk / *Ardena Oss BV, Netherlands*

12:40 LS2-5-2
Clinical Development of Nanoparticle-Based Contrast Agents
Kyung Won Kim / *Department of Radiology, University of Ulsan College of Medicine, Asan Medical Center, Korea, Republic of*

13:00 LS2-5-3
Consideration and Preparation for Non-clinical study of nanomedicine
Sukmo Kang / *Biotoxtech.Co.Ltd, Korea, Republic of*

13:20 LS2-5-4
Strategy for the Oral Formulation of Biomaterials to Apply in Clinics
Seho Kweon / *College of Pharmacy, Chonnam National University, Korea, Republic of*

Lunch & Luncheon Seminar 2 (LS2-6)

12:20~13:30 Room 306-A

New PI in Biomaterials Research

Organizer Brittany Taylor / *University of Florida, USA*

Chair Brittany Taylor / *University of Florida, USA*

Erika Moore / *University of Maryland, USA*

Speaker (12 min)

12:20 LS2-6-1
Chiara Ghezzi / *Department of Biomedical Engineering, University of Massachusetts Lowell, USA*

12:32 LS2-6-2
Jay Patel / *Department of Orthopaedics, Emory University School of Medicine, USA*

12:44 LS2-6-3
Bethany Almeida / *Chemical and Biomolecular Engineering, Clarkson University, USA*

Panel Discussion (34 min) 12:56 -

Concurrent Symposium 8 (S8-1)

13:40~15:10 Room 325-AB

Engineering regenerative biomaterials through bioinspired and biocooperative approaches

Organizer Tiziano Serra / *AO Research Institute Davos, Switzerland*

Chair Matteo D'Este / *AO Research Institute Davos, Switzerland*

Keynote Speaker 13:40 S8-1-1
Biocooperative approaches to engineer biomaterials with enhanced complexity and functionality
Alvaro Mata / *Nottingham University, United Kingdom*

Invited Speaker 14:05 S8-1-2
Novel Fibrous Biomaterials: Nano-Hybridization and Biomimetic Fabrication
Meifang Zhu / *Donghua University, China*

Oral Presenter 14:20 S8-1-3
Novel Ti-10Mo-Mn system alloys for biomedical applications
Carlos Roberto Grandini / *UNESP - Univ Estadual Paulista, Faculdade de Ciências, Laboratório de Anelasticidade e Biomateriais, 17.033-360, Bauru, SP, Brazil, Brazil*

14:30 S8-1-4
On the communication between nuclei and mitochondria in a hydrogel environment
Cathrine Abild Meyer / *Aarhus University, Denmark*

14:40 S8-1-5
A bilayer membrane containing intrafibrillarly mineralized collagen and pure zinc enhanced bone regeneration
Dandan Xia / *Peking University School and Hospital of Stomatology, China*

Concurrent Symposium 8 (S8-2)

13:40~15:10 Room 325-CD

Biofabrication in Suspensions Media for Tissue Engineering and In Vitro Modeling

Organizer Manuela Gomes / *3B's Research Group, University of Minho, Portugal*

Chair Manuela Gomes / *3B's Research Group, University of Minho, Portugal*

Andrew Daly / *National University of Ireland Galway, Ireland*

Keynote Speaker 13:40 S8-2-1
Advances in suspension bath printing to control the organization of cells and materials
Jason Burdick / *University of Colorado Boulder, USA*

Invited Speaker 14:05 S8-2-2
Biomanufacturing *in vitro* tendon microenvironments in suspension
Rui M. A. Domingues / *3B's Research Group, University of Minho, Portugal*

14:20 S8-2-3
Bioprinting models of early organ morphogenesis using cell-responsive hydrogels
Andrew Daly / *National University of Ireland Galway, Ireland*

Oral Presenter 14:35 S8-2-4
Enhanced angiogenic response of bioprinted vessel-like structures enriched with platelet rich plasma
Maria Chatzinikolaidou / *University of Crete, Greece*

14:45 S8-2-5
Support baths to float your boat: 3D printing of low-viscosity PEG/graphene oxide inks to engineer vascular grafts
Helena Ferreira / *i3S – Instituto de Investigação e Inovação em Saúde, Universidade do Porto/ INEB – Instituto de Engenharia Biomédica, Universidade do Porto, Rua Alfredo Allen 208, 4200-135 Porto, Portugal; ICBAS – Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, Rua Jorge de Viterbo Ferreira 228, 4050-313 Porto, Portugal, Portugal*

14:55 S8-2-6
Hydrogel microfibers as a granular material and its application as an ink or support bath in bioprinting
Chris Highley / *University of Virginia, USA*

Concurrent Symposium 8 (S8-3)

13:40~15:10 Room 324-A

Biomaterials for Image-guided Therapy

Organizer Wooram Park / *Sungkyunkwan University, Korea, Republic of*

Chair Wooram Park / *Sungkyunkwan University, Korea, Republic of*

Tae-Hyung Kim / *Chung-Ang University, Korea, Republic of*

Keynote Speaker 13:40 S8-3-1
Theranostic carriers for image guided nano-immuno cancer therapy
Dong-Hyun Kim / *Northwestern University, USA*

14:05 S8-3-2
Dynamic Nano-Assemblies for Biological Sensing, Imaging and Regulation
Daishun Ling / *Shanghai Jiao Tong University, China*

Invited Speaker 14:30 S8-3-3
Ion-responsive Nano-probe
Fang Yuan Li / *Zhejiang University, China*

14:45 S8-3-4
***In situ* Cancer Immunization Utilizing a Synergistic Approach of Irreversible Electroporation and Immunostimulatory Nanoparticles**
Wooram Park / *Sungkyunkwan University, Korea, Republic of*

Concurrent Symposium 8 (S8-4)

13:40~15:10 Room 324-B

Novel strategy for bone tissue engineering in oro-maxillofacial region

Organizer Takuya Matsumoto / *Okayama University, Japan*

Chair Takuya Matsumoto / *Okayama University, Japan*

Kent Leach / *University of California Davis, USA*

Keynote Speaker
13:40 S8-4-1
Cell-derived biomaterial strategy for potentiating progenitor osteogenic differentiation and bone regeneration
Kent Leach / *University of California Davis, USA*

Invited Speaker
14:05 S8-4-2
Deciphering Osteogenic Induction Pathways of Decellularized Extracellular Matrix Derived from Dental Stem Cells
Thanaphum (Noom) Osathanon / *Chulalongkorn University, Thailand*

14:20 S8-4-3
Stem cell/nanotechnology-based strategies in dental tissue regeneration
Hiroshi Egusa / *Tohoku University, Japan*

14:35 S8-4-4
Histological and Clinical evidence of Demineralized Dentin Matrix as Osteoinductive Bone Substitutes
Jeong-Kui Ku / *Jeonbuk National University, Korea, Republic of*

Oral Presenter
14:50 S8-4-5
Natural polymers-based scaffolds for cartilage and bone regeneration
Luis García-Fernández / *Centro de Investigaciones Biomédicas en Red (CIBER-BBN), Spain*

Concurrent Symposium 8 (S8-5)

13:40~15:10 Room 323

Biomaterials for Antimicrobial and/or Antifouling coatings

Organizer Xavier Banquy / *Universite de Montreal, Canada*

Co-organizer Dong Woog Lee / *Ulsan National Institute of Science and Technology (UNIST), Korea, Republic of*

Chair Xavier Banquy / *Universite de Montreal, Canada*

Dong Woog Lee / *Ulsan National Institute of Science and Technology (UNIST), Korea, Republic of*

Keynote Speaker
13:40 S8-5-1
Mussel-Inspired Polyethers for Versatile Surface Anchoring and Superior Antifouling
Byeong-Su Kim / *Yonsei University, Korea, Republic of*

Invited Speaker
14:05 S8-5-2
Probing reversible noncovalent molecular interactions for advancing multifunctional soft Materials and surfaces
Hongbo Zeng / *University of Alberta, Canada*

14:20 S8-5-3
Bioinspired materials for marine antifouling coating
Ronxin Su / *Tianjin university, China*

14:35 S8-5-4
Ion Adsorption Enhances Attraction Between Monomers in Polyelectrolyte Brushes
Jing Yu / *Nanyang Technological University, Singapore*

Oral Presenter
14:50 S8-5-5
Nanomechanics of Layer-by-layer nanofilms made of bottlebrush polymers
Xavier Banquy / *Universite de Montreal, Canada*

15:00 S8-5-6
Antifouling and antimicrobial bioresorbable coatings for protection of titanium-based implantable medical devices
David Zermeño Pérez / *Ashland Specialties Ireland Ltd. & School of Biomolecular and Biomedical Science, University College Dublin., Ireland*

Concurrent Symposium 8 (S8-6)

13:40~15:10 Room 322

Precision Medicine in Biomaterials Application for Regeneration

Organizer Lia Rimondini / *Università del Piemonte Orientale, Italy*

Chair Lia Rimondini / *Università del Piemonte Orientale, Italy*

Dagnija Loca / *Riga Technical University, Latvia*

Keynote Speaker
13:40 S8-6-1
Dynamic Strategies for Host-Responsive Biomaterials: Functionalization, Integration, and Therapeutic Potential
Abhay Pandit / *CURAM SFI Research Centre for Medical Devices, University of Galway, Ireland*

Invited Speaker
14:05 S8-6-2
Deciphering the Intricate Interplay between Peripheral Innervation and Bone Tissue in Health and Disease
Meriem Lamghari / *Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Portugal*

14:20 S8-6-3
Multifunctional biomaterials and advanced in vitro bioreactors-based platforms: combining strategies and technologies towards precision medicine
Andrea Cochis / *University of Eastern Piedmont, Italy*

Oral Presenter
14:35 S8-6-4
Revolutionizing drug screening: harnessing human protein-based materials for ethical and accelerated in vitro testing
Catarina Custódio / *Metatissue, PCI · Creative Science Park Aveiro Region, Via do Conhecimento, 3830-352 Ílhavo, Portugal Materials and, Portugal*

14:45 S8-6-5
Non-alcoholic steatohepatitis modeling with human liver microenvironment-incorporated organoids
Su Kyeom Kim / *Yonsei University, Korea, Republic of*

Concurrent Symposium 8 (S8-7)

13:40~15:10 Room 306-A

SFB Awards Ceremony and Plenary Presentations 1

Organizer Dan Lemyre / *Society For Biomaterials (US), USA*

Chair Shelly Sakiyama-Elbert / *University of Washington, USA*

William Wagner / *University of Pittsburgh, USA*

Invited Speaker (30 min)
13:40 S8-7-1
Natalie Artzi / *BWH, USA*

14:10 S8-7-2
MAPing endogenous repair in the brain
Tatiana Segura / *Duke University, USA*

14:40 S8-7-3
3D Printing with Molecular Weight Polymer Blends to Decouple Scaffold Property Effects on Mesenchymal Stromal Cell Fate
Lesley Chow / *Lehigh University, USA*

Concurrent Symposium 8 (S8-8)

13:40~15:10 Room 306-B

Material Symbiosis: Beyond Biocompatibility

Organizer Mitsuhiro Ebara / *National Institute for Materials Science (NIMS), Japan*

Chair Mitsuhiro Ebara / *National Institute for Materials Science (NIMS), Japan*

Koichi Shiraishi / *Jikei University School of Medicine, Japan*

Keynote Speaker
13:40 S8-8-1
Biomaterial-driven osmosis for advanced biomarker analysis
James Lai / *National Taiwan University of Science and Technology, Chinese Taipei*

Invited Speaker
14:05 S8-8-2
Polymeric prodrugs for immune therapy and infectious disease
Patrick S. Stayton / *University of Washington, USA*

14:20 S8-8-3
Anti-PEG antibodies: Analysis, incidence and biological functions
Steve Roffler / *Academia Sinica, Chinese Taipei*

Oral Presenter
14:35 S8-8-4
Structure-driven osteoimmunomodulation of 3D printed biodegradable Zn-based scaffold for bone repair
Hongtao Yang / *Beihang University, China*

14:45 S8-8-5
Synergistic interactions of semi-stable domains in biosystem
Yuhe Yang / *National Center for Nanoscience and Technology, China*

Concurrent Symposium 8 (S8-9)

13:40~15:10 Room 314

Advanced biofabrication for tissue engineering and disease modeling

Organizer Junmin Lee / *POSTECH, Korea, Republic of*

Chair Kristopher A. Kilian / *University of New South Wales (UNSW), Australia*

Junmin Lee / *POSTECH, Korea, Republic of*

Keynote Speaker
13:40 S8-9-1
In situ cell condensation-based tissue engineering
Eben Alsberg / *University of Illinois Chicago, USA*

Invited Speaker
14:05 S8-9-2
Advanced micromaterials and modular bio-inks for multiscale tissue engineering
Jeroen Leijten / *University of Twente, Netherlands*

Oral Presenter
14:20 S8-9-3
Phenotypic DMD biomarker exhibited by hiPSC-derived myogenic cells on engineered biomaterials
Wei Shen / *University of Minnesota, USA*

14:30 S8-9-4
Biofabrication approaches for middle ear regeneration
Carlos Mota / *Maastricht University, Netherlands*

14:40 S8-9-5
Intracellular delivery of nitric oxide enhances the therapeutic efficacy of mesenchymal stem cells for ischaemic diseases
Qiang Zhao / *Nankai University, China*

14:50 S8-9-6
Microfluidic electrospinning for neural tissue engineering
Shivesh Anand / *Aarhus University, Denmark*

15:00 S8-9-7
Fabrication of nanofibrillar microbundle scaffolds for enhanced myogenic induction in human adipose-derived stem cells
Taufiq Ahmad / *Department of Functional Materials in Medicine and Dentistry, Institute of Functional Materials and Biofabrication (IFB), and Bavarian Polymer Institute (BPI), University of Würzburg, Germany*

Concurrent Symposium 8 (S8-10)

13:40~15:10 Room 321-A

Applications for Biomedical Fibrous Materials

Organizer Martin W. King / *North Carolina State University, USA*

Chair Martin W. King / *North Carolina State University, USA*

Xiumei Mo / *Donghua University, China*

Keynote Speaker
13:40 S8-10-1
Tissue Engineered Cardiovascular Devices: Potential and Limits of Fibers
Frédéric Heim / *Université de Haute Alsace, France*

Invited Speaker
14:05 S8-10-2
Innovations in the Biomedical Fibrous Materials
Seeram Ramakrishna / *National University of Singapore, Singapore*

14:20 S8-10-3
Fiber-reinforced hydrogel: bridging strength and bioactivity for vascular tissue engineering
Fan Zhang / *University of Washington, USA*

Oral Presenter
14:35 S8-10-4
RENACER®: A non-toxic, fully resorbable and environmentally friendly fibrous biomaterial platform
Bastian Christ / *Fraunhofer Insitute for Silicate Research ISC - Translational Center Regenerative Therapies TLC-RT, Germany*

14:45 S8-10-5
Plant-derived polyphenol and LL-37 peptide-modified nanofibrous scaffolds for promotion of antibacterial activity, anti-Inflammation, and type-H vascularized bone regeneration
Jin Shu'e / *Sichuan University, China*

14:55 S8-10-6
One-pot functionalization of biomedical surfaces by silk fibroin self-assembly
R. Helen Zha / *Rensselaer Polytechnic Institute, USA*

Concurrent Symposium 8 (S8-11)

13:40~15:10 Room 321-B

3D-Tissue Models for Infection and Immunological Assays

Organizer Michiya Matsusaki / *Osaka University, Japan*

Chair Michiya Matsusaki / *Osaka University, Japan*

Wei Li / *Texas Tech University, USA*

Keynote Speaker
13:40 S8-11-1
Biofabrication meets infection and immunology: a promising joint-venture
Juergen Groll / *University of Wuerzburg, Germany*

Invited Speaker
14:05 S8-11-2
Treatment of Wound Infections with Bacteria-Responsive Hydrogel-Based Drug Delivery
Anita Shukla / *Brown University, USA*

Oral Presenter
14:20 S8-11-3
Study for Changes of IL-1α and IL-8 of RhE Model in vitro skin irritation test for medical devices
Liu Jia / *Shan Dong Institute of Medical Device and Pharmaceutical Packaging Inspection, China*

14:30 S8-11-4
Brain organoid-on-a-chip platform to spatiotemporally model virus infection via neuronal crosstalk
Ann-Na Cho / *University of Sydney, Australia*

Concurrent Symposium 8 (S8-12)

13:40~15:10 Room 320-A

Translation of bioactive ceramics from bench to bedside and emerging technologies for patient specific approaches

Organizer Christine Knabe / *Philipps University Marburg, Germany*

Chair Ahmed El-Ghannam / *University of North Carolina at Charlotte, USA*

Min Wang / *Department of Mechanical Engineering, The University of Hong Kong, Hong Kong SAR, China*

Keynote Speaker (30 min) 13:40 S8-12-1
Bioactive calcium alkali phosphate bone grafts enhance osteogenesis and facilitate bone repair in vivo - Translational research in oral implantology
Christine Knabe / *Philipps University Marburg, Germany*

Invited Speaker (15 min) 14:10 S8-12-2
Long term stability and functionality of regenerated bone induced by SCPC resorbable bioactive graft
Ahmed El-Ghannam / *University of North Carolina at Charlotte, USA*

Oral Presenter 14:25 S8-12-3
In vivo analysis of Porous Bioactive Silicon Carbide Scaffold for Craniofacial Bone Augmentation
RANDA ALFOTAWI / *King Saud University, Saudi Arabia*

14:35 S8-12-4
Nanoscale 3D Printing of Bioceramics
Iman Roohani / *University of Sydney, Australia*

Concurrent Symposium 8 (S8-13)

13:40~15:10 Room 320-B

Biomaterials-based startups for tissue engineering

Organizer Insup Noh / *Seoul National University of Science and Technology, Korea, Republic of*

Chair Insup Noh / *Seoul National University of Science and Technology, Korea, Republic of*

Xiumei Wang / *Tsingua University, China*

Sandra Van Vlierberghe / *Ghent University, Belgium*

Keynote Speaker 13:40 S8-13-1
Control of in situ bioprinting for even cell distribution and mechanical properties of tissue engineering scaffold by 3D bioprinting pen
Insup Noh / *Seoul National University of Science and Technology, Korea, Republic of*

Invited Speaker 14:05 S8-13-2
Colon-targeted S100A8/A9-specific peptide systems ameliorate colitis and colitis-associated colorectal cancer in mouse models
Chul-Su Yang / *Hanyang University, Korea, Republic of*

Oral Presenter 14:20 S8-13-3
Multifunctional aligned nanofiber hydrogels deliver multimodal cell-regulatory signals for nerve regeneration
Xiumei Wang / *Tsingua University, China*

14:30 S8-13-4
Microfluidic bioreactors for the sustainable development of local drug delivery systems
William Oates / *University of Manchester, United Kingdom*

14:40 S8-13-5
Flow-based downstream processing of *in vitro* transcribed mRNA and comparative assessment
Vikas Sharma / *POSTECH, Korea, Republic of*

14:50 S8-13-6
PHAsT: revolutionizing medical devices
Andrea Mele / *University of Sheffield, United Kingdom*

15:00 S8-13-7 VOD
Has Determination of Biocompatibility Been Hijacked? Biomaterial Scientists Take Heed
Elaine Duncan / *Paladin Medical, Inc. & Adjunct Professor, Department of Biomedical Engineering, Pigman College of Engineering, University of Kentucky, USA*

Concurrent Symposium 8 (S8-14)

13:40~15:10 Room 315

Biomaterials and Fabrication for Multicellular Engineered Systems

Organizer Hyunjoon Kong / *University of Illinois at Urbana-Champaign, USA*

Chair Hyunjoon Kong / *University of Illinois at Urbana-Champaign, USA*

Ho Jeong Jeon / *Korean Institute of Science and Technology, Korea, Republic of*

Keynote Speaker 13:40 S8-14-1
An emergent multicellular system through biological phase transition
Taher Saif / *University of Illinois at Urbana-Champaign, USA*

Invited Speaker 14:05 S8-14-2
Biomimetic hydrogel-based direct contact pressing culture for cell fate control
Ho Jeong Jeon / *Korean Institute of Science and Technology, Korea, Republic of*

14:20 S8-14-3
Discovery of Biomaterials for Salivary Gland Regeneration Inspired by Its Branching Morphogenesis Mechanisms
Sang Woo Lee / *Seoul National University ,Korea, Republic of*

14:35 S8-14-4
High-throughput microfluidics for synthetic biology and microbial bioproduction
Arum Han / *TEXAS A&M University, USA*

Oral Presenter 14:50 S8-14-5
Advancing 3D Bioprinting: Automated Fidelity Assessment for Precision and Efficiency for Cartilage Tissue Engineering Applications
Halima Boutouil / *Centre for Medical Engineering Research, School of Mechanical and Manufacturing, Dublin 9., Ireland*

14:00~17:00

Affiliated Meeting 3

AF3-5
Elsevier Biomaterials Journals Expanded Editorial Board Meeting (by invitation only)

15:10~15:20

Break

15:20~16:10 Convention Hall, 5F

Plenary Lecture 5

Chairs Hsing-Wen Sung / *National Tsing Hua University, Chinese Taipei*

Sung Yun Yang / *Chungnam National University, Korea, Republic of*

Plenary Speaker 15:20 PL5
Designer nanocarriers for cancer therapy
Paula T. Hammond / *Massachusetts Institute of Technology, USA*

16:10~16:30

Coffee Break

Concurrent Symposium 9 (S9-1)

16:30~18:00 Room 325-AB

100 Years of Biomaterials Design Contributions of Edward Merrill (1923-2020)

Organizer Nicholas Peppas / *Department of Biomedical Engineering and Dell Medical School, The University of Texas at Austin, USA*

Chair Nicholas Peppas / *Department of Biomedical Engineering and Dell Medical School, The University of Texas at Austin, USA*

Paula T. Hammond / *Chemical Engineering, Massachusetts Institute of Technology, USA*

Keynote Speaker (30 min) 16:30 S9-1-1
Cellular Backpacks: A Discrete Biomaterial for Drug and Cell Therapy
Samir Mitragotri / *Harvard University, USA*

Invited Speaker (30 min) 17:00 S9-1-2
Think like a polymer
Michael Sefton / *University of Toronto, Canada*

Invited Speaker (25 min) 17:30 S9-1-3
Injectable hydrogels for tissue engineering
Antonios Mikos / *Rice University, USA*

Concurrent Symposium 9 (S9-2)

16:30~18:00 Room 325-CD

Acta Biomaterialia: Global Perspectives in Launching an Independent Career

Organizer Sarah Heilshorn / *Stanford University, USA*

Chair Sarah Heilshorn / *Stanford University, USA*

Invited Speaker (20 min)

16:30 S9-2-1
Cognoscenti Career Passageway in Biomaterials Science
Dietmar Hutmacher / *Queensland University of Technology, Australia*

16:50 S9-2-2
A Journey from Studying Abroad to an Independent Career in Biomaterials
Nasim Annabi / *University of California, Los Angeles (UCLA), USA*

17:10 S9-2-3
Benefiting from international experiences in different regions
Liliang Ouyang / *Tsinghua University, China*

17:30 S9-2-4
Bridging Continents: Navigating an International Path from Student to Scholar
Junmin Lee / *POSTECH, Korea, Republic of*

Concurrent Symposium 9 (S9-3)

16:30~18:00 Room 324-A

Ferroptosis-mediated cancer target therapy (Sponsored by Methods, an Elsevier's interdisciplinary journal in life and medical sciences)

Organizer Su-Geun Yang / *Inha University, Korea, Republic of*

Chair Zheyu Shen / *Southern Medical University, China*

Chair Su-Geun Yang / *Inha University, Korea, Republic of*

Keynote Speaker

16:30 S9-3-1
Magnetic Resonance Imaging Contrast Agents and Their Applications for Tumor Ferroptosis Therapy
Zheyu Shen / *Southern Medical University, China*

Invited Speaker

16:55 S9-3-2
Photocatalytic nanoparticles for combination therapy of KRAS mutant colorectal cancer via controlled enzymatic pathway of ferroptosis
Su-Geun Yang / *Inha University, Korea, Republic of*

17:10 S9-3-3
DNA/Drug nanocomplexes for efficient and safe cancer therapy: Facile, efficient, scalable, and safe for clinical translation
Young Jik Kwon / *University of California, Irvine, USA*

Oral Presenter

17:25 S9-3-4
Iron-Based Nanomaterials for Tumor Theranostics: Applications and Challenges
Withdrawal
Yanglong Hou / *Sun Yat-Sun University, China*

17:35 S9-3-5
pH-sensitive Single-Atom Catalyst with Natural Immunoadjuvant for Precising Catalytic Therapy and Amplifying Immunity of Ferroptosi
Hung-Wei Cheng / *National Yang Ming Chiao Tung University, Chinese Taipei*

Concurrent Symposium 9 (S9-4)

16:30~18:00 Room 324-B

Tissue-specific Strategies for Soft Connective Tissue Regeneration

Organizer Lauren Flynn / *Western University, Canada*

Chair Lauren Flynn / *Western University, Canada*

Chair Brian Amsden / *Queen's University, Canada*

Keynote Speaker

16:30 S9-4-1
Learnings from COVID: Biomaterial Scaffolds for the Delivery of Gene Therapeutics for Enhanced Tissue Repair
Fergal O'Brien / *RCSI, Ireland*

Invited Speaker

16:55 S9-4-2
Chondroinductive and chondroprotective biomaterials for cartilage engineering
Julie Liu / *Purdue University, USA*

Oral Presenter

17:10 S9-4-3
***In situ* forming, mechanically resilient hydrogels for nucleus pulposus cell delivery**
Brian Amsden / *Queen's University, Canada*

17:20 S9-4-4
Co-delivery of adipose-derived stromal cells and endothelial colony-forming cells in novel cell-assembled scaffolds as a pro-angiogenic cell therapy platform
Lauren Flynn / *Western University, Canada*

17:30 S9-4-5
Biomimetic proteoglycan-dexamethasone conjugate for rescue of cartilage degradation - a novel therapeutic
Annika Bergstrom / *Villanova University, USA*

17:40 S9-4-6
Using acoustic cell patterning to engineer vascularized human skin equivalents
Dhananjay Deshmukh / *ETH Zürich, Switzerland*

17:50 S9-4-7
Multi-functional hydrogels with bioinspired mechanical properties and biodegradability for vascularized skeletal muscle regeneration
Lei Yang / *Hebei University of Technology, China*

Concurrent Symposium 9 (S9-5)

16:30~18:00 Room 323

3D Printing and Biofabrication in TERM, on the way to translation

Organizer Aleksandr Ovsianikov / *TU Wien [Technische Universität Wien], Austria*

Chair Aleksandr Ovsianikov / *TU Wien [Technische Universität Wien], Austria*

Chair Tim Woodfield / *University of Otago, New Zealand*

Keynote Speaker

16:30 S9-5-1
Scott Hollister / *Georgia Institute of Technology and Emory University, USA*

Invited Speaker

16:55 S9-5-2
Jinah Jang / *Pohang University of Science and Technology, Korea, Republic of*

17:10 S9-5-3
Bioengineering an Ovarian Microenvironment Informed by the Human Ovary BioMolecular Atlas
Monica Laronda / *Northwestern University, USA*

Oral Presenter

17:25 S9-5-4
3D Bio-printing for Tissue Engineering Application
Binbin Sun / *Donghua University, China*

17:35 S9-5-5
Alveolar bone repair of rhesus monkeys by using BMP-2 gene and MSCs loaded three-dimensional printed bioglass scaffold
Weikang Xu / *Institute of biological and Medical Engineering, Guangdong Acamedy of Sciences, China*

17:45 S9-5-6
Additive manufactured porous titanium with gradient structure balancing bone ingrowth and antibacterial activity: evaluation of in vitro antibacterial activity
Seiji Yamaguchi / *Department of Biomedical Sciences, College of Life and Health Sciences, Chubu University, Japan*

Concurrent Symposium 9 (S9-6)

16:30~18:00 Room 322

Bioenergetic-active Materials for Regenerative Engineering

Organizer Jian Yang / *Westlake University, China*

Chair Jian Yang / *Westlake University, China*

Vivek Kumar / *New Jersey Institute of Technology, USA*

Keynote Speaker
16:30 S9-6-1
Bioenergetic-active materials in regenerative engineering
Shengmin Zhang / *Huazhong University of Science and Technology, China*

Invited Speaker
16:55 S9-6-2
Bioactive Polymeric Micro-Nano Structures for Tissue Repair and Regeneration
Sangamesh Kumbar / *University of Connecticut, USA*

17:10 S9-6-3
Bioactive Polymeric Micro-Nano Structures for Tissue Repair and Regeneration
Jung Seung Lee / *Sungkyunkwan University, Korea, Republic of*

Oral Presenter
17:25 S9-6-4
Hierarchically designed 3D printed scaffold for repairing osteochondral interface tissue
Yingying Du / *Advanced Biomaterials and Tissue Engineering Center, Huazhong University of Science and technology, Wuhan 430074, China, China*

17:35 S9-6-5
Mito-engine equipped with coolant: a bioenergetic hybrid hydrogel for propelling intervertebral disc repair
Juehan Wang / *West China Hospital of Sichuan University, China*

17:45 S9-6-6
A customizable bioenergetic-active scaffold for multi-tissue regeneration
Xin Zhang / *Advanced Biomaterials and Tissue Engineering Center, Huazhong University of Science and Technology, China*

Concurrent Symposium 9 (S9-7)

16:30~18:00 Room 306-A

SFB Awards Ceremony and Plenary Presentations 2

Organizer Dan Lemyre / *Society For Biomaterials (US), USA*

Chair Shelly Sakiyama-Elbert / *University of Washington, USA*

Sarah Stabenfeldt / *Arizona State University, USA*

Invited Speaker (30 min)
16:30 S9-7-1
Building a virtual community of Latinx biomedical engineers
Brian Aguado / *University of California San Diego, USA*

16:30 S9-7-1
The LatinXinBME Story - Society for Biomaterials Diversity, Equity, and Inclusion Award lecture
Aåçna Maria Porras / *University of Florida, USA*

17:00 S9-7-2
Multifunctional polyurethane foams for hemorrhage control in traumatic wounds
Mary Beth Monroe / *Syracuse University, USA*

Invited Speaker (15 min)
17:30 S9-7-3
Service: a soul crushing burden? or……?
Timmie Topoleski / *University of Maryland, Baltimore County, USA*

17:45 S9-7-4
Nondestructive, longitudinal, 3D cell viability assessment using oxygen imaging
Mrignayani Kotecha / *O2M Technologies, LLC, USA*

Concurrent Symposium 9 (S9-8)

16:30~18:00 Room 306-B

Nature-inspired solutions: Bio-inspired hydrogels for new therapies and additive manufacturing

Organizer Hongji Yan / *Uppsala University and Karolinska Institutet, Sweden*

Chair Hongji Yan / *Uppsala University and Karolinska Institutet, Sweden*

Ying Yang / *School of Pharmacy and Bioengineering, Guy Hilton Research Centre, Keele University, United Kingdom*

Keynote Speaker
16:30 S9-8-1
Bio-Inspired Self-Assembling Hydrogels for Tissue Engineering and Drug Delivery
Aline F Miller / *School of Chemical Engineering and Analytical Science, Manchester Institute of Biotechnology, United Kingdom*

Invited Speaker
16:55 S9-8-2
Creation of advanced hydrogel structures using microtechnology and acoustics
Maria Tenje / *Uppsala University, Sweden*

17:10 S9-8-3
Topical reinforcement of the cervical mucus barrier to sperm
Thomas Crouzier / *Cirqle Biomedical, Denmark*

17:25 S9-8-4
Microgel-based clickable granular hydrogel bioinks for 3D bioprinting of skin constructs
Daniel Aili / *Linköping University, Sweden*

Oral Presenter
17:40 S9-8-5
Self-assembling peptide hydrogel coating with biomimetic immune-escape function for advanced implantable devices
Lei Lu / *Wenzhou Medical University, China*

Concurrent Symposium 9 (S9-9)

16:30~18:00 Room 314

Biomaterials for 3D stem cell mechanotransduction and differentiation

Organizer Yu Suk Choi / *University of Western Australia, Australia*

Chair Yu Suk Choi / *University of Western Australia, Australia*

Jennifer Young / *National University of Singapore / Mechanobiology Institute, Singapore*

Keynote Speaker
16:30 S9-9-1
Viscoelastic hydrogels and pluripotent stem cell morphogenesis
Ovijit Chaudhuri / *Stanford University, USA*

Invited Speaker
16:55 S9-9-2
Cell Dancing Enhances Stem Cell Differentiation in 3D Hydrogels via Nuclear Mechanotransduction
Fan Yang / *Stanford University, USA*

17:10 S9-9-3
Stem cell migration, mechanotransduction, and differentiation in confinement
Andrew Holle /*National University of Singapore / Mechanobiology Institute, Singapore*

Oral Presenter
17:25 S9-9-4
Engineering Spatio-Temporal Biomaterials for Materiobiology
Koichiro Uto / *National Institute for Materials Science, Japan*

17:35 S9-9-5
Advanced biomaterials mimicking the physicochemical properties of the human mesenchymal stem cell microenvironment to control cell behavior
Bethany Almeida / *Clarkson University, USA*

17:45 S9-9-6
Determing relationships between nanoscale curvature and stem cell fate to build predictive models for rational biomaterial design
Elizabeth Byers / *The Pennsylvania State University, USA*

Concurrent Symposium 9 (S9-10)

16:30~18:00 Room 321-A

Discovery, characterisation and applications of immune-instructive materials

Organizer Amir Ghaemmaghami / *University of Nottingham, United Kingdom*

Chair Amir Ghaemmaghami / *University of Nottingham, United Kingdom*

Nihal Engin Vrana / *Sparha Medical, France*

Keynote Speaker
16:30 S9-10-1
Bioengineering Cell-Based Therapeutics
Omid Veiseh / *Rice University, USA*

Invited Speaker
16:55 S9-10-2
The Routes of Incorporation of Immunomodulatory Properties for Multifunction Supramolecular Biomaterial-based Systems
Nihal Engin Vrana / *Sparha Medical, France*

17:10 S9-10-3
Harnessing molecular nanoscale arrangement to modulate immunity
Michelle Teplensky / *Boston University, USA*

Oral Presenter
17:25 S9-10-4
Milk Exosome-immobilized Fibrous Matrix for Accelerated Wound Healing
Hoai-Thuong Duc Bui / *Kangwon National University, Korea, Republic of*

17:35 S9-10-5
Mechano-activated cell therapy for accelerated diabetic wound healing
Andy Tay / *National University of Singapore, Singapore*

17:45 S9-10-6
Elucidating Interfacial Instabilities in Epithelial Tissue Gap Closure by Analyzing the Dynamic Features of Cells
Jennifer Shin / *KAIST, Korea, Republic of*

Concurrent Symposium 9 (S9-11)

16:30~18:00 Room 321-B

Biomaterial-based platforms for tumor tissue engineering

Organizer Daniela Loessner / *Monash University, Australia*

Chair Daniela Loessner / *Monash University, Australia*

Carsten Werner / *Leibniz Institute for Polymer Research, Germany*

Keynote Speaker
16:30 S9-11-1
Modelling complex interactions in the tumour microenvironment
Claus Jorgensen / *The University of Manchester, United Kingdom*

Invited Speaker
16:55 S9-11-2
Mineralized cryogels to recapitulate early events of breast cancer bone metastasis in vitro
Carsten Werner / *Leibniz Institute for Polymer Research, Germany*

Oral Presenter
17:10 S9-11-3
Construction of vascularized gastric cancer organoid-on-chip model via combining elastin-based hydrogels and 3D printing
Leping Yan / *The Seventh Affiliated Hospital, Sun Yat-sen University, China*

17:20 S9-11-4
Tumor-mimetic gradients in collagen fiber alignment enhance endothelial and cancer cell migration directionality and persistance
Vinay Abhyankar / *Rochester Institute of Technology, USA*

17:30 S9-11-5
AI Augmented 4D Bio-printed High-performance Invitro Disease Model of Oral Submucous Fibrosis.
KANIKA SINGROHA / *All India Institute of Medical Sciences Jodhpur- Indian Institute of TechnologyJodhpur, India*

17:40 S9-11-6
Spatially controlled construction of assembloids for modeling glioma infiltration
Michelle Huang / *Stanford University, USA*

Concurrent Symposium 9 (S9-12)

16:30~18:00 Room 320-A

Biomaterials in Stomatology Application and Clinical Translation

Organizer Xinquan Jiang / *College of Stomatology, Shanghai Jiao Tong University, China*

Chair Xinquan Jiang / *College of Stomatology, Shanghai Jiao Tong University, China*

Hala Zreiqat / *University of Sydney, Australia*

Keynote Speaker
16:30 S9-12-1
New strategies for oral and maxillofacial tissue regeneration and it's translation application
Xinquan Jiang / *College of Stomatology, Shanghai Jiao Tong University, China*

Invited Speaker
16:55 S9-12-2
Revolutionizing Bone Tissue Regeneration: Innovations in Nanostructured 3D-Printed Biomaterials for Personalized Healing and Anti-Senescence Strategies
Hala Zreiqat / *University of Sydney, Australia*

17:10 S9-12-3
Design and fabrication of silk fibroin biomaterials for dental medicine
Shengjie Ling / *Shanghaitech University, China*

Oral Presenter
17:25 S9-12-4
Hybrid dental biomaterials comprise hDPSC potential for dental pulp regeneration
Azam Ali / *Faculty of Dentistry, Centre for Bioengineering & Nanomedicine, University of Otago, Dunedin, New Zealand*

17:35 S9-12-5
Development of a multifunctional chitosan-catechol-based hydrogel for in situ dental applications
Maud Viallon / *Laval University, Canada*

17:45 S9-12-6
Concept, synthesis, and bio-evaluation of biostable and clinically-translatable dental restoratives
Zach Gouveia / *University of Toronto, Canada*

Concurrent Symposium 9 (S9-13)

16:30~18:00 Room 320-B

Biomaterials from Creation to the Present and Beyond

Organizer Tzu-Wei Wang / *National Tsing Hua University, Chinese Taipei*

Chair Tzu-Wei Wang / *National Tsing Hua University, Chinese Taipei*

James Lai / *Department of Bioengineering, University of Washington, USA*

Keynote Speaker
16:30 S9-13-1
Metallo-elastomers as biomaterials: why, how and what
Yadong Wang / *School of Biomedical Engineering, Cornell University, USA*

Invited Speaker
16:55 S9-13-2
Keratin Based Gradient Hydrogels for Wound Healing and Beyond
Kee Woei NG / *School of Materials Science and Engineering, Nanyang Technological University, Singapore*

17:10 S9-13-3
Cell-adhesive self-healing hydrogel as a new platform to construct biomimetic environment
Won-Gun Koh / *Yonsei University, Korea, Republic of*

Oral Presenter
17:25 S9-13-4
MXene-Decorated Nanofibrous Membrane with Programmed Antibacterial and Antiinflammatory Effects via Steering NF-κB Pathway for Infectious Cutaneous Regeneration
Shuai He / *sichuan university, China*

17:35 S9-13-5
β-Chitin chemical extraction from squid pens using ammonium-based ionic liquid for β-chitosan production
Susiana Melanie / *Department of Materials, Imperial College London, South Kensington Campus, London SW7 2AZ, UK, United Kingdom*

Concurrent Symposium 9 (S9-14)

16:30~18:00 Room 315

Biomaterials for Cultured Meat Production

Organizer Tatsuya Shimizu / *Tokyo Women's Medical University, Japan*

Jinkee Hong / *Yonsei University, Korea, Republic of*

Chair Michiya Matsusaki / *Osaka University, Japan*

Deepak Choudhury / *Bioprocessing Technology Institute, Singapore*

Hee Ho Park / *Hanyang University, Korea, Republic of*

Keynote Speaker (20 min) 16:30 S9-14-1
Cultured Meat Production Based on Circular Cell Culture System Using Microalgae.
Tatsuya Shimizu / *Tokyo Women's Medical University, Japan*

16:50 S9-14-2
Structure- and mechano-design of bioink for 3D-printed personalized cell-based Wagyu beef meat
Michiya Matsusaki / *Osaka University, Japan*

Invited Speaker 17:10 S9-14-3
Katsuhisa Sakaguchi / *Waseda University, Japan*

17:25 S9-14-4
Cell sheet-based engineering of structural and physiological biomimetic bovine muscle tissue for cultured meat production
Hironobu Takahashi / *Tokyo Women's Medical University, Japan*

Oral Presenter 17:40 S9-14-5
Plant-Based Decellularized Scaffolds for a Cultured Meat Prototype
Deepak Choudhury / *Bioprocessing Technology Institute, Singapore*

18:00~19:00 Grand Ballroom, 3F

Poster Session 3

19:00~21:00 Grand Ballroom, B1, Hotel Inter-Burgo EXCO

Congress Dinner

May 30 (Thu)

07:00~08:30 Lobby, 3F

Registration

Oral Session 3 (OS3-1)

08:30~09:30 Room 325-AB

Hydrogel 3

Chair Tooru Ooya / *Kobe University, Japan*

Mahmoud Rouabhia / *Université Laval, Canada*

Oral Presenter 1 08:30 OS3-1-1
Determination of the micromechanical and pro-angiogenic features of silk sericin/wool keratin hydrogels for regenerative medicine applications
Elif Beyza Demiray / *Regenerative Biomaterials Laboratory, Department of Bioengineering, Faculty of Engineering, Canakkale Onsekiz Mart University, 17100 Canakkale, Turkey, Türkiye*

Oral Presenter 2 08:40 OS3-1-2
Encapsulation of bacteriophages isolated from poultry farms into PDA-based hydrogel
Yu-Ning An / *Institute of Food Safety and Health, National Taiwan University, Taipei, Chinese Taipei*

Oral Presenter 3 08:50 OS3-1-3
Angiogenesis-Promoting Hydrogels on Cell Differentiation
Tooru Ooya / *Kobe University, Japan*

Oral Presenter 4 09:00 OS3-1-4
Facile Bioorthogonal Chemistry-based Injectable Hydrogels for Cell Delivery
Yiyan HE / *Nanjing Tech University, China*

Oral Presenter 5 09:10 OS3-1-5
Design of cannabinoid-rich polyvinyl alcohol hydrogels to control tissue inflammation
Mahmoud Rouabhia / *Université Laval, Canada*

Oral Session 3 (OS3-2)

08:30~09:30 Room 325-CD

Technology for biofabrication 1

Chair Hua Zhang / *Ningbo University, China*

George Tan / *Texas Tech University, USA*

Oral Presenter 1 08:30 OS3-2-1
Composite hydrogel bioink for in vitro modelling of the intervertebral disc
Gregor Miklosic / *AO Research Institute Davos, Switzerland*

Oral Presenter 2 08:40 OS3-2-2
Cell self-adaptable hydrogels for highly active bioprinting and soft tissue repair
Hua Zhang / *Ningbo University, China*

Oral Presenter 3 08:50 OS3-2-3
Hydrogel Scaffolds Embedded with Porous Microtubes as Artificial Capillary Vessels
George Tan / *Texas Tech University, USA*

Oral Presenter 4 09:00 OS3-2-4
Microfluidic-assisted digital manufacturing of functionally graded porous materials with transient physical and biological properties
Maria Celeste Tirelli / *Institute of Physical Chemistry - Polish Academy of Science, Poland*

Oral Presenter 5 09:10 OS3-2-5
Development of a Transplantable Pre-vascularized Constructs with Low Viscous Tissue-specific Bioinks by Using Microfluidic 3D Bioprinting Technique
Donghwan Kim / *POSTECH, Korea, Republic of*

Oral Session 3 (OS3-3)

08:30~09:30 Room 324-A

Smart materials for drug delivery

Chair Gayong Shim / *Soongsil University, Korea, Republic of*

Tianshu Li / *Musashi University, Japan*

Oral Presenter 1 08:30 OS3-3-1
Exosome derived from Q10-stimulated huMSCs defect ferropyosis by inhibition of ACSL4 to accelerate diabetic wound healing
zhengguang Wang / *The third hospital of Peking university, China*

Oral Presenter 2 08:40 OS3-3-2
Enhanced Tumor Tissue and Cell Penetrable Nanoparticle for Effective Drug Deliver
Junmin Kim / *Department of Chemical and Biomolecular Engineering, Sogang University, Seoul, Republic of Korea, Korea, Republic of*

Oral Presenter 3 08:50 OS3-3-3
Immunostimulatory cationic lipid nanoparticles: lipid structure and cellular mechanisms
Tianshu Li / *Musashi University, Japan*

Oral Presenter 4 09:00 OS3-3-4
Urease-Powered Nanomotor Containing STING Agonist for Bladder Cancer Immunotherapy
Hyunsik Choi / *POSTECH, Korea, Republic of*

Oral Presenter 5 09:10 OS3-3-5
Aloe-derived nanovesicles attenuate inflammation and enhance tight junction proteins for acute colitis treatment
Sang-Hun Choi / *Chung-Ang University, Korea, Republic of*

Oral Session 3 (OS3-4)

08:30~09:30 Room 324-B

Biomaterials scaffolds 3

Chair Min-Ho Kang / *Catholic University of Korea, Korea, Republic of*

Yun Jung Yang / *Inha University, Korea, Republic of*

Oral Presenter 1 08:30 OS3-4-1
Fabrication of anisotropic skeletal muscle using in situ magnetic fields supplemented bioprinting proces
Hanjun Hwangbo / *Sungkyunkwan University, Korea, Republic of*

Oral Presenter 2 08:40 OS3-4-2
Bone response and degradation behavior of porous magnesium-strontium scaffolds in segmental defect regeneration
Weidan Wang / *Affliated Zhongshan Hospital of Dalian University, China, Bone response and degradation behavior of porous magnesium-strontium scaffolds in segmental defect regeneration*

Oral Presenter 3 08:50 OS3-4-3
Electrophysiological assessment of network activity in neural constructs derived from primary progenitors and glial cells encapsulated in a biosynthetic hydrogel
Marjolaine Boulingre / *Imperial College London, United Kingdom*

Oral Presenter 4 09:00 OS3-4-4
Enhanced Spinal Cord Injury Repair: Synergistic Neural Microenvironment Remodeling via In Situ Magnetic Stimulation Along the Spinal Cord
Chun-Yi Yang / *Tsinghua University, China*

Oral Session 3 (OS3-5)

08:30~09:30 Room 323

Biomaterials for medical applications 3

Chair Kibret Mequanint / *Western University, Canada*

Christian Demitri / *Department of Engineering for Innovation, University of Salento, 73100 Lecce, Italy, Italy*

Oral Presenter 1 08:30 OS3-5-1
A non-hydrogel elastomer that resists the foreign body response in rodents and non-human primates
Xianchi Zhou / *Zhejiang University, China*

Oral Presenter 2 08:40 OS3-5-2
Chemokine-Scavenging Wound Dressing Improves Wound Healing in Chronic Wounds
Lucas Schirmer / *Leibniz Institute of Polymer Research Dresden, Germany, Chemokine-Scavenging Wound Dressing Improves Wound Healing in Chronic Wounds*

Oral Presenter 3 08:50 OS3-5-3
Engineered blood vessels as preclinical models to study ectopic calcification
Kibret Mequanint / *Western University, Canada*

Oral Presenter 4 09:00 OS3-5-4
Synthesis and characterization of hydroxyapatite scaffolds in combination with autologous platelet concentrates (CGF) for tissue engineering applications
Christian Demitri / *Department of Engineering for Innovation, University of Salento, 73100 Lecce, Italy, Italy*

Oral Presenter 5 09:10 OS3-5-5
Investigating the mechanoregulatory role of fibronectin during wound repair
Karin Wang / *Temple University, USA*

Oral Session 3 (OS3-6)

08:30~09:30 Room 322

Functional nanobiomaterials for tissue engineering 2

Chair Dongsoo Yang / *Korea University, Korea, Republic of*

Sujee Jeyapalina / *University of Utah, USA*

Oral Presenter 1 08:30 OS3-6-1
Surface topology of matrix materials induce the lipid rafts formation in cell membrane through heterogeneous nucleation
Yujing Xu / *Anhui University of Chinese Medicine, China*

Oral Presenter 2 08:40 OS3-6-2
3D Bioprinting Biomaterial-Nanoparticle Composites for Drug Delivery and Bone Repair Applications
Cho-E Choi / *Western University, Canada*

Oral Presenter 3 08:50 OS3-6-3
Synthetic small RNA for target-specific repression of genes in diverse bacteria
Dongsoo Yang / *Korea University, Korea, Republic of*

Oral Presenter 4 09:00 OS3-6-4
Fluorapatite Surface Drives Keratinocyte Differentiation and Promotes Hemidesmosome Expression
Sujee Jeyapalina / *University of Utah, USA*

Oral Session 3 (OS3-7)

08:30~09:30 Room 306-A

Metals

Chair Heinz Palkowski / *Clausthal University of Technology/Institute of Metallurgy, Germany*

Kun YU / *Central South University, China*

Oral Presenter 1 08:30 OS3-7-1
Processing of resorbable PLA-coated Zn-1.5Mg scaffolds
Heinz Palkowski / *Clausthal University of Technology/ Institute of Metallurgy, Germany*

Oral Presenter 2 08:40 OS3-7-2
Potential role of tricarboxylic acid cycle metabolites in the release of interleukin-1β by macrophages exposed to Co2+
Nasteho Abdoulkader / *University of Ottawa, Canada*

Oral Presenter 3 08:50 OS3-7-3
Bridging the gap between in vitro and in vivo corrosion testing of Fe35Mn and (Fe35Mn)5Ag biodegradable alloys
Joseph Buhagiar / *University of Malta, Malta*

Oral Presenter 4 09:00 OS3-7-4
Mechanical Properties, Biodegradation Behavior and Biocompatibility of Zn-Fe-Mg Alloy Membrane Produced by Powder Metallurgy for Guided Bone Regeneration Application
Kun YU / *Central South University, China,*

Oral Session 3 (OS3-8)

08:30~09:30 Room 306-B

Materials for Additive Manufacturing 3 (Novel materials, 4D printing)

Chair Lorenzo Bonetti / *Department of Civil Engineering and Architecture, University of Pavia, Via Ferrata 3, Pavia 27100, Italy, Italy*

Sebastien Blanquer / *CNRS, University of Montpellier, France*

Oral Presenter 1 08:30 OS3-8-1
Can we accelerate degradation in poly-lactic acid and expect to obtain the same results?
Luke Malone / *University of Cambridge, United Kingdom*

Oral Presenter 2 08:40 OS3-8-2
4D printing of crosslinked poly(ε-caprolactone) networks with one-way and two-way shape memory behavior
Lorenzo Bonetti / *University of Pavia, Italy*

Oral Presenter 3 08:50 OS3-8-3
High-Resolution 4D Bioprinting of Alginate-Based Shape Morphing Hydrogels
Ebrahim Vahabli / *Harry Perkins Institute of Medical Research, QEII Medical Centre, Nedlands and the UWA Centre for Medical Research, The University of Western Australia, Australia*

Oral Presenter 4 09:00 OS3-8-4
4D printing of soft shape-morphing alginate hydrogels as biomedical devices
Sebastien Blanquer / *CNRS, University of Montpellier, France*

Oral Session 3 (OS3-9)

08:30~09:30 Room 314

Antimicrobial drug delivery 1

Chair Ángel Serrano-Aroca / *Biomaterials and Bioengineering Lab. Centro de Investigación Traslacional San Alberto Magno. Universidad Católica de Valencia San Vicente Mártir, Spain*

Oral Presenter 1 08:30 OS3-9-1
The use of a metal oxide to create innovative antibacterial biomaterial for infection catheter prevention
Tatiana Padrão / *University of Porto, Portugal*

Oral Presenter 2 08:40 OS3-9-2
Preparation and hemostatic effect of micro-nano graded porous particles doped with dopamine fibrin-based water-triggered intelligent composite expansion sponge
Caiyun Zheng / *School of Life Sciences, Northwestern Polytechnical University, China*

Oral Presenter 3 08:50 OS3-9-3
Harnessing β-Glucans-Functionalized Nanocomplexes for Targeted Oral Delivery Treatment with Real-time Monitoring against Liver Fibrosis
Nhien Nguyen / *Department of Chemical Engineering and Frontier Research Center on Fundamental and Applied Sciences of Matters, National Tsing Hua University, Hsinchu, Chinese Taipei*

Oral Presenter 4 09:00 OS3-9-4
ANTIMICROBIAL TECHNOLOGIES TO PRODUCE FACE MASKS, FACE SHIELDS, LIPSTICKS AND SCAFFOLDS
Ángel Serrano-Aroca / *Biomaterials and Bioengineering Lab. Centro de Investigación Traslacional San Alberto Magno. Universidad Católica de Valencia San Vicente Mártir, Spain*

Oral Session 3 (OS3-10)

08:30~09:30 Room 321-A

Recent Advances in biomaterial Science and Engineering 4

Chair Hyeon-Yeol Cho / *Kookmin University, Korea, Republic of*

Jinho Yoon / *The Catholic University of Korea, Korea, Republic of*

Oral Presenter 1 08:30 OS3-10-1
Dual surface functionalization of microfluidic blood oxygenators using antithrombin-heparin (ATH) and tissue plasminogen activator (t-PA)
Siyuan Li / *School of Biomedical Engineering, McMaster University, Canada*

Oral Presenter 2 08:40 OS3-10-2
Comprehensive mechanical characterization of hydrogels for bone regeneration: a multi-method approach at macro and microscales
Cristina Lopez-Serrano / *Univ. Bordeaux, CNRS, Bordeaux INP, CBMN, France / Laboratoire d'Ingénierie de Surface, Département de génie des mines, de la métallurgie et des matériaux, Université Laval, Québec, Canada, France*

Oral Presenter 3 08:50 OS3-10-3
Physicochemical design of nanoparticles for targeted degradation of neutrophil extracellular traps
Preethi Raghavan / *University of California San Francisco, USA*

Oral Presenter 4 09:00 OS3-10-4
Zwitterionic Silver Nanoparticle-Engineered Commercial Soft Contact Lenses for Enhanced Treatment of Microbial Keratitis
Li MA / *The Hong Kong Polytechnic University, Hong Kong SAR, China*

Oral Session 3 (OS3-11)

08:30~09:30 Room 321-B

Biomaterials for organoids and organ models 3

Chair Yun Kee Jo / *Kyungpook National University, Korea, Republic of*

Yun Xiao / *Sichuan University, China*

Oral Presenter 1 08:30 OS3-11-1
Dynamic regulation of MSC chondrogenesis in collagen microenvironment
Yun Xiao / *Sichuan University, China*

Oral Presenter 2 08:40 OS3-11-2
Engineered hydrogel-based cochlear tissue models
Laura Poole-Warren / *The University of New South Wales, Australia*

Oral Presenter 3 08:50 OS3-11-3
Engineering glycosaminoglycan-based hydrogels to direct microvascular network formation in vitro
Yanuar Dwi Putra Limasale / *Leibniz Institute of Polymer Research, Germany*

Oral Presenter 4 09:00 OS3-11-4
Dynamic polysaccharide-based hydrogels as biomimetic viscoelastic and electroconductive scaffolds for in vitro neural cell culture
Marta Sacchi / *Université Grenoble Alpes, CEA, LETI-DTBS, Grenoble, France & Université Paris-Saclay, CEA, SEPIA-Jacob, Fontenay-aux-Roses, France*

Oral Presenter 5 09:10 OS3-11-5
Self-constructed Functional and Resilient In Vitro Coronary Arteriole Microfluidic Model via SMC Differentiation
Seokhun Lee / *KAIST, Korea, Republic of*

Oral Session 3 (OS3-12)

08:30~09:30 Room 320-A

Nanobiomaterials 1

Chair Giyoong Tae / *Gwangju Institute of Science and Technology, Korea, Republic of*

Anirban Sen Gupta / *Case Western Reserve University, USA*

Oral Presenter 1 08:30 OS3-12-1
Dual-responsive polymersomes as theranostic agents for neurologic lysosomal storage disorder
Dorian Foster / *Clemson University, USA*

Oral Presenter 2 08:40 OS3-12-2
Bioinspired nanomedicine systems for targeted therapy of thrombosis and thromboinflammation
Anirban Sen Gupta / *Case Western Reserve University, USA*

Oral Presenter 3 08:50 OS3-12-3
Polyarginine-functionalized nanotherapeutics for alleviation of macular degeneration
Chia-Jung Yang / *Department of Biomedical Engineering, Chang Gung University, Chinese Taipei*

Oral Presenter 4 09:00 OS3-12-4
Nanoreactors performing enzymatic cascade reactions for inflamatory diseases
Giyoong Tae / *Gwangju Institute of Science and Technology, Korea, Republic of*

Oral Presenter 5 09:10 OS3-12-5
Drug Conjugate-Based Self-assembled Nanomedicines For Therapeutic Applications
Jooho Park / *Konkuk University, Korea, Republic of*

Oral Session 3 (OS3-13)

08:30~09:30 Room 320-B

Functionalized materials and multi-funtion materials for drug delivery

Chair Simmyung Yook / *Sungkyunkwan University, Korea, Republic of*

Peter Wich / *University of New South Wales, School of Chemical Engineering, Sydney (Australia), Australia*

Oral Presenter 1 08:30 OS3-13-1
Engineered pH-sensitive Aggregation Property of Molecular Block for Selective Cytotoxicity in Tumor Microenvironment
Kazuki Moroishi / *Graduate School of Engineering, Osaka University, Japan*

Oral Presenter 2 08:40 OS3-13-2
Biohybrid Polysaccharide Nanomaterials for Drug Delivery
Peter Wich / *University of New South Wales, School of Chemical Engineering, Australia*

Oral Presenter 3 08:50 OS3-13-3
Leveraging biomaterials for the design of in vitro testing devices for nanomedicines and cell transporters
Clara Mattu / *Politecnico di Torino, Italy*

Oral Presenter 4 09:00 OS3-13-4
Upconversion Polymeric-based Nanoparticles for Transdermal Delivery
Hye Eun Choi / *Pusan National University, Korea, Republic of*

Oral Session 3 (OS3-14)

08:30~09:30 Room 315

Biomaterials and stem cells 1

Chair Soah Lee / *Sungkyunkwan University, Korea, Republic of*

Jichuan Qiu / *Shandong University, China*

Oral Presenter 1 08:30 OS3-14-1
Engineering Stem Cells with Functional Materials for Controlling the Neuronal Differentiation and Promoting the Neurogenesis
Jichuan Qiu / *Shandong University, China*

Oral Presenter 2 08:40 OS3-14-2
Coupling mechanical distension and sodium ascorbate treatments to generate autologous small-diameter vascular grafts with human adipose stromal cells and monocytes
Katya D'Costa / *University of Toronto, Canada*

Oral Presenter 3 08:50 OS3-14-3
Manipulation of magnetic nanomaterials to affect cellular signaling pathways for regenerative stem cell differentiation
Sunhong Min / *Korea University, Korea, Republic of*

Oral Presenter 4 09:00 OS3-14-4
Engineering gingival grafts seeded with human adipose-derived stem cells
Brian Webb / *University of Toronto, Canada*

Oral Presenter 5 09:10 OS3-14-5
Modulation of biophysical stimuli under three-dimensional microenvironment improves reprogramming efficiency for induced pluripotent stem cell generation through cell-biomaterial interaction
Deogil Kim / *Dongguk University, Korea, Republic of*

Concurrent Symposium 10 (S10-1)

09:30~11:00 Room 325-AB

Microgels for Microtissues

Organizer Youngmee Jung / *Korea Institute of Science and Technology, Korea, Republic of*

Chair Tae-Hyung Kim / *Chung-Ang University, Korea, Republic of*

Youngmee Jung / *Korea Institute of Science and Technology, Korea, Republic of*

Keynote Speaker 09:30 S10-1-1
Microfabricated Biomaterials for Extracellular Vesicle (EV) Manufacturing
Hyunjoon Kong / *University of Illinois at Urbana-Champaign, USA*

Invited Speaker 09:55 S10-1-2
Engineering next-generation bioactive materials to promote tissue regeneration through the modulation of skeletal interoceptive circuit
Wei Qiao / *The University of Hong Kong, Hong Kong SAR, China*

10:10 S10-1-3
Biomolecular hydrogels for enhanced stem cell neurogenesis and its applications
Hyeon-Yeol Cho / *Kookmin University, Korea, Republic of*

10:25 S10-1-4
Rational design of microgels as organ-on-a-chip components
Baeckkyoung Sung / *KIST Europe, Germany*

Oral Presenter 10:40 S10-1-5
Encapsulation of Multiple Enzymes within a Microgel via Water-in-Water Emulsion for Enzymatic Cascade Reaction
YOTA Okuno / *Kansai University, Japan*

10:50 S10-1-6
Enzyme-living microgels for precise channel customization in hydrogel-based tissue mimetic
Ana Silva / *University of Aveiro, Portugal*

Concurrent Symposium 10 (S10-2)

09:30~11:00 Room 325-CD

Biomaterials and devices for cardiovascular applications

Organizer Yunbing Wang / *Sichuan University, China*

Chair Yunbing Wang / *Sichuan University, China*

Song Li / *University of California, Los Angeles, USA*

Keynote Speaker

09:30 S10-2-1
Biohybrid supports for heart failure: Integrating extracellular matrix digest into microfibrous, elastic composite materials to redirect tissue remodeling
William R. Wagner / *University of Pittsburgh, USA*

Invited Speaker

09:55 S10-2-2
Biomaterial research: from bioinspired to data driven approach
Jian Ji / *Zhejiang University, China*

09:55 S10-2-3
Nano-theranostics for atherosclerosis
Gaocan Li / *Sichuan University, China*

10:10 S10-2-4
Ostrich Carotid Artery-derived Acellular Blood Vessel with 2mm ID for Limb Salvage
Tetsuji Yamaoka / *National Cerebral and Cardiovascular Research Institute, Japan*

Oral Presenter

10:40 S10-2-5
Modulating matrix stiffness to reverse age-related cardiac dysfunction
Ranmadusha Hengst / *Mechanobiology Institute/National University of Singapore., Singapore*

10:50 S10-2-6
Selective NLRP3 inflammasome inhibitor MCC950 suppresses inflammation and facilitates healing in vascular materials
Angus Grant / *The University of Sydney, Australia*

Concurrent Symposium 10 (S10-3)

09:30~11:00 Room 324-A

Biomaterials for Drug Delivery and Tissue Regeneration

Organizer Yunching Chen / *National Tsing Hua University, Chinese Taipei*

Chair Yunching Chen / *National Tsing Hua University, Chinese Taipei*

Che-Ming Jack Hu / *Academia Sinica, Chinese Taipei*

Keynote Speaker

09:30 S10-3-1
A Hitchhiker's Guide to Drug Delivery
Samir Mitragotri / *Harvard University, USA*

Invited Speaker

09:55 S10-3-2
Shyh-Dar Li / *University of British Columbia, Canada*

10:10 S10-3-3
Wireless charging-mediated angiogenesis and nerve repairby adaptable microporous hydrogels
Shang-Hsiu Hu / *National Tsing Hua University, Chinese Taipei*

10:25 S10-3-4
Organ and cell selective delivery using synthetic lipid nanoparticle for mRNA delivery
Qiaobing Xu / *Tufts University, USA*

10:40 S10-3-5
Pseudovirus-like particles for RNA self-packaging and delivery
Yu-Chen Hu / *National Tsing Hua University, Chinese Taipei*

Concurrent Symposium 10 (S10-4)

09:30~11:00 Room 324-B

Bone biomaterials for the elderly patients

Organizer Shengmin Zhang / *Advanced Biomaterials and Tissue Engineering Center, Huazhong University of Science and Technology, China*

Chair Shengmin Zhang / *Advanced Biomaterials and Tissue Engineering Center, Huazhong University of Science and Technology, China*

Keynote Speaker

09:30 S10-4-1
ENGINEERING FIBRIN CLOT STRUCTURE FOR IMPROVED AGED BONE REGENERATION
Yin Xiao / *School of Medicine and Dentistry, Menzies Health Institute Queensland, Griffith University, Australia*

Invited Speaker

09:55 S10-4-2
Upregulated Cell-Cell Communication via Gene Delivery Coating Accelerates Ischemic Tibia Fracture Healing
David Kohn / *University of Michigan, USA*

10:10 S10-4-3
Effects of extracellular matrix of MSC on osteogenesis
Young-Kwon Seo / *Dongguk university, Korea, Republic of*

10:25 S10-4-4
Bioactive Polyamide Composite for 3D Printer Feedstock
Dasmawati Mohamad / *Universiti Sains Malaysia, Malaysia*

Oral Presenter

10:40 S10-4-5
Nano biomaterials for hard tissue regeneration and multimodal tracing
Xiyu Li / *Sichuan University, China*

Concurrent Symposium 10 (S10-5)

09:30~11:00 Room 323

Advanced Biomaterials and Nanomaterials for Implantable Devices

Organizer Tolou Shokuhfar / *University of Illinois at Chicago, USA*

Chair Amber Jennings / *The University of Memphis, USA*

Reza Shahbazian / *University of Illinois at Chicago, USA*

Keynote Speaker

09:30 S10-5-1
Biomaterials for restoring tissue and organ function
Guillermo Ameer / *Northwestern University, USA*

Invited Speaker

09:55 S10-5-2
Biodegradable photonic crystals for adhesive sensor of wound healing
Jinmyoung Joo / *Ulsan National Institute of Science and Technology(UNIST), Korea, Republic of*

10:10 S10-5-3
Evaluation of slow-degraded hydroxypropyl methylcellulose hydrogel with anti-inflammatory agent loading applied as vitreous substitutes
Ching-Li Tseng / *Taipei Medical University, Chinese Taipei*

Oral Presenter

10:25 S10-5-4
A New Perspective on Biomineralization in Healthy and Dysfunctional Fe Withdrawal
Tolou Shokuhfar / *University of Illinois at Chicago, USA*

10:35 S10-5-5
Dynamic nano-assemblies for biological sensing, imaging and regulation
Daishun Ling / *Frontiers Science Center for Transformative Molecules, School of Chemistry and Chemical Engineering, National Center for Translational Medicine, Shanghai Jiao Tong University, Shanghai, China, China*

10:45 S10-5-6
A novel TAVR device with fish swim bladder as valve leaflets
Zhihong Wang / *Institute of Biomedical Engineering Chinese Academy of Medical Sciences and Peking Union Medical College (CAMS&PUMC), China*

Concurrent Symposium 10 (S10-6)

09:30~11:00 Room 322

Extracellular matrix for mechanobiology and therapeutics

Organizer Kwideok Park / *Korea Institute of Science and Technology, Korea, Republic of*

Chair Kwideok Park / *Korea Institute of Science and Technology, Korea, Republic of*

Jennifer H. Shin / *Korea Advanced Institute of Science and Technology, Korea, Republic of*

Keynote Speaker
09:30 S10-6-1
BLOOD AS DRIVER OF REGENERATIVE PROCESSES
Viola Vogel / *ETH Zürich, Switzerland*

Invited Speaker
09:55 S10-6-2
Engineering Extracellular Matrix: Components, Mechanics, and Architecture
Pilnam Kim / *Korea Advanced Institute of Science and Technology, Korea, Republic of*

10:10 S10-6-3
Hybrid hydrogel-extracellular matrix scaffolds identify distinct roles of matrix in cardiac aging
Jennifer Young / *National University of Singapore, Singapore*

10:25 S10-6-4
Molecular tension-dependent integrin-ligand binding regulates mechanosensitive cell adhesion and migration
Dong-Hwee Kim / *Korea University, Korea, Republic of*

Oral Presenter
10:40 S10-6-5
Norbornene-modified decellularized small intestine submucosa as a versatile photo-crosslinkable biomaterial
Chien-Chi Lin / *Purdue University, USA*

10:50 S10-6-6
Engineering modular tissues with multiscale hierarchy using mass produced living microbuilding blocks
Castro Johnbosco / *University of Twente, Netherlands*

Concurrent Symposium 10 (S10-7)

09:30~11:00 Room 306-A

Biomimetic surface design for implantable devices

Organizer Sachiro Kakinoki / *Kansai University, Japan*

Chair Marta Cerruti / *McGill University, Canada*

Sachiro Kakinoki / *Kansai University, Japan*

Keynote Speaker
09:30 S10-7-1
Bioactive surface modification and characterization strategies for improving blood contacting polymeric materials and devices
Kyla Sask / *McMaster University, Canada*

Invited Speaker
09:55 S10-7-2
Bioinspired solutions at surfaces and interfaces to prevent transepithelial implant infections
Conrado Aparicio / *UIC Barcelona International University of Catalonia, Spain*

10:10 S10-7-3
Anti-thrombus and cell-capturing technology on decellularized tissue for medical applications
Atsushi Mahara / *National cerebral and cardiovascular research institute, Japan*

Oral Presenter
10:25 S10-7-4
Anti-biofouling surface provided by collagen backbone-inspired oligoproline immobilization
Sachiro Kakinoki / *Kansai University, Japan*

10:35 S10-7-5
Biomimetic Electrospun Scaffold-Based In Vitro Model of Human Myocardial Fibrotic Tissue
Irene Carmagnola / *Politecnico di Torino, Italy*

Concurrent Symposium 10 (S10-8)

09:30~11:00 Room 306-B

Next Generation Biomaterials for Stem Cell Culture and Differentiation

Organizer Akon Higuchi / *National Central University, Chinese Taipei*

Chair Akon Higuchi / *National Central University, Chinese Taipei*

Guoping Chen / *National Institute for Materials Science, Japan*

Keynote Speaker
09:30 S10-8-1
Biomimetic ECM scaffolds and their influences on stem cell differentiation
Guoping Chen / *National Institute for Materials Science, Japan*

Invited Speaker
09:55 S10-8-2
Cell sorting biomaterials for purification of cardiomyocytes differentiated from human pluripotent stem cells
Akon Higuchi / *National Central University, Chinese Taipei*

10:10 S10-8-3
Extracellular matrix (ECM)-inspired biomaterial for hPSC-MSCs isolation and iPSCs reprogramming
Byung-Hyun Cha / *Kangwon National University, Korea, Republic of*

10:25 S10-8-4
Cell-adaptable dynamic hydrogels for tissue engineering
Liming Bian / *South China University of Technology, China*

Concurrent Symposium 10 (S10-9)

09:30~11:00 Room 314

3D bioprinting of multiple cell lineages and organoids for tissue regeneration

Organizer Chengtie Wu / *Shanghai Institute of Ceramics, Chinese Academy of Science, China*

Chair Michael Gelinsky / *Dresden University of Technology, Germany*

Hongxu Lu / *Shanghai Institute of Ceramics, Chinese Academy of Science, China*

Keynote Speaker
09:30 S10-9-1
Bioengineered Hydrogels for Human Organoids in Regenerative Medicine
Andrés J. García / *Georgia Institute of Technology, USA*

Invited Speaker
09:55 S10-9-2
3D printing of biomimetic biomaterials: from hard tissue to soft tissue regeneration
Chengtie Wu / *Shanghai Institute of Ceramics, Chinese Academy of Science, China*

10:10 S10-9-3
Using coaxial extrusion bioprinting for fabrication of complex liver models
Michael Gelinsky / *Dresden University of Technology, Germany*

Oral Presenter
10:25 S10-9-4
Development of bioactive materials for intestine and liver organoid culture
Hongxu Lu / *Shanghai Institute of Ceramics, Chinese Academy of Science, China*

10:35 S10-9-5
Stem cell-based spheroids for vascularized bone regeneration and their potential for 3d bioprinting
Filipa Teixeira / *MERLN Institute, Maastricht University, Netherlands*

10:45 S10-9-6
Machine learning-enabled constrained multi-objective design of bone scaffolds
Yu Qin / *peking university, China*

Concurrent Symposium 10 (S10-10)

09:30~11:00 Room 321-A

Open-source and low-cost technologies for advanced biomaterials fabrication

Organizer Adam Feinberg / *Carnegie Mellon University, USA*

Chair Adam Feinberg / *Carnegie Mellon University, USA*

Mark Skylar-Scott / *Stanford University, USA*

Keynote Speaker
09:30 S10-10-1
Tissue Assembloids via Low-Cost Biofabrication Setups
Yan Yan Shery Huang / *University of Cambridge, United Kingdom*

Invited Speaker
09:55 S10-10-2
Open-source low-cost 3D bioprinters for advanced biomanufacturing
Daniel Shiwarski / *University of Pittsburgh, USA*

10:10 S10-10-3
High-precision 3D cell spheroid printing technology to produce engineered tissue with enhanced functionality
Hyun-Wook Kang / *Ulsan National Institute of Science and Technology, Korea, Republic of*

Oral Presenter
10:25 S10-10-4
The MEWron: Open-source melt electrowriting
Simon Luposchainsky / *Kyoto Institute of Technology, Japan*

Concurrent Symposium 10 (S10-11)

09:30~11:00 Room 321-B

Innovative biomaterials and devices for cardiovascular therapy

Organizer Mikyung Shin / *Sungkyunkwan University, Korea, Republic of*

Chair Mikyung Shin / *Sungkyunkwan University, Korea, Republic of*

Erika Moore / *University of Maryland, USA*

Keynote Speaker
09:30 S10-11-1
Directed evolution enables sequential, affinity-controlled delivery of angiogenic growth factors for vascular network formation
Marian Hettiaratchi / *University of Oregon, USA*

Invited Speaker
09:55 S10-11-2
Leveraging biomaterial platforms and iPSC technology to study early-stage pathogenesis of inherited cardiomyopathies
Nathaniel Huebsch / *Washington University in St. Louis, USA*

10:10 S10-11-2
Engineered sEVs and miRNA modification for cardiac repair
Hyun-Ji Park / *Ajou University, Korea, Republic of*

Oral Presenter
10:25 S10-11-4
Smart surface constructing strategies for cardiovascular devices
Xin Li / *Third People's Hospital of Chengdu Affiliated to Southwest Jiaotong University, China*

10:35 S10-11-5
Fabrication and evaluation of Mg microtubes for biodegradable cardiovascular stents
Joung Sik Suh / *Korea Institute of Materials Science, Korea, Republic of*

Concurrent Symposium 10 (S10-12)

09:30~11:00 Room 320-A

Up-to-date technology in periodontal tissue engineering

Organizer Jeong-Ho Yun / *College of Dentistry, Jeonbuk National University, Korea, Republic of*

Chair Jeong-Ho Yun / *College of Dentistry, Jeonbuk National University, Korea, Republic of*

Takanori Iwata / *Tokyo Medical Dental University, Japan*

Keynote Speaker
09:30 S10-12-1
Various methods and effects of BMP application in tissue-engineered periodontal tissue and alveolar bone regeneration
Jeong-Ho Yun / *College of Dentistry, Jeonbuk National University, Korea, Republic of*

Invited Speaker
09:55 S10-12-2
Periodontal regeneration with periodontal ligament-derived mesenchymal stromal cell sheets
Takanori Iwata / *Tokyo Medical Dental University, Japan*

10:10 S10-12-3
Periodontal tissue regeneration by transplantation of autologous adipose tissue-derived multi-lineage progenitor cells
Masahide Takedachi / *Osaka University Dental Hospital, Japan*

10:25 S10-12-4
Multifunctional barrier membrane systems for periodontal tissue regeneration
Josephine Wong / *Collagen Solutions, United Kingdom*

Oral Presenter
10:40 S10-12-5
A hybrid 3D printed scaffold loaded with macrophages for immune-mediated periodontal regeneration
Jinhui Huang / *School of stomatology, Kunming Medical University, China*

Concurrent Symposium 10 (S10-13)

09:30~11:00 Room 320-B

Materiobiology

Organizer Changsheng Liu / *Shanghai University, China*

Chair Changsheng Liu / *Shanghai University, China*

Joachim Kohn / *Rutgers University, USA*

Keynote Speaker
09:30 S10-13-1
Decoding biomaterial-mediated regeneration: from the perspective of materiobiology
Changsheng Liu / *Shanghai University, China*

09:55 S10-13-2
Nanoengineered biomaterials for medicine and beyond
Krasimir Vasilev / *College of Medicine and Public Health, Flinders University, Australia*

Invited Speaker
10:20 S10-13-3
Tissue-Anchored Indoleamine 2,3 Dioxygenase Locally Suppresses Inflammation
Benjamin Keselowsky / *University of Florida, USA*

10:35 S10-13-4
Young Jang / *Georgia Tech/Emory, USA*

Oral Presenter
10:50 S10-13-5
Exploring the blood-contacting response of biodegradable metals
Deirdre Anderson / *Oregon Health and Science University, USA*

Concurrent Symposium 10 (S10-14)

09:30~11:00 Room 315

Advanced biofunctional and bioinspired materials/ devices for healthcare and tissue engineering

Organizer Emilio S. Hara / *Okayama University, Japan*

Chair Emilio S. Hara / *Okayama University, Japan*

Takahiro Nomoto / *University of Tokyo, Japan*

Keynote Speaker
09:30 S10-14-1
Innovations in Tissue Repair: Interdisciplinary Strategies for Biomaterial-Assisted Targeted Delivery and Scalable Synthesis
Nicholas Dunne / *Dublin City University, Ireland*

Invited Speaker
09:55 S10-14-2
Bioinspired cell-free therapeutic using cell membranes for bone tissue repair
Emilio S. Hara / *Okayama University, Japan*

10:10 S10-14-3
Design of biomaterials constituting drug delivery systems for boron neutron capture therapy
Takahiro Nomoto / *University of Tokyo, Japan*

Oral Presenter
10:25 S10-14-4
Tunable Triboelectric Nanogenerator for Precise Acceleration of Wound healing with varying Fluorinated Polymer
Cholong Choi / *Ulsan National Institute of Science and Technology, Korea, Republic of*

10:35 S10-14-5
Is iHuman a future reality or just science fiction?
Andreia T. Pereira / *i3S - Instituto de Investigação e Inovação em Saúde, Portugal, Portugal*

10:45 S10-14-6
Development and optimization of a non-invasive electrode based on immobilization of glucose oxidase in Nafion-carbon nanotubes nanocomposites for diabetes management
Shivam Gupta / *Department of Materials Science and Engineering, National Tsing Hua University, No. 101, Sec. 2, Kuang-Fu Road, Hsinchu 300, Taiwan, ROC, Chinese Taipei*

11:00~11:20

Coffee Break

11:20~12:10 Convention Hall, 5F

Plenary Lecture 6

Chairs Abhay Pandit / *University of Galway, Ireland*

Tim Woodfield / *University of Otago, New Zealand*

Plenary Speaker
11:20 PL6
The human body as the source of biomaterials
João F. Mano / *The University of Aveiro, Portugal*

12:10~13:40

Lunch

Affiliated Meeting 4

Room 325-CD 12:10 ~ 13:40 AF4-2
KSBM General Meeting

Room 320-B 12:10 ~ 13:10 AF4-3
Japanese Society for Biomaterials Member's Salon (by invitation only)

Room 504 12:10 ~ 13:10 AF4-4
ASBTE Annual General Meeting (by invitation only)

Lunch & Luncheon Seminar 3 (LS3-1)

12:20~13:10 Room 325-AB

Company Seminar (Dentium)

Speaker 12:20 LS3-1-1
Collagen Matrix(Collagen Graft 2) vs Membrane
Sung-Tae Kim / *Seoul national university School of Dentistry, Korea, Republic of*

Lunch & Luncheon Seminar 3 (LS3-2)

12:20~13:30 Room 324-A

Regulatory perspectives on biologics composed of cell therapy and biomaterials

Organizer Joo Hee (Elise) Kim / *Ajou University, Korea, Republic of*

Chair Joo Hee (Elise) Kim / *Ajou University, Korea, Republic of*

James Moon / *University of Michigan, Ann Arbor, USA*

Speaker (20+10 min)
12:20 LS3-2-1
Combination Products: Advanced Drug Delivery Technologies and Cell/Gene Therapies
James Wabby / *Regulatory Affairs (CoE), AbbVie, Inc, USA*

12:50 LS3-2-2
Regulatory aspect of extaracellular vasicles for regenerative medicine
Takahiro Ochiya / *Tokyo Medical University, Japan*

Lunch & Luncheon Seminar 3 (LS3-3)

12:20~13:20 Room 323

Young Scientist Forum (YSF) III: Experience from academic research to commercialization, start-up company

Organizer Seung-Woo Cho / *Yonsei University, Korea, Republic of*

Chair Won Jong Kim / *Pohang University of Science and Technology (POSTECH), Korea, Republic of*

Ines Goncalves / *i3S - Institute for Research and Innovation in Health, Portugal*

Speaker
12:20 LS3-3-1
Moving Research from the Lab to Startups
Andrés J. García / *Georgia Institute of Technology, USA*

12:35 LS3-3-2
From basic research to clinic application - a innovation story about a novel cardiovascular stent
Nan Huang / *Southwest Jiaotong University, China*

12:50 LS3-3-3
Technopreneurship: Building your future with knowledge and know-how
Matteo Santin / *University of Brighton, United Kingdom*

Panel Discussion (15 min) 13:05 -

Concurrent Symposium 11 (S11-1)

13:40~15:10 Room 325-AB

Leveraging cell microenvironment and immune system to heal and regenerate

Organizer Matteo D'Este / *AO Research Institute Davos, Switzerland*

Chair Claudia Loebel / *University of Michigan, USA*

Matteo D'Este / *AO Research Institute Davos, Switzerland*

Keynote Speaker
13:40 S11-1-1
Engineering the cell-matrix interface - understanding and guiding cell function
Claudia Loebel / *University of Michigan, USA*

Invited Speaker
14:05 S11-1-2
Towards understanding neutrophils role in biomaterials-mediated immunomodulation
Matteo D'Este / *AO Research Institute Davos, Switzerland*

Oral Presenter
14:20 S11-1-3
Engineering immunomodulatory materials for regenerative medicine
Daniel Salthouse / *Newcastle University, United Kingdom*

14:30 S11-1-4
Alkaline hydrogels initiate endogenous TGFβ signaling for in situ tissue regeneration
Yuting Niu / *Peking University, China*

14:40 S11-1-5
Synthesis and characterization of binary mesoporous bioactive glass submicron particles containing cobalt and curcumin for wound healing applications
Amanda Maria Almeida Coco / *Friedrich Alexander Universität Erlangen-Nürnberg, Germany*

14:50 S11-1-6
Conductive double network eutectogel cooperates with electrical stimulation to facilitate burn wound healing by mimicking physiological properties of natural skin
Yu Tian / *Ocean Univertisy of China, China*

Concurrent Symposium 11 (S11-2)

13:40~15:10 Room 325-CD

Additive manufacturing of biomaterials

Organizer Masaya Yamamoto / *Tohoku University, Japan*

Chair Masaya Yamamoto / *Tohoku University, Japan*

Miho Nakamura / *University of Turku, Finland*

Keynote Speaker

13:40 S11-2-1
Development of novel spinal fusion spacer fabricated by metal additive manufacturing focusing on the orientation of bone tissue architecture
Takayoshi Nakano / *Osaka University, Japan*

Invited Speaker

14:05 S11-2-2
Novel Support-less Bioceramics Additive Manufacturing Process in a Hydrogel Bath
Hui-suk Yun / *Korea Institute of Materials Science, Korea, Republic of*

14:20 S11-2-3
The additive manufacturing of hydrogels
Esra Mutlu / *University of Birmingham, United Kingdom*

Oral Presenter

14:35 S11-2-4
Bioactive Ceramic for Immunotherapy: Effect of ionic composition on macrophage anti-inflammatory phenotypic expression
Miho Nakamura / *University of Turku, Finland*

14:45 S11-2-5
Modulated stem cell differentiation by 3D sandwich cell culture using stiffness-tunable hydrogels
Masaya Yamamoto / *Tohoku University, Japan*

14:55 S11-2-6
3D printed Bioglass scaffolds with gyroid architecture for bone regeneration using DLP
Meryem Lamari / *Imperial College London, United Kingdom*

Concurrent Symposium 11 (S11-3)

13:40~15:10 Room 324-A

Biomaterials for theranostics

Organizer Sei Kwang Hahn / *POSTECH, Korea, Republic of*

Chair Guosong Hong / *Stanford University, USA*

Hyunjoo Jenny Lee / *KAIST, Korea, Republic of*

Keynote Speaker

13:40 S11-3-1
Smart Wearable Materials and Devices for Theranostic Healthcare Applications
Sei Kwang Hahn / *POSTECH, Korea, Republic of*

Invited Speaker

14:05 S11-3-2
Guosong Hong / *Stanford University, USA*

14:20 S11-3-3
Ultrasound-Mediated Neuromodulation
Hyunjoo Jenny Lee / *KAIST, Korea, Republic of*

14:35 S11-3-4
Atomically precise molecular materials of noble metal for Real-Time Monitoring and Therapeutic Management of Alzheimer's Diseas
Jayasree R S / *Sree Chitra Tirunal Institute for Medicla Sciences and Technology, India*

Oral Presenter

14:50 S11-3-5
Biomimetic targeting nanoplatform for atherosclerosis theranostics via photoacoustic diagnosis and "hand-in-hand" immunoregulation
Boxuan Ma / *Sir Run Run Shaw Hospital, College of Medicine, Zhejiang University, China*

15:00 S11-3-6
Glycogen nanoparticles as next generation biomaterials in nanomedicine
Quinn Besford / *Leibniz Institute for Polymer Research, Germany*

Concurrent Symposium 11 (S11-4)

13:40~15:10 Room 324-B

Nanofiberous scaffold for tissue engineering

Organizer Xiumei Mo / *Donghua University, China*

Chair Xiumei Mo / *Donghua University, China*

Gary L. Bowlin / *University of Memphis, USA*

Keynote Speaker

13:40 S11-4-1
Nanofiberous scaffolds for peripheral nerve repair
Younan Xia / *Georgia Institute of Technology, USA*

Invited Speaker

14:05 S11-4-2
Electrospun organic and inorganic nanofiber for tissue engineering
Xiumei Mo / *Donghua University, China*

14:20 S11-4-3
Semi-unstable Near-field Electrospinning: Providing Capacity for Cellular Interactions and Ingrowth within the Template Superstructure Framework Voids/Pores
Gary L. Bowlin / *University of Memphis, USA*

Oral Presenter

14:35 S11-4-4
Electronspun polycaprolactone-silk fibroin nanofiber scaffolds for the differentiation of mesenchymal stem cells into vascular cells
Zhongkui Hong / *Mechanical Engineering Department, Texas Tech University, USA*

14:45 S11-4-5
Advanced 3D Spacer Textile Scaffolds for Tubular Tissue Regeneration using an engineered nanofiber PCL-PLA core-sheath yarn
Anna Doersam / *University of Manchester, United Kingdom*

Concurrent Symposium 11 (S11-5)

13:40~15:10 Room 323

Biomaterials for women's health engineering

Organizer Brendan Harley / *University of Illinois at Urbana-Champaign, USA*

Chair Brendan Harley / *University of Illinois at Urbana-Champaign, USA*

Elizabeth Cosgriff Hernandez / *University of Texas at Austin, USA*

Keynote Speaker

13:40 S11-5-1
Biomaterial Tools for Women's Health: Call to Action
Jenny Robinson / *University of Washington, USA*

Invited Speaker

14:05 S11-5-2
Physiomimetic models of endometrioma initiation
Brendan Harley / *University of Illinois at Urbana-Champaign, USA*

Oral Presenter

14:20 S11-5-3
Self-fitting vaginal stents based on shape memory foams
Elizabeth Cosgriff Hernandez / *The University of Texas at Austin, USA*

14:30 S11-5-4
Antibacterial albumin-tannic acid coatings for scaffold-guided breast reconstruction
Silvia Cometta / *Queensland University of Technology, Australia*

14:40 S11-5-5
***In vitro* accelerated ageing and infrared microscpectroscopy method study of silicone breast implant**
Credson Langueh / *CY Cergy Paris University, France*

14:50 S11-5-6
3D printing for engineering gynecological tissues
John Fisher / *University of Maryland, USA*

Concurrent Symposium 11 (S11-6)

13:40~15:10 Room 322

Electroactive Biomaterials for Tissue Engineering and of Regenerative Medicine Applications

Organizer Vitor Correlo / *3B's Research Group I3Bs - Research Institute on Biomaterials, Biodegradables and Biomimetics of University of Minho, Portugal*

Chair Vitor Correlo / *3B's Research Group I3Bs - Research Institute on Biomaterials, Biodegradables and Biomimetics of University of Minho, Portugal*

Il Keun Kwon / *Department of Dental Materials, School of Dentistry, Kyung Hee University, Korea, Republic of*

Keynote Speaker 13:40 S11-6-1
Conductive Biomaterials for Tissue Engineering- Application of Conductive Polymers and 2D Nanomaterial
Michael Monaghan / *Trinity College Dublin, Ireland*

Invited Speaker 14:05 S11-6-2
Graphene-incorporated conductive hydrogels as new functional biomaterial
Jae Young Lee / *Gwangju Institute of Science and Technology, Korea, Republic of*

Oral Presenter 14:20 S11-6-3
Electrical and Chemical Stimulation Using Ionically Conductive Polymeric Implants for Soft Tissue and Wound Healing
Sama Abdul Malik / *University of Connecticut Health Center / USA*

14:30 S11-6-4
Electroactive biomaterials based on ion-doped piezoelectric barium titanate nanofibers for improved bone regeneration
Tianyi Zheng / *SINOPEC (Beijing) Research Institute of Chemical Industry Co., Ltd., China*

14:40 S11-6-5
Orally ingestible piezoelectric particulate stimulators for noninvasive vagus nerve stimulation in treating obesity and sepsis
Cam Hoa Mac / *Department of Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan, Chinese Taipei*

14:50 S11-6-6
Redox-active and electroactive hydrogel for post-infarct myocardial repair enabled by a core-shell conductive polymer coating @MOF nanozyme
Shuyi He / *Sichuan University, China*

15:00 S11-6-7
Flexible, hydrophilic conductive elastomers for soft bioelectronic applications
Estelle A. Cuttaz / *Imperial College London, United Kingdom*

Concurrent Symposium 11 (S11-7)

13:40~15:10 Room 306-A

Biomimetic structured materials

Organizer Hao Bai / *Zhejiang University, China*

Chair Hao Bai / *Zhejiang University, China*

In-Seop Lee / *Institute of Human Materials, Korea, Republic of*

Keynote Speaker 13:40 S11-7-1
Ice-templating technique and its application in bioinspired macroporous materials
Hao Bai / *Zhejiang University, China*

Invited Speaker 14:05 S11-7-2
Multiscale biomimetic approaches for regulation of cell function and tissue regeneration
Jangho Kim / *Chonnam National University, Korea, Republic of*

Oral Presenter 14:20 S11-7-3
3D printed porous titanium filled with mineralized UV-responsive chitosan hydrogel promotes cell proliferation and osteogenesis in vitro
Cen Chen / *Zhejiang Sci-Tech University, China*

14:30 S11-7-4
The structure of osseointegration
Anders Palmquist / *Department of Biomaterials, University of Gothenburg, Sweden*

14:40 S11-7-5
Biomimetic Solutions Derived from Simulated Body Fluid for Hydroxyapatite Coating
Kazumasa Suzuki / *Nagoya Univeristy, Japan*

14:50 S11-7-6
Spatiotemporal control of fiber alignment within fiber-hydrogel composites using magnetic fields
Julianne Holloway / *Arizona State University, USA*

Concurrent Symposium 11 (S11-8)

13:40~15:10 Room 306-B

Special Symposium in Memory of Professor Sung Wan Kim

Organizer Yong-Hee Kim / *Hanyang University, Korea, Republic of*

Chair Yong-Hee Kim / *Hanyang University, Korea, Republic of*

Youngro Byun / *Seoul National University, Korea, Republic of*

Keynote Speaker (15 min) 13:40 S11-8-1
Sung Wan Kim's Legacy in Biomaterials, Polymer and Pharmaceutics
Nicholas Peppas / *University of Texas at Austin, USA*

Invited Speaker 13:55 S11-8-2
Research and Friendships with Professor Sung Wan Kim at the University of Utah
Yong Kiel Sung / *Dongguk University, Korea, Republic of*

14:10 S11-8-3 VOD
In Memory of Dr. Sung Wan Kim: A Pioneer in Biomaterials and Drug Delivery
Hamid Ghandehari / *University of Utah, USA*

14:25 S11-8-4
My great senior, the late Prof. SW. Kim
Suong-Hyu Hyon / *BMG Inc., Japan*

14:40 S11-8-5
The pioneer footprints of Prof. Sung Wan Kim's research
Youngro Byun / *Seoul National University, Korea, Republic of*

Concurrent Symposium 11 (S11-9)

13:40~15:10 Room 314

Multifunctional biomaterials for blood contacting and cardiovascular applications

Organizer Kyla Sask / *McMaster University, Canada*

Chair Kyla Sask / *McMaster University, Canada*

Anna Waterhouse / *The University of Sydney, Australia*

Keynote Speaker 13:40 S11-9-1
Strategies to improve the hemocompatibility and avoid infection in blood-contacting medical devices
M. Cristina L. Martins / *University of Porto, Portugal*

Invited Speaker 14:05 S11-9-2
HISTOPATHOLOGY EVALUATION OF MULTIFUNCTIONAL BIOMATERIALS FOR CARDIOVASCULAR APPLICATION
Sabareeswaran A / *Sree Chitra Tirunal Institute for Medical Sciences and Technology, India*

Oral Presenter 14:20 S11-9-3
Biomimetic approaches for cardiovascular medical device materials
Anna Waterhouse / *The University of Sydney, Australia*

14:30 S11-9-4
A thermo-responsive shape-memory polymer to enable the minimally invasive delivery of an implantable blood pressure measurement device
Arjan Sall / *Healthcare Technologies Institute, School of Chemical Engineering, University of Birmingham, United Kingdom*

14:40 S11-9-5
The well-designed nanobubbles for vascular inflammatory imaging
Fang Yang / *Southeast University, China*

14:50 S11-9-6
A novel total hip replacement design based on cylindrical joints: numerical simulation of stresses on a small-sized version
Ayda Ghahremanzadeh / *University of Alberta, Chemical and Materials Engineering Department, Canada*

15:00 S11-9-7
A new class of hydrogel for soft and hard tisue repair.
Fariba Dehghani / *The University of Sydney, Australia*

Concurrent Symposium 11 (S11-10)

13:40~15:10 Room 321-A

Glass for bone repair: From bioglass to glass-polymer hybrids

Organizer Justin Chung / *Seoul National University Hospital, Korea, Republic of*

Chair Justin Chung / *Seoul National University Hospital, Korea, Republic of*

Gowsihan Poologasundarampillai / *University of Birmingham, United Kingdom*

Keynote Speaker
13:40 S11-10-1
3D printed Bouncy Bioglass for osteochondral regeneration
Julian Jones / *Imperial College London, United Kingdom*

Invited Speaker
14:05 S11-10-2
Cotton-wool-like sol-gel bioactive glasses with controlled ion releasability
Akiko Obata / *Nagoya Institute of Technology, Japan*

Oral Presenter
14:20 S11-10-3
Additive Manufacturing of "Bouncy Bioglass" for bone regeneration
Haffsah Iqbal / *Imperial college london, United Kingdom*

14:30 S11-10-4
Microstructural and mechanical evaluation of 3D-printed hybrid bone scaffolds using X-ray micro-computed tomography imaging and finite element analysis
Jingwen Liu / *University College London, United Kingdom*

14:40 S11-10-5
***In-vitro* study on the effect of magnesium-doped bioactive glass on the senescence and osteogenic differentiation ability of hDPSCs**
Xin Yan / *Hospital of Stomatology, Sun Yat-sen University, China*

Concurrent Symposium 11 (S11-11)

13:40~15:10 Room 321-B

Biomaterials for immune tolerance against autoimmune diseases

Organizer James Moon / *University of Michigan, Ann Arbor, USA*

Chair James Moon / *University of Michigan, Ann Arbor, USA*

Jaeyun Kim / *Sungkyunkwan University, Korea, Republic of*

Keynote Speaker
13:40 S11-11-1
Harnessing biomaterials to study and direct immune function
Chris Jewell / *University of Maryland, USA*

Invited Speaker
14:05 S11-11-2
Nanoparticle-based tolerogenic vaccines to treat multiple sclerosis via re-establishing immune tolerance
Jaeyun Kim / *Sungkyunkwan University, Korea, Republic of*

14:20 S11-11-3
Nanoparticle platform for immune tolerance against autoimmunity
James Moon / *University of Michigan, Ann Arbor, USA*

Oral Presenter
14:35 S11-11-4
Localized Immune Cell Homing Platform for Cellular Immunotherapy
Corrine Ying Xuan Chua / *Houston Methodist Research Institute, USA*

14:45 S11-11-5
An injectable, macroporous and immunoactive T cells-loaded scaffold for local cancer immunotherapy treatment
Baptiste Marin / *Department of mechanical engineering, École de Technologie Supérieure (ÉTS), Montreal, Canada, Canada*

14:55 S11-11-6
Tracing immune cells around biomaterials with spatial anchors during large-scale wound regeneration
Yang Yang / *Sichuan University, China*

Concurrent Symposium 11 (S11-12)

13:40~15:10 Room 320-A

Osteonecrosis: The Biology and Treatment with Implants, Biologics, and Cells

Organizer Lynne Jones / *Johns Hopkins University School of Medicine, USA*

Chair Shin-Yoon Kim / *Kyungpook National University, Korea, Republic of*

Keynote Speaker
13:40 S11-12-1
Pathology, Diagnosis, and Clinical Aspects of Osteonecrosis: A Comprehensive Overview
Nobuhiko Sugano / *Osaka University Graduate School of Medicine, Japan*

Invited Speaker
14:05 S11-12-2
Current treatments for osteonecrosis of the femoral head
Seung-Hoon Baek / *Kyungpook National University, Korea, Republic of*

14:20 S11-12-3
The use of cells and biologics for treatment of early stage ONFH
Stuart Goodman / *Stanford University, USA*

Oral Presenter
14:35 S11-12-4
Composite elastin derivative-based hydrogel designed for promoting bone formation, vascularization, and innervation: In vivo evaluation in ectopic and heterotopic model
Micaela Roque / *BioIngenierie Tissulaire (BioTis), Inserm U1026, University of Bordeaux, Bordeaux, France, France*

14:45 S11-12-5
3D printed synergistic graphene citrate composite scaffold for craniofacial bone reconstruction
Mirae Kim / *Northwestern University, Department of Biomedical Engineering, USA*

Concurrent Symposium 11 (S11-13)

13:40~15:10 Room 320-B

Melt Electrowriting of Scaffolds

Organizer Paul Dalton / *University of Oregon, USA*

Chair Paul Dalton / *University of Oregon, USA*

Malgorzata (Gosia) Wlodarczyk-Biegun / *Silesian University of Technology, Poland*

Keynote Speaker
13:40 S11-13-1
MEW, Hydrogels, and BMP-2 Converge to Orchestrate Membrane Guided Bone Regeneration
Dietmar Hutmacher / *Queensland University of Technology, Australia*

Invited Speaker
14:05 S11-13-2
Biomimetic scaffolding through materials & design optimization
Naomi Paxton / *University of Oregon, USA*

14:20 S11-13-3
Melt Electrowriting to assist regeneration of injured gradient tissues
Malgorzata (Gosia) Wlodarczyk-Biegun / *Silesian University of Technology, Poland*

Oral Presenter
14:35 S11-13-4
Development of smart nanofibers as a wearable blood purification filter
Makoto Sasaki / *National Institute for Materials Science, Japan*

14:45 S11-13-5
Piezoelectric nanoyarns to advance self-powered acoustic cochlear transducers
Bahareh Azimi / *Department of Civil and Industrial Engineering, University of Pisa, Pisa, Italy*

14:55 S11-13-6
Ultrasonic levitated electrospinning
Haoyu Wang / *UCL, United Kingdom*

Concurrent Symposium 11 (S11-14)

13:40~15:10 Room 315

Photothermal Biomaterials

Organizer Ji Ho Park / *KAIST, Korea, Republic of*

Chair Ji Ho Park / *KAIST, Korea, Republic of*

Gabe Kwong / *Georgia Tech, USA*

Keynote Speaker
13:40 S11-14-1
Engineering photothermal neural interface using thermoplasmonics for neuromodulation
Yoonkey Nam / *KAIST, Korea, Republic of*

Invited Speaker
14:05 S11-14-2
Photothermal nanoparticles for biomedical applications
Ji Ho Park / *KAIST, Korea, Republic of*

Oral Presenter
14:20 S11-14-3
Cascade loop of ferroptosis induction and immunotherapy based on metal-phenolic networks for combined therapy of colorectal cancer
Withdrawal
Bin Yang / *School of Biomedical Engineering, Guangzhou Medical University, China*

14:30 S11-14-4
New graphene-containing pharmaceutical formulations for infrared lamps-based phototherapy of skin cancer: in vitro validation and ex-vivo human skin permeation
Artur Moreira Pinto / *LEBABE-FEUP - University of Porto, Portugal*

14:40 S11-14-5
Polydopamine nanoparticles-based combinational hyperthermal chemotherapy for the treatment of liver cancer
Melis Emanet / *Istituto Italiano di Tecnologia (IIT), Italy*

14:50 S11-14-6
4D printing of shape memory polymer composites for bioresorbable and deployable medical devices
Saswat Choudhury / *Indian Institute of Science Bangalore, India*

15:10~15:20

Break

15:20~16:10 Convention Hall, 5F

Plenary Lecture 7

Chairs Ana Paula Pego / *i3S / INEB - University of Porto, Portugal*

Yong-Hee Kim / *Hanyang University, Korea, Republic of*

Plenary Speaker
15:20 PL7
Design of Drug Delivery Guided by Molecular Imaging Technology
Ick Chan Kwon / *Korea Institute of Science and Technology, Korea, Republic of*

16:10~16:30

Coffee Break

Concurrent Symposium 12 (S12-1)

16:30~18:00 Room 325-AB

Mechanobiology with Biomaterials (in conjunction with MRC Mechanobiology Dental Medicine Research Center)

Organizer Hae-Won Kim / *Dankook University, Korea, Republic of*

Chair Hae-Won Kim / *Dankook University, Korea, Republic of*

Dong-Hwee Kim / *Korea University, Korea, Republic of*

Keynote Speaker
16:30 S12-1-1
Mecchanoceuticals for cell engineering
Song Li / *UCLA, USA*

16:55 S12-1-2
Mechanobiology of collective cell migration
Chwee Teck Lim / *National University of Singapore, Singapore*

Invited Speaker (10 min)
17:20 S12-1-3
Understanding the forces that control cell fate and disease progressio
Yongsung Hwang / *Soonchunhyang University, Korea, Republic of*

17:30 S12-1-4
Targeting nuclear mechanics mitigates the fibroblast invasiveness in pathological dermal scars induced by matrix stiffening
Hye Sung Kim / *Dankook University, Korea, Republic of*

17:40 S12-1-5
Fluorescent proteins-based tension sensors for cell-ECM mechanotransduction
Tae-Jin Kim / *Pusan National University, Korea, Republic of*

17:50 S12-1-6
Regulation of silk-Collagen hydrogel promotes therapeutic effects of mesenchymal stem cells on neovascularization in hindlimb ischemia via FAK/Src signal axis
Jun Hee Lee / *Dankook University, Korea, Republic of*

Concurrent Symposium 12 (S12-2)

16:30~18:00 Room 325-CD

Exploring the Frontiers of Micro-Nano Surface Engineering of Biomaterials

Organizer Ketul Popat / *Colorado State University, USA*

Chair Ketul Popat / *Colorado State University, USA*

Geetha Manivasagam / *Vellore Institute of Technology, India*

Keynote Speaker
16:30 S12-2-1
Nanotextural engineering of calcium phosphate bone grafts: interaction with proteins, cells and tissues
Maria-Pau Ginebra / *Universitat Politècnica de Catalunya (UPC), Spain*

Invited Speaker
16:55 S12-2-2
Cold Atmospheric Plasma Patch-Mediated Skin Anti-Inflammatory Therapy
Seunghun Lee / *Korea Institute of Materials Science, Korea, Republic of*

17:10 S12-2-3
Nanofiber membranes for reconstruction of tissue barriers and generation of uniform organoids
Dong Sung Kim / *POSTECH, Korea, Republic of*

Oral Presenter
17:25 S12-2-4
Two-dimensional architectures-transformed drugless conformational nanoarchitectonics for light-augmented nanocatalytic chemodynamic therapy
Ranjith Kumar Kankala / *Huaqiao University, China*

17:35 S12-2-5
Development of 3D-printed antimicrobial Si3N4-PEEK cervical spine cages: phase I
Ryan Bock / *SINTX Technologies, Inc., USA*

Concurrent Symposium 12 (S12-3)

16:30~18:00 Room 324-A

Acta Biomaterialia 2024 Gold and Silver Medals, Technical Session

Organizer Arthur J. Coury / *Northeastern University, USA*

Chair Arthur J. Coury / *Northeastern University, USA*

Kristi Anseth / *University of Colorado Boulder, USA*

Introduction of gold medalist (15 min)
16:30 Arthur J. Coury / *Northeastern University, USA*

Invited Speaker (20 min)
16:45 S12-3-1 VOD
Self-assembled lipid-prodrug nanomedicines: an emerging field for the treatment of severe diseases
Patrick Couvreur / *Université Paris-Saclay, France*

17:05 S12-3-1 VOD
Making a polyester's difference in drug delivery
Ravi Kumar / *University of Alabama, USA*

Introduction of silver medalist (15 min)
17:25 Kristi Anseth / *University of Colorado Boulder, USA*

Invited Speaker (20 min)
17:40 S12-3-3
Supercharging immunotherapy with nanotechnology: structure matters
Natalie Artzi / *BWH, USA*

18:00 S12-3-4
Biosensing, nanotechnology and the future of biomimetic materials
Nicholas Peppas / *University of Texas at Austin, USA*

Closing Remarks (10 min)
18:20 -

Concurrent Symposium 12 (S12-4)

16:30~18:00 Room 324-B

Translational Regenerative Medicine

Organizer Sang Jin Lee / *Wake Forest Institute for Regenerative Medicine, USA*

Chair Sang Jin Lee / *Wake Forest Institute for Regenerative Medicine, USA*

Alvaro Mata / *Nottingham University, United Kingdom*

Keynote Speaker
16:30 S12-4-1
Translational approaches in designing bioactive materials for regeneration of dense connective tissues
Chang Hun Lee / *Columbia University, USA*

Invited Speaker
16:55 S12-4-2
Bioengineered strategies for augmenting skeletal muscle function in rotator cuff injuries
Woojin Han / *Icahn School of Medicine at Mount Sinai, USA*

17:10 S12-4-3
Photocrosslinkable bioinks for light-based 3D bioprinting to fabricate multiscale tissue constructs
Keekyung Kim / *University of Calgary, Canada*

17:25 S12-4-4
Deok-Ho Kim / *Johns Hopkins Biomedical Engineering, USA*

17:40 S12-4-5
Pre-clinical and clinical translation of tissue engineered tendons to regenerate human extensor tendon for functional recovery
Wei Liu / *Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, China*

Oral Presenter
17:55 S12-4-6
Self-feeding living tissues via nutritional nanoparticles enables long-term stem cell functionality under anoxia
Niels Willemen / *University of Twente, Netherlands*

Concurrent Symposium 12 (S12-5)

16:30~18:00 Room 323

Biomaterials for Wearable and Implantable Medical Devices, Sensors, and Electronics

Organizer Youngjae Chun / *University of Pittsburgh, USA*

Chair Youngjae Chun / *University of Pittsburgh, USA*

Jae-Woong Jeong / *KAIST, Korea, Republic of*

Keynote Speaker
16:30 S12-5-1
Soft Implantable Bioelectronic System for Wireless Continuous Monitoring of Restenosis
Woon-Hong Yeo / *Georgia Institute of Technology, USA*

Invited Speaker
16:55 S12-5-2
Advanced minmially invasive medical devices for treating cerebral, cardiac, and aortic diseases and injuries
Youngjae Chun / *University of Pittsburgh, USA*

17:10 S12-5-3
Steve Park / *KAIST, Korea, Republic of*

Oral Presenter
17:25 S12-5-4
A novel self-gripping long-term PLLA/TMC resorbable mesh providing temporary support for open primary ventral and incisional hernia
YVES BAYON / *Medtronic, France*

17:35 S12-5-5
Mechanisms identified in total hip arthroplasty corrode modular junctions in the knee
Michael Kurtz / *Drexel University, USA*

Concurrent Symposium 12 (S12-6)

16:30~18:00 Room 322

Sex as a biological variable in biomaterials research

Organizer Brian Aguado / *University of California San Diego, USA*

Chair Brian Aguado / *University of California San Diego, USA*

Shelly Peyton / *University of Massachusetts Amherst, USA*

Keynote Speaker
16:30 S12-6-1
Matrix-dependent regulation of endothelial-mesenchymal transition in Turner Syndrome: relevance to bicuspid aortic valves
Jane Grande-Allen / *Rice University, USA*

Invited Speaker
16:55 S12-6-2
Biomaterial Tools to Interrogate Sex Differences in Knee Connective Tissue Regeneration
Jenny Robinson / *University of Washington, USA*

17:10 S12-6-3
Dissecting Cell-Matrix Interactions in Endometrial Disorders using Tissue Engineered Models
Juan Gnecco / *Tufts University, USA*

Oral Presenter
17:25 S12-6-4
Biomimicking trilayer scaffolds with high stretchability and sustained estradiol release for uterine tissue regeneration
Min Wang / *Department of Mechanical Engineering, The University of Hong Kong, Pokfulam Road, Hong Kong, Hong Kong SAR, China*

17:35 S12-6-5
Sex-based differences in human mesenchymal stem cell osteogenic response on mineralized collagen scaffolds
Vasiliki Kolliopoulos / *Rice University, USA*

17:45 S12-6-6
Y-chromosome linked genes modulate sex-specific valvular myofibroblast methylation on hydrogels
Rayyan Gorashi / *University of California, San Diego, USA*

Concurrent Symposium 12 (S12-7)

16:30~18:00 Room 306-A

ESB International Award 2024 Symposium

Organizer Ana Paula Pego / *i3S / INEB, Portugal*

Chair Nicholas Dunne / *Dublin City University, Ireland*

Ana Paula Pego / *European Society for Biomaterials, Portugal*

Maria Grazia Raucci / *National Research Council of Italy, Italy*

Invited Speaker (45 min)
16:30 S12-7-1
Engineering Hydrogel Microstructures for Use in Biomedical Applications
Jason Burdick / *University of Colorado Boulder, USA*

Invited Speaker
17:15 S12-7-2
Pamela Habibovic / *Maastricht University, Netherlands*

17:15 S12-7-3
Luis García-Fernández / *Centro de Investigaciones Biomédicas en Red (CIBER-BBN), Spain*

17:15 S12-7-4
Rui Reis / *3B's Research Group, University of Minho, Portugal*

17:15 S12-7-5
Andrés J. García / *Georgia Institute of Technology, USA*

17:15 S12-7-6
Jie Weng / *College of Medicine, Southwest Jiaotong University, China*

Concurrent Symposium 12 (S12-8)

16:30~18:00 Room 306-B

Functionalization and commercialization of nano/micro-structured materials

Organizer Sung Yun Yang / *Chungnam National University, Korea, Republic of*

Chair Sung Yun Yang / *Chungnam National University, Korea, Republic of*

Nguyen Kim Nga / *Hanoi University of Science & Technology, Vietnam*

Keynote Speaker
16:30 S12-8-1
Factory-on-a-Chip: Scaling-up Microfluidics for Large-Scale Biomaterials Synthesis
Daeyeon Lee / *University of Pennsylvania, USA*

Invited Speaker
16:55 S12-8-2
Machine Deep-Learning Analysis of Living Cell Morphology on 2D versus Psuedo-3D Polymeric Surface
Sung Yun Yang / *Chungnam National University, Korea, Republic of*

17:10 S12-8-3
Addressing boron neutron capture therapy's bottlenecks: The synthesis, functionalization, and therapeutic potential of boron-based nanoparticles
Pei Yuin Keng / *National Tsing Hua University, Chinese Taipei*

17:25 S12-8-4
Optical Assessment of Tear Glucose by Smart Biosensor based on Chromophoric Cerium Oxide Nanoparticle
Dong Yun Lee / *Hanyang University, Korea, Republic of*

Oral Presenter
17:40 S12-8-5
Cell Painting with supramolecular assemblies: exploring biomimicry via high-throughput screening.
Victor Veenbrink / *Eindhoven University of Technology, Netherlands*

17:50 S12-8-6
Functionalized hydrogels interface with inflamed mucosa for material-tissue interaction in murine models of inflammatory bowel disease
Sufeng Zhang / *Brigham and Women's Hospital and Harvard Medical School, USA*

Concurrent Symposium 12 (S12-9)

16:30~18:00 Room 314

Interoception mediated musculoskeletal tissue regeneration

Organizer Kelvin Yeung / *The University of Hong Kong, Hong Kong SAR, China*

Chair Soo-Hong Lee / *Dongguk University, Korea, Republic of*

Wei Qiao / *The University of Hong Kong, Hong Kong SAR, China*

Keynote Speaker
16:30 S12-9-1 VOD
Multiple cations enriched in bone tissue microenvironment can induce superior bone regeneration mediated by the CNS-skeletal circuit
Kelvin Yeung / *The University of Hong Kong, Hong Kong SAR, China*

Invited Speaker
16:55 S12-9-2
Biomaterials-based mass production of mesenchymal stem cells and extracellular vesicles for personalized bone tissue regeneration
Soo-Hong Lee / *Dongguk University, Korea, Republic of*

Oral Presenter
17:10 S12-9-3
Age-associated functional healing of musculoskeletal trauma through regenerative engineering and rehabilitation
Karina Nakayama / *Oregon Health & Science University, USA*

17:20 S12-9-4
Role of macro-pore structure and parameters on compressive properties of porous tantalum scaffolds additively manufactured by laser powder bed fusion
Xia Jin / *School of Mechanical and Automotive Engineering, Qingdao University of Technology, P.R.China, China*

17:30 S12-9-5
3D-Printed Bone Tissue-Engineered Scaffolds Using Bioactive Methacrylated Gellan Gum
LUIGI AMBROSIO / *National Research Council of Italy, Italy*

17:40 S12-9-6
Engineering functional 3D skeletal muscle tissue with acoustic patterning for neuromuscular regeneration
EUNSEON JEONG / *YONSEI UNIV., Korea, Republic of*

Concurrent Symposium 12 (S12-10)

16:30~18:00 Room 321-A

Biomaterial Systems and Devices for Hemostasis, Resuscitation, and Wound Care

Organizer Ashley Brown / *North Carolina State University and University of North Carolina at Chapel Hill, USA*

Chair Anirban Sen Gupta / *Case Western Reserve University, USA*

Ildoo Chung / *Pusan National University, Korea, Republic of*

Keynote Speaker
16:30 S12-10-1
Storable and ready-to-use artificial red cells (hemoglobin vesicles) as a resuscitative fluid for emergency medicine
Hiromi Sakai / *Nara Medical University, Japan*

Invited Speaker
16:55 S12-10-2
Functional Effects of Platelet Manufacturing and Storage
Susan Shea / *University of Pittsburgh, USA*

17:10 S12-10-3
Ultrasoft colloidal hydrogels in confined environments
Andrew Lyon / *Chapman University, USA*

Oral Presenter
17:25 S12-10-4
Well-defined porous biodegradable and thermoresponsive micro/nanospheres
Ildoo Chung / *Pusan National University, Korea, Republic of*

17:35 S12-10-5
Impact of the drying approach on the properties of hydrogel/textile biohybrid vascular implants
Dominic Pascal Andre / *Department of Biohybrid & Medical Textiles (BioTex), AME-Institute of Applied Medical Engineering, Helmholtz Institute, RWTH Aachen University, Aachen, Germany*

17:45 S12-10-6
Chemically modified silk proteins and their applications
Chengchen Guo / *Westlake University, China*

Concurrent Symposium 12 (S12-11)

16:30~18:00 Room 321-B

Anti-pathogen surface technologies for medical devices

Organizer Helmut Thissen / *CSIRO, Australia*

Chair Helmut Thissen / *CSIRO, Australia*

Wei-Bor Tsai / *National Taiwan University, National Taiwan University*

Keynote Speaker
16:30 S12-11-1
Serum proteins adsorption on the nanostructured surfaces: does it compromise the mechano-bactericidal efficacy and immunomodulation of titanium surfaces?
Elena Ivanova / *RMIT University, Australia*

Oral Presenter
16:55 S12-11-2
Near-infrared irradiated graphene oxide films disrupt *Staphylococcus* epidermidis biofilms
Inês Gonçalves / *i3S - Institute for Research and Innovation in Health, Portugal*

17:05 S12-11-3
Derivatization of NO-Releasing Graphene Oxide Nanosheets for Antibacterial Biomaterial
Hitesh Handa / *University of Georgia, USA*

17:15 S12-11-4
Combination of antibiotic and antibacterial implant-a new strategy to reduce the clinical usage of antibiotics
Ke Yang / *Institute of metal research, Chinese academy of sciences, China*

17:25 S12-11-5
Activity and long-term stability of surface immobilized antimicrobial peptides (AMPs) using thiol-mediated coupling strategies.
Andrew Boden / *Department of Chemistry and Biotechnology, School of Science, Computing and Engineering Technologies, Swinburne University Technology, Hawthorn, VIC 3122., Australia*
Withdrawal

17:35 S12-11-6
Induced pluripotent stem cells for repairing lens zonule using a biomimetic electrospinning scaffold combined with a directional differentiation strateg
Tianhui Chen / *Fudan University, China*

17:45 S12-11-7
Antimicrobial Biomaterials and Wearable Devices for Combating Drug-resistant Bacterial Infections
Peng Li / *Northwestern Polytechnical University, China*

Concurrent Symposium 12 (S12-12)

16:30~18:00 Room 320-A

Translation of nanoplatforms for surgical applications

Organizer Alicia El Haj / *University of Birmingham, United Kingdom*

Chair Alicia El Haj / *University of Birmingham, United Kingdom*

Mohd Fauzi MH Busra / *Universiti Kebangsaan Malaysia, Malaysia*

Keynote Speaker
16:30 S12-12-1
Using multidisciplinary science to drive healthcare innovations
Molly Stevens / *Imperial College London, United Kingdom*

Invited Speaker
16:55 S12-12-2
Ken Dawson / *University College Dublin, Ireland*

17:10 S12-12-3
Antibacterial-coated collagen biomatrix for future use in diabetic wound care
Mohd Fauzi MH Busra / *Universiti Kebangsaan Malaysia, Malaysia*

17:25 S12-12-4
Development of Durable and Facile Anti-Biofouling Coating: Lynk Coating for Biomedical Implants
Jungmok Seo / *Yonsei Univ. / Lynk Solutec Inc., Korea, Republic of*

Oral Presenter
17:40 S12-12-5
Silver/strontium co-incorporated mesoporous silica nanoparticles-loaded polylactic acid electrospun fibers for bone tissue engineering
Zhang Yuhan / *NWPU, China*

Concurrent Symposium 12 (S12-13)

16:30~18:00 Room 320-B

Multi-layer biomaterials: emerging applications

Organizer Wei Li / *Texas Tech University, USA*

Chair Wei Li / *Texas Tech University, USA*

Michiya Matsusaki / *Osaka University, Japan*

Keynote Speaker
16:30 S12-13-1
Development of layer-by-layer films for regenerative medicine and cell signalling studies: application to bone tissue engineering
Catherine Picart / *French Alternative Energies and Atomic Energy Commission, France*

Invited Speaker
16:55 S12-13-2
Building Bioactivity into Slippery Liquid-Infused Porous Surfaces
David Lynn / *University of Wisconsin Madison, USA*

17:10 S12-13-3
Tissue-interfaced electronics with multi-layered structure
Toshinori Fujie / *Tokyo Institute of Technology, Japan*

Oral Presenter
17:25 S12-13-4
4D printed scaffolds for spinal cord repair and regeneration
Withdrawal
Kaushik Chatterjee / *Indian Institute of Science, India*

17:35 S12-13-5
SURFACE FUNCTIONALIZATION OF TITANIUM IMPLANTS FOR BIOLOGICALLY ACTIVE SURFACES: ALTERNATING CURRENT ELECTROPHORETIC DEPOSITION AND ATMOSPHERIC PRESSURE PLASMA TECHNOLOGY
Merve Kübra Aktan / *Katholieke Universiteit Leuven, Belgium*

Concurrent Symposium 12 (S12-14)

16:30~18:00 Room 315

Understanding the role of the immune system in tissue generation, repair, and wound healing

Organizer Erika Moore / *University of Maryland, USA*

Chair Erika Moore / *University of Maryland, USA*

Keynote Speaker
16:30 S12-14-1
Engineering Nanobiomaterials for Targeted Modulation of Inflammation
Evan Scott / *Northwestern University, USA*

Invited Speaker
16:55 S12-14-2
Silicate nanoplatelet-based shear-thinning hydrogel for immunotherapeutic agent delivery
Hanjun Kim / *Korea University, Korea, Republic of*

Oral Presenter
17:10 S12-14-3
Micro-computed tomographic imaging of foreign body giant cells in tissue engineering scaffold
Lucia Baixauli-Marin / *Research Unit of Health Science and Technology, Faculty of Medicine, University of Oulu, Finland*

17:20 S12-14-4
Anatomical location and alloy composition-specific immune responses observed from metallic medical implants
Jessica Stelzel / *Johns Hopkins University, Biomedical Engineering, USA*

17:30 S12-14-5
Immunomodulation of fibroblast and keratinocyte cytokine response on transepithelial implants with peptide nanocoatings
Daniel Moreno / *Faculty of Dentistry, UniversitatInternacional de Catalunya (UIC), Spain*

17:40 S12-14-6
Anti-inflammatory function-enhancing engineered small extracellular vesicles promote temporomandibular joint regeneration
Zhiling Zhang / *Nankai University, China*

17:50 S12-14-7
Incorporating bone-derived extracellular matrix into macroporous microribbon scaffolds for bone regeneration
Cassandra Villicana / *Stanford University, USA*

Affiliated Meeting 4

Room 325-AB 18:00 ~ 19:00 AF4-4
KSBM Special Session (Korean)

18:00~19:00 Grand Ballroom, 3F

Poster Session 4

May 30 (Thu)

07:00~08:30 Lobby, 3F

Registration

Oral Session 4 (OS4-1)

08:30~09:30 Room 325-AB

Conductive biomaterials

Chair KangJu Lee / *Chonnam National University, Korea, Republic of*

Dominic Glover / *University of New South Wales, Australia*

Oral Presenter 1
08:30 OS4-1-1
Injectable PEDOT:PSS/Acetic acid-based conductive hydrogels for minimally invasive neural electrodes
Ines Kusen / *Imperial College London, United Kingdom*

Oral Presenter 2
08:40 OS4-1-2
Fabrication of electronically conductive metalloprotein nanowires for bio-electronics and bio-interfacing
Dominic Glover / *University of New South Wales, Australia*

Oral Presenter 3
08:50 OS4-1-3
Capacitive-coupling-responsive hydrogel scaffolds offering wireless in situ electrical stimulation promotes nerve regeneration
Ping Wu / *Wenzhou Medical University, China*

Oral Presenter 4
09:00 OS4-1-4
Surface engineered ultra-porous TiN for neural interfacing electrode
Bertram Mallia / *University of Malta, Malta*

Oral Presenter 5
09:10 OS4-1-5
Injectable and conductive hyaluronic acid hydrogels for tissue repair and closed-loop robot-assisted rehabilitation.
Subin Jin / *Sungkyunkwan University, Korea, Republic of*

Oral Session 4 (OS4-2)

08:30~09:30 Room 325-CD

Technology for biofabrication 2

Chair Hee-Gyeong Yi / *Dept. of Convergence Biosystems Engineering/ Chonnam National University, Korea, Republic of*

Shangjing Xin / *Zhejiang University, China*

Oral Presenter 1 08:30 OS4-2-1
Photocrosslinkable hydrogel microparticle bioink for digital-light-processing 3D bioprinting
Shangjing Xin / *Zhejiang University, China*

Oral Presenter 2 08:40 OS4-2-2
3D humanized bioprinted model to study renal fibrosis: aiming at pushing research beyond failed clinical trials
Gabriele Addario / *MERLN - Maastricht University, Netherlands*

Oral Presenter 3 08:50 OS4-2-3
Fabrication of urinary-specific tissue-engineered construct by nan nanocellulose embedded hydrogel ink using extrusion-based bioprinting
Withdrawal
Sulob Roy Chowdhury / *Indian Instutitute of Science, Bangalore, India*

Oral Presenter 4 09:00 OS4-2-4
One-step Biohybrid Printing of 3D Tissue and Electrode for Uniform Electrical Stimulation to Pancreatic Islets
Jihwan Kim / *Pohang University of Science and Technology (POSTECH), Korea, Republic of*

Oral Presenter 5 09:10 OS4-2-5
In-Situ 3D Bioprinting of Blood Vessels
Maxime Comtois-Bona / *University of Ottawa Heart Institute, Canada*

Oral Session 4 (OS4-4)

08:30~09:30 Room 324-B

Biomaterials scaffolds 4

Chair Ipsita Roy / *University of Sheffield, United Kingdom*

Kenta Homma / *Osaka University, Japan*

Oral Presenter 1 08:30 OS4-4-1
Natural and sustainable biomaterials of bacterial origin and their biomedical applications
Ipsita Roy / *University of Sheffield, United Kingdom*

Oral Presenter 2 08:40 OS4-4-2
Fabrication of a visible-light responsive azobenzene-bearing scaffold for user-defined control of integrin-mediated mechanotransduction
Kenta Homma / *Osaka University, Japan*

Oral Presenter 3 08:50 OS4-4-3
Tailored gelatin methacrylic cryogels as versatile 3D freeform printing multifunctional approach
João Rodrigues / *University of Aveiro, Portugal*

Oral Session 4 (OS4-5)

08:30~09:30 Room 323

Biomaterials for medical applications 4

Chair Gerard Insley / *Uppsala University - Angstrom Institute, Sweden*

Yuhe YANG / *Department of Applied Biology and Chemical Technology, The Hong Kong Polytechnic University, Hong Kong SAR, China*

Oral Presenter 1 08:30 OS4-5-1
Injectable, self-contained, subaqueously crosslinking laminous adhesives for biophysical-chemical modulation of osteochondral microenvironment
Yuhe YANG / *Department of Applied Biology and Chemical Technology, The Hong Kong Polytechnic University, Hong Kong SAR, China*

Oral Presenter 2 08:40 OS4-5-2
In Situ Cartilage Tissue Engineering for Osteochondral Repair: A Multiphasic Approach
Serena Duchi / *2Aikenhead Centre of Medical Discovery, St Vincent's Hospital Melbourne, Fitzroy, Victoria 3065, Australia. 4Department of Surgery, The University of Melbourne, St Vincent's Hospital Melbourne, Fitzroy, Victoria 3065, Australia., Australia*

Oral Presenter 3 08:50 OS4-5-3
OctaCalcium Phosphate scaffolds modification and functionalisation delivers superior bone healing in-vitro and in vivo.
Gerard Insley / *Uppsala University - Angstrom Institute, Sweden*

Oral Presenter 4 09:00 OS4-5-4
Biofabricaiton of zonal articular cartilge grafts using microtissues primed in altered oxygen environments
Nadia Rodriguez / *Trinity College Dublin, Ireland*

Oral Presenter 5 09:10 OS4-5-5
3D printed trabecular porous tantalum spine fusion device: mechanical behavior and in vivo osteointegration
Jingzhou Yang / *Shenzhen Dazhou Medical Technology Co., Ltd.; Tsinghua University, China*

Oral Session 4 (OS4-6)

08:30~09:30 Room 322

Biomaterials for hard tissue regeneration

Chair HyunJin Kim / *Inha University, Korea, Republic of*

Hun Jin Jeong / *Columbia University, USA*

Oral Presenter 1 08:30 OS4-6-1
Nanopatterning of titanium implants via argon bombardment and its effects on bone formation
Andrea Mesa Restrepo / *The Pennsylvania State University, USA*

Oral Presenter 2 08:40 OS4-6-2
A novel suction device containing a collagen based biomaterial increases the osteogenic capacity of a bone graft obtained during surgery
Job Blokhuis / *Maastricht University, MERLN, Netherlands*

Oral Presenter 3 08:50 OS4-6-3
A self-growing osteoinductive polymeric framework facilitates endogenous osteogenesis by continuously capturing calcium ions
Withdrawal
Gonggong Lu / *Sichuan University, China*

Oral Presenter 4 09:00 OS4-6-4
Meniscus-Specific Bioreactor for Avascular Meniscus Healing under Physiological Loadings and Multi-tissue Crosstalk
Hun Jin Jeong / *Columbia University, USA*

Oral Presenter 5 09:10 OS4-6-5
Interactions between the location of endothelial cells and the process of bone vascularization
Yunju Kang / *Korea national university of transportation, Korea, Republic of*

Oral Session 4 (OS4-7)

08:30~09:30 Room 306-A

Bioactive Hydrogels for Therapeutic Applications

Chair: Minsuk Kwak / *Yonsei University, Korea, Republic of*

Yu-I Hsu / *Osaka University, Japan*

Oral Presenter 1 — 08:30 — OS4-7-1
Injectable Polymer-Nanoparticle Hydrogels Enable Sustained Modulation of Macrophage Phenotype
Shreya Soni / *Drexel University, USA*

Oral Presenter 2 — 08:40 — OS4-7-2
Bioengineered hyaluronan-based hydrogels enable longer-term culture of patient-derived peritoneal carcinomatosis explants for personalized drug testing
Zhuoran Wu / *Translational Tumor Engineering Laboratory, Department of Biomedical Engineering, National University of Singapore, Singapore*

Oral Presenter 3 — 08:50 — OS4-7-3
Development of pH-Responsive Poly(γ-glutamic acid) Hydrogels by Enzymatic Cross-Linking for Drug Delivery
Yu-I Hsu / *Osaka University, Japan*

Oral Presenter 4 — 09:00 — OS4-7-4
Nanocomposite hydrogels for the treatment of rheumatoid arthritis (RA)
Xiaodan Sun / *School of Materials Science and Engineering, Tsinghua University, China*

Oral Presenter 5 — 09:10 — OS4-7-5
Innovative multifunctional hydrogel-based system for local delivery of temozolomide
Aleksandra Krajcer / *Jagiellonian University, Poland*

Oral Session 4 (OS4-8)

08:30~09:30 Room 306-B

Immunmodulatory Biomaterials

Chair: Wooram Park / *Sungkyunkwan University, Korea, Republic of*

Alex Ho Pang Chan / *University of Sydney, Australia*

Oral Presenter 1 — 08:30 — OS4-8-1
Role of the type 1 interferon response in humoral immunity elicited by self-replicating RNA vaccines
B.J. Kim / *MIT, USA*

Oral Presenter 2 — 08:40 — OS4-8-2
Bioconjugated Injectable Granular Hydrogels for Regulatory T Cell Induction
Kenneth Kim / *Drexel University College of Medicine, USA*

Oral Presenter 3 — 08:50 — OS4-8-3
NLRP3 inflammasome as a therapeutic target to mitigate foreign body response for implanted biomaterials
Alex Ho Pang Chan / *University of Sydney, Australia*

Oral Presenter 4 — 09:00 — OS4-8-4
Immunological Modulation of Cardiac Fibrosis with Discrete Hyaluronic Acid Microstructures
Justin Zhong / *University of California, San Francisco, USA*

Oral Presenter 5 — 09:10 — OS4-8-5
Mussel adhesive protein fused with adjuvant peptide for potent immune response in vaccination
SUKWON JUNG / *Pohang University of Science and Technology, Korea, Republic of*

Oral Session 4 (OS4-9)

08:30~09:30 Room 314

Antimicrobial drug delivery 2

Chair: Alexey Vertegel / *Clemson University, USA*

Hanif Haidari / *Future Industries Institute, University of South Australia, Mawson Lakes SA 5095, Australia*

Oral Presenter 1 — 08:30 — OS4-9-1
Natural antimicrobial coatings for surgical implants
Alexey Vertegel / *Clemson University, USA*

Oral Presenter 2 — 08:40 — OS4-9-2
Bacteria-Activated Smart Antibacterial Hydrogel with On-Demand Release Based on Wound Microenvironment Changes
Hanif Haidari / *Future Industries Institute, University of South Australia, Mawson Lakes SA 5095, Australia*

Oral Presenter 3 — 08:50 — OS4-9-3
Biocompatibility of Small Molecule Modified Polyurethane Biomaterials that Interfere with Bacterial Intracellular Nucleotide Signaling
Li-Chong Xu / *The Pennsylvania State University, College of Medicine, USA*

Oral Presenter 4 — 09:00 — OS4-9-4
Lysozyme-assisted ultrasonic exfoliation of graphitic carbon nitride into highly stable nanosheets with enhanced bactericidal capacity
Da-Chuan Yin / *Northwestern Polytechnical University, China*

Oral Session 4 (OS4-10)

08:30~09:30 Room 321-A

Recent Advances in biomaterial Science and Engineering 5

Chair: Mikito Yasuzawa / *Tokushima University, Japan*

Bogdan Istrate / *Gheorghe Asachi Technical University of Iasi, Romania*

Oral Presenter 1 — 08:30 — OS4-10-1
Advanced surface characterization of Ti nano surface topographies created using femtosecond laser processing for dental implant application
Mrinal Gaurav Srivastava / *KU Leuven, Belgium*

Oral Presenter 2 — 08:40 — OS4-10-2
The impact of zinc on the usage properties of Mg-0.5Ca-xZn biodegradable alloys
Bogdan Istrate / *Gheorghe Asachi Technical University of Iasi, Romania*

Oral Presenter 3 — 08:50 — OS4-10-3
An Innovative Approach to Enhancing Biocompatibility of Metal Surfaces
Mikito Yasuzawa / *Tokushima University, Japan*

Oral Presenter 4 — 09:00 — OS4-10-4
Biomimetic coating utilizing sulfated poly(aspartic acid) for enhanced surface bioactivity with in vitro multimodal methods
Withdrawal
Cuong Hung Luu / *Griffith University, Australia*

Oral Presenter 5 — 09:10 — OS4-10-4
Fabrication of elastin materials with similar extensibility to skin tissues
Ei Yamamoto / *Kindai University, Japan*

Oral Session 4 (OS4-11)

08:30~09:30 Room 321-B

Lab-on-a-chip

Chair Youngeun Kim / *Seoul National University, Korea, Republic of*

Oral Presenter 1 08:30 OS4-11-1
Evolution of highly localized internal and external stress patterns during 3D tumor metastatic progression
Christina-Marie Boghdady / *McGill University, Canada*

Oral Presenter 2 08:40 OS4-11-2
3D co-culture of lymphoma-derived cells and vascular endothelial cells in Cell Dome
Ryotaro Kazama / *Osaka University, Japan*

Oral Presenter 3 08:50 OS4-11-3
Investigating the mechanisms of sonothrombolysis: Utilizing acoustic vortex tweezers and microbubbles
Ning-Hsuan Chen / *National Tsing Hua University, Chinese Taipei*

Oral Presenter 4 09:00 OS4-11-4
Real-time monitoring of a 3D blood-brain barrier model maturation and integrity with a sensorized microfluidic device
Maria Cristina Ceccarelli / *Istituto Italiano di Tecnologia, Italy*

Oral Presenter 5 09:10 OS4-11-5
Reagent-free covalent-immobilisation of biomolecules and improved cell response in PDMS-based microfluidic organ on chips
Deepu Ashok / *The University of Sydney, Australia*

Oral Session 4 (OS4-12)

08:30~09:30 Room 320-A

Nanobiomaterials 2

Chair Yeongjae Choi / *GIST, Korea, Republic of*

David J. Lundy / *Taipei Medical University, Chinese Taipei*

Oral Presenter 1 08:30 OS4-12-1
Extracellular Vesicles Derived from Serum-Converted Human Platelet Lysates: A Potential Therapeutic for Cardiac Ischaemia/Reperfusion Injury
David J. Lundy / *Taipei Medical University, Chinese Taipei*

Oral Presenter 2 08:40 OS4-12-2
A novel approach to target and remove fibrillar aggregates associated with exfoliation syndrome
Mehdi Ghaffari Sharaf / *Department of Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada, Canada*

Oral Presenter 3 08:50 OS4-12-3
Synthesis and selection enables directory-based, scalable data access in DNA memory
Woojin Kim / *Gwangju Institute of Science and Technology, Korea, Republic of*

Oral Presenter 4 09:00 OS4-12-4
Development of nanoparticles to induce M1-to-M2 switch as a treatment for aortic dissection in Fbn1 mutant mice
Maria Thea Rane Clarin / *Maria Thea Rane Clarin, Japan*

Oral Presenter 5 09:10 OS4-12-5
Boesenbergia rotunda based Nanoemulsions: Supplementation and Enhancement of Their Biological Properties for Re[illegible] Atopic Dermatitis
Withdrawal
Desy Liana / *College of Public Health Sciences, Chulalongkorn University, Thailand*

Oral Session 4 (OS4-13)

08:30~09:30 Room 320-B

Biomaterials for cancer therapy

Chair Yoosoo Yang / *Korea Institute of Science and Technology(KIST), Korea, Republic of*

Yunjiao Zhang / *South China University of Technology, China*

Oral Presenter 1 08:30 OS4-13-1
NanoTAC, a nano platform for pathogenic protein homeostasis regulation
Yunjiao Zhang / *South China University of Technology, China*

Oral Presenter 2 08:40 OS4-13-2
Cell-inspired drug delivery system
Hongjun Li / *Zhejiang University, China*

Oral Presenter 3 08:50 OS4-13-3
Design of Poly(cysteine)-Based Polymer Self-Assembling Drugs for the Chemotherapy of Nonalcoholic Steatohepatitis
Yuta Koda / *University of Tsukuba*

Oral Presenter 4 09:00 OS4-13-4
Targeted in-tumour chemotherapeutic delivery via electrophoretic release from conductive elastomer-based materials
Joshua Killilea / *Imperial College London, United Kingdom*

Oral Presenter 5 09:10 OS4-13-5
CMC Modified Mxene nanoflakes for Photothermal Therapy
Devendra Tiwari / *Indian Institute of Technology Jodhpur Rajasthan, India*

Oral Session 4 (OS4-14)

08:30~09:30 Room 315

Biomaterials and stem cells 2

Chair Donny Hanjaya-Putra / *University of Notre Dame, USA*

Rajendra Kumar Singh / *Institute of Tissue Regeneration Engineering (ITREN), Dankook University, Republic of Korea, Korea, Republic of*

Oral Presenter 1 08:30 OS4-14-1
Mesenchymal stem cells properties and early differentiation in the context of leukemia: response to matrix bound growth factors
Irene Arnaldos Pérez / *UGA, CEA, France*

Oral Presenter 2 08:40 OS4-14-2
Hyaluronic Acid Hydrogels with Phototunable Supramolecular Crosslinking for Spatially Controlled Lymphatic Tube Morphogenesis
Donny Hanjaya-Putra / *University of Notre Dame, USA*

Oral Presenter 3 08:50 OS4-14-3
Cytoskeletal-to-nuclear mechanoresponses in MSC via Electromagnetized Au-decorated nanofiber matrix under Electromagnetic field
Rajendra Kumar Singh / *Institute of Tissue Regeneration Engineering (ITREN), Dankook University, Republic of Korea, Korea, Republic of*

Oral Presenter 4 09:00 OS4-14-4
Combinatorial approach to enhance maturation of iPSCs – derived cardiomyocytes
Aleksandra Benko / *AGH University of Krakow, Poland*

Concurrent Symposium 13 (S13-1)

09:30~11:00 Room 325-AB

Biomaterial strategies for delivering biologics and therapeutic cells to transform cancer immunotherapy

Organizer Sergio Moya / *CIC biomaGUNE, Spain*

Chair Horacio Cabral / *University of Tokyo, Japan*

Sergio Moya / *CIC biomaGUNE, Spain*

Keynote Speaker
09:30 S13-1-1
Engineering cells for cancer immunotherapy
Quanyin Hu / *University of Wisconsin-Madison, USA*

Invited Speaker
09:55 S13-1-2
Multiscale design of 3D hydrogel bioink with ROS scavenging and inner retina tissue regeneration
Jiashing Ju / *National Taiwan University, Chinese Taipei*

10:10 S13-1-3
Bioengineering approaches to elucidate interactions between immune cells and cancer cells at the nanoscale
Hae Lin Jang / *Brigham and Women's Hospital, Harvard Medical School, USA*

Oral Presenter
10:25 S13-1-4
Enhancing Tumor-Targeting Bacteria Efficacy via Smart Polymer Shield Encapsulation
Diego Cattoni / *Centre de Biologie Structurale (CBS). INSERM U1054, CNRS UMR5048, University of Montpellier, Montpellier, France, France*

10:35 S13-1-5
Injectable granular hydrogels enable avidity-controlled cytokine delivery
Arielle D'Elia / *Drexel University, USA*

10:45 S13-1-6
Optimising the formulation of hydrogel-based non-viral carrier for gene delivery in the treatment of epidermolysis bullos
Zohreh MousaviNejad / *Dublin City University, Ireland*

Concurrent Symposium 13 (S13-2)

09:30~11:00 Room 325-CD

Injectable Hydrogels For Regenerative Medicine

Organizer Arghya Paul / *The University of Western Ontario, Canada*

Chair Arghya Paul / *The University of Western Ontario, Canada*

Akhilesh Gaharwar / *Texas A&M University, USA*

Keynote Speaker
09:30 S13-2-1
Bioinspired immunomodulatory materials for regenerative medicine
Milica Radisic / *University of Toronto, Canada*

Invited Speaker
09:55 S13-2-2
Dynamic covalently-crosslinked zwitterionic injectable hydrogels enabling functional muscle repair and bioprinting of tissue mimics
Todd Hoare / *McMaster University, Canada*

10:10 S13-2-3
Immediately injectable dental stem cells-laden chitosan/hyaluronic acid hydrogel for vascularized bone tissue regeneration
Sang Jin Lee / *The University of Hong Kong, Hong Kong SAR, China*

10:25 S13-2-4
3D printed stretchable skin scaffold for human joint
Jin Woo Lee / *Gachon University, Korea, Republic of*

Oral Presenter
10:40 S13-2-5
Time dependent Alginate Dialdehyde-Gelatin bioinks for cardiac regeneration
Elena Marcello / *Politecnico di Torino, Italy*

Concurrent Symposium 13 (S13-3)

09:30~11:00 Room 324-A

Self-assembled and stimuli responsive nanobiomaterials for delivery and targeting of biological drugs

Organizer Alejandro Sosnik / *Technion Israel Institute of Technology Technion Research and Development Foundation Ltd, Israel*

Chair HyunJin Kim / *Inha University, Korea, Republic of*

Keynote Speaker
09:30 S13-3-1
Self-assembling nanobiomaterials for the safe and efficient delivery of complex nucleic acid payloads: heteroatomic tuning and supramolecular insights
Omar F. Khan / *University of Toronto, Canada*

Invited Speaker
09:55 S13-3-2
Overcoming the barrier - Topical gene therapy of skin and lung
Sarah Hedtrich / *Berlin Institute of Health - Charite, Germany*

Oral Presenter
10:10 S13-3-3
H_2O_2-activatable and self-immolative prodrug nanoassemblies as novel nanomedicine with cooperative therapeutic actions
Dongwon Lee / *Jeonbuk National University, Korea, Republic of*

10:20 S13-3-4
Stimuli-responsive polymersomes-enabled activatable therapeutic nanoreactors for tumor-specific cancer therapy
Junjie Li / *Kyushu University, Japan*

10:30 S13-3-5
PEGylated Carbon Nanohorn-Based Nanocarrier for Targeted Delivery to Enhance Phototherapy Efficacy in Cancer Treatment
Fitriani Jati Rahmania / *National Chinese Taipei University of Science and Technology, Chinese Taipei*

10:40 S13-3-6
Mimicking amelogenesis to remineralize enamel through co-assembly of PTL fibrils and CMC/ACP
Yangyang Ye / *Tianjin Medical University, China, China*

Concurrent Symposium 13 (S13-4)

09:30~11:00 Room 324-B

New Biomaterials for Cardiovascular Tissue Engineering Hydrogels For Regenerative Medicine

Organizer Ngan Huang / *Stanford University, USA*

Chair Ngan Huang / *Stanford University, USA*

Yi Hong / *University of Texas at Arlington, USA*

Keynote Speaker
09:30 S13-4-1
Materials-driven in-situ cardiovascular tissue engineering
Carlijn Bouten / *Eindoven University of Technology, Netherlands*

Invited Speaker
09:55 S13-4-2
A new vascularization strategy to enhance the construction of islet organoids and their functionality
Deling Kong / *Nankai University, China*

10:10 S13-4-3
"Stiffness relaxing hydrogels modulate endothelial cell angiogenic function Stiffness relaxing hydrogels modulate endothelial cell angiogenic function"
Ngan Huang / *Stanford University, USA*

10:25 S13-4-4
Highly Efficient Direct Reprogramming of Adult Fibroblasts to Endothelial Cells by ETV2 and SOX17
Guohao Dai / *Northeastern University, USA*

Oral Presenter
10:40 S13-4-5
Comb-like copolymer with enhanced ROS scavenging improves border zone contractility and reduces myocardial remodeling after MI in sheep
Kevin E. Healy / *Department of Bioengineering, University of California-Berkeley, USA*

10:50 S13-4-6
Biomimetic collagen-based materials obtained by ice templating and topotactic fibrillogenesis for vascular repair
Francisco Fernandes / *Sorbonne University, France*

Concurrent Symposium 13 (S13-5)

09:30~11:00 Room 323

Microfabrication techniques for vascularization of tissue engineered constructs

Organizer Gulden Camci-Unal / *University of Massachusetts Lowell, USA*

Chair Gulden Camci-Unal / *University of Massachusetts Lowell, USA*

Syam Nukavarapu / *University of Connecticut, USA*

Keynote Speaker
09:30 S13-5-1
3D EXTRUDABLE HYBRID BIO(MATERIAL) INK FORMULATION: PROCESS SCIENCE AND BIOCOMPATIBILITY
Bikramjit Basu / *Indian Institute of Science, Bangalore, India*

Invited Speaker
09:55 S13-5-2
The Integration of Tailored Peptides into Bioinks via Photo Induced Crosslinking of Unmodified Proteins
Yeong-Jin Choi / *Korea Institute of Materials Science, Korea, Republic of*

10:10 S13-5-2
Application of advanced, various tissue-specific bioinks for engineering vascularized in vitro multiorgan/disease constructs
Jungbin Yoon / *POSTECH, Korea, Republic of*

Oral Presenter
10:25 S13-5-4
The use of proteomics in extrusion and volumetric-based biofabrication for optimal bone regeneration
Laurens Parmentier / *Ghent University, Belgium*

10:35 S13-5-5
~~Coaxial 3D Bioprinting of Blood Vessel Grafts and Vascular Disease Models~~ Withdrawal
Ge Gao / *School of Medical Technology, Beijing Institute of Technology, China*

10:45 S13-5-6
Mimicking the vascularized cortical bone: an advanced in vitro osteon model to study bone (patho)physiological conditions
Clarissa Tomasina / *Complex Tissue Regeneration Department, MERLN Institute for Technology-Inspired Regenerative Medicine, Maastricht University, Universiteitssingel 40, 6229 ET Maastricht, The Netherlands, Netherlands*

Concurrent Symposium 13 (S13-6)

09:30~11:00 Room 322

Regenerative Approaches for ENT Field

Organizer Seong Keun Kwon / *Seoul National University Hospital, Korea, Republic of*

Chair Seong Keun Kwon / *Seoul National University Hospital, Korea, Republic of*

Tsung-Lin Yang / *National Taiwan University, Chinese Taipei*

Keynote Speaker
09:30 S13-6-1
Strategies and considerations in regenerative medicine of the larynx
Nathan Welham / *University of Wisconsin-Madison, USA*

Invited Speaker
09:55 S13-6-2
Salivary gland regeneration
Tsung-Lin Yang / *National Taiwan University, Chinese Taipei*

10:10 S13-6-3
Tracheal reconstruction using an artificial trachea
Yo Kishimoto / *Kyoto University, Japan*

Oral Presenter
10:25 S13-6-4
Mesenchymal Stem Cell Spheroids for Inducing Angiogenesis
JI SUK CHOI / *Seoul National University Hospital, Korea, Republic of*

Concurrent Symposium 13 (S13-7)

09:30~11:00 Room 306-A

Calcium phosphate biomaterials design: Bioactivity, materials property and mechanisms of biomineralization

Organizer Nicola Doebelin / *RMS Foundation, Switzerland*

Chair Nicola Doebelin / *RMS Foundation, Switzerland*

Takahisa Anada / *Kyushu University, Japan*

Keynote Speaker
09:30 S13-7-1
Involvement of inorganic ion exchange and protein accumulation during spontaneous hydrolysis of octacalcium phosphate with enhancing new bone formation
Osamu Suzuki / *Tohoku University, Japan*

Invited Speaker
09:55 S13-7-2
Calcium phosphate-based biomineralizations: the physico-chemical point of vue
Christele Combes / *Institut National Polytechnique de Toulouse, France*

10:10 S13-7-3
In vivo mineralization to induce ectopic bone formation
Marc Bohner / *RMS Foundation, Switzerland*

Oral Presenter
10:25 S13-7-4
Chitosan-apatite wollastonite composites for bone tissue engineering formulated using chitosan solutions varied in ionic strength.
Meng Pan / *School of Engineering, Newcastle University, Newcastle upon Tyne, NE1 7RU, United Kingdom*

10:35 S13-7-5
Calcium phosphates as drug delivery vehicles for cancer treatment
Ilijana Kovrlija / *Riga Technical University, Latvia*

Concurrent Symposium 13 (S13-8)

09:30~11:00 Room 306-B

Biomaterial Design for Immunoengineering

Organizer Abhinav Acharya / *Arizona State University, USA*

Chair Junsang Doh / *Seoul National University, Korea, Republic of*

Keynote Speaker
09:30 S13-8-1
Multidimensional immunoengineering approaches to enhanced cancer immunotherapy
Li Tang / *EPFL, Switzerland*

Invited Speaker
09:55 S13-8-2
Research on the extrahepatic targeting delivery of siRNA therapeutics
Huining He / *School of Pharmacy, Tianjin Medical University, China*

10:10 S13-8-3
One stone fourbirds: application of ginsenosides to prepare multifunctional liposomal delivery system for cancer therapy
Jianxin Wang / *School of Pharmacy, Fudan University, China*

Oral Presenter
10:25 S13-8-4
Evaluation of an osteoinductive bone graft with submicron surface topography in a clinically-relevant sheep posterolateral lumbar spine fusion model
Nathan Kucko / *Kuros Biosciences, Netherlands*

10:35 S13-8-5
One Produces Multi: A Drug-free Cardiovascular Stent Functionalized with Tailored Collagen Supports in-situ Healing of Vascular Tissues
Haoshuang Wu / *Sichuan University, China*

10:45 S13-8-6
Photocrosslinked silk fibroin microgels and microgel scaffolds for biomedical applications
Jelena Rnjak-Kovacina / *University of New South Wales, Australia*

Concurrent Symposium 13 (S13-9)

09:30~11:00 Room 314

Biomaterials for Women's Reproductive Health

Organizer Shelly Peyton / *University of Massachusetts Amherst, USA*

Chair Shelly Peyton / *University of Massachusetts Amherst, USA*

Michelle Oyen / *Washington University in St. Louis, USA*

Keynote Speaker
09:30 S13-9-1
Bridging the Gap: 3D High Throughput Screening Models for Gynecological Disease
Kaitlin Fogg / *Oregon State University, USA*

Invited Speaker
09:55 S13-9-2
Tina Chowdhury / *Queen Mary University of London, United Kingdom*

10:10 S13-9-3
Matrix glycation regulates neurodegeneration in the aged neurovascular-on-a-chip
Minjeong Jang / *Korea Institute of Radiological Medical Sciences, Korea, Republic of*

Oral Presenter
10:25 S13-9-4
Development of a bioabsorbable implant capable of regenerating adipose tissue for breast reconstruction
Shuichi Ogino / *Shiga University of Medical Science, Japan*

10:35 S13-9-5
Mimicking extracellular matrix based scaffolds as functional biomaterials for supporting surgical application in disease tissue removal
Jirut Meesane / *Prince of Songkla University, Thailand*

10:45 S13-9-6
Revolutionizing Bone-on-a-Chip: Novel approaches in three-dimensional tissue engineering through protein-based 3D scaffolds
Christoph Naderer / *School of Medical Engineering and Applied Social Sciences, University of Applied Sciences Upper Austria, Garnisonstraße 21, 4020 Linz, Austria, Austria*

Concurrent Symposium 13 (S13-10)

09:30~11:00 Room 321-A

Bioadhesive technologies for tissue repair and regeneration

Organizer Jianyu Li / *McGill University, Canada*

Chair Yu Han Lee / *Harvard Medical School, USA*

Keynote Speaker
09:30 S13-10-1
Integrating adhesion and hemostasis for tissue repair
Malcolm Xing / *University of Manitoba, Canada*

Oral Presenter
09:55 S13-10-2
Engineering highly cellularized materials with click clotting strategy
Tianqin Ning / *McGill University, Canada*

10:05 S13-10-3
Development and characterization of a bioresorbable bone adhesive using calcium phosphate cement, phosphoserine, and polydopamine nanoparticles
Feng CHAI / *Univ Lille, France*

10:15 S13-10-4
Bioinspired Adhesives: Unlocking the Potential of Phosphoserine - Modified Calcium Phosphates for Effective Bone Repair and Regeneration
Antzela Tzagiollari / *Dublin City University, Ireland*

10:25 S13-10-5
Adhesive muscle extracellular matrix hydrogels for functional regeneration in skeletal muscle atrophy
Mi Jeong Lee / *Yonsei University, Korea, Republic of*

Concurrent Symposium 13 (S13-11)

09:30~11:00 Room 321-B

Biomaterials for inflammatory bowel disease therapy

Organizer Dong Yun Lee / *Hanyang University, Korea, Republic of*

Chair Joonseok Lee / *Hanyang University, Korea, Republic of*

Jung Seung Lee / *Sung Kyun Kwan University, Korea, Republic of*

Keynote Speaker
09:30 S13-11-1
Regulatory mechanism of the gut epithelial barrier function in inflammatory bowel diseases
Sang H. Rhee / *Oakland University, USA*

Invited Speaker
09:55 S13-11-2
Oral TNF-α siRNA delivery via milk-derived exosomes for effective treatment of inflammatory bowel disease
Yoosoo Yang / *Korea Institute of Science and Technology, Korea, Republic of*

10:10 S13-11-3
Mesalamine prodrug nanoassemblies for the treatment of inflammatory bowel disease
Sun Hwa Kim / *Korea Institute of Science and Technology, Korea, Republic of*

Oral Presenter
10:25 S13-11-4
Uniform gold nanostructure formation via weakly adsorbed gold films and thermal annealing for reliable localized surface plasmon resonance-based DNase-I detection
Joon-Ha Park / *Chung-Ang University, Korea, Republic of*

10:35 S13-11-5
Submucosal hydrogel for spring-mediated intestinal lengthening
Narelli de Paiva Narciso / *Stanford University, USA*

10:45 S13-11-6
Leveraging polymer-derived drug delivery systems to combat inflamamtory bowel disease
Yuji Pu / *Sichuan University, China*

Concurrent Symposium 13 (S13-12)

09:30~11:00 Room 320-A

Gelatin and collagen based biomaterials: advances towards pharmaceutical and clinical translation of tissue biofabrication

Organizer Jos Olijve / *Rousselot Biomedical, Netherlands*

Chair Paulina Nunez Bernal / *University Medical Center Utrecht, Netherlands*

Jos Olijve / *Rousselot Biomedical, Netherlands*

Keynote Speaker
09:30 S13-12-1
Gelatin methacryloyl (GelMA): A versatile material for tissue engineering and regenerative medicine applications
Ali Khademhosseini / *Terasaki Institute, USA*

Invited Speaker
09:55 S13-12-2
Enhancing performance as a corneal adhesive restorative material: Development of photocurable cornea-derived decellularized extracellular matrix hydrogels with gelatin methacryloy
Juyoung Park / *BioBricks, Korea, Republic of*

10:10 S13-12-3
Gelatin advances and clinical translation of tissue biofabrication, the endotoxin story.
Jos Olijve / *Rousselot Biomedical, Netherlands*

10:25 S13-12-4
Oxygen-generating Tissue Adhesives for Wound Management
Kyung Min Park / *Incheon National University, Korea, Republic of*

10:40 S13-12-5
Development of tissue-specific bioink and advanced bioprinting technology for engineering in vitro human tissue model
Hee-Gyeong Yi / *Dept. of Convergence Biosystems Engineering/ Chonnam National University, Korea, Republic of*

Concurrent Symposium 13 (S13-13)

09:30~11:00 Room 320-B

Harnessing Biomaterials Strategies to Model Lung Disease, Repair Damaged Tissue, and Deliver Drugs for Treatment

Organizer Chelsea Magin / *University of Colorado, Denver | Anschutz, USA*

Chair Chelsea Magin / *University of Colorado, Denver | Anschutz, USA*

Riccardo Gottardi / *University of Groningen, Netherlands*

Keynote Speaker 09:30 S13-13-1
Enhancing Therapeutic Efficacy in Lung Diseases: Tailoring Drug Carriers for Better Results
Jaehong Key / *Yonsei University Mirae Campus, Korea, Republic of*

Invited Speaker 09:55 S13-13-2
Advances in biomaterials for modeling in vivo microenvironments in human lung disease
Janette Burgess / *University of Groningen, Netherlands*

10:10 S13-13-3
Engineering 3D Lung Tissue Models to Improve Drug Discovery and Validation
Chelsea Magin / *University of Colorado, Denver | Anschutz, USA*

10:25 S13-13-4
Advancing Lung Tissue Engineering with Digital Bioprinting
Sungjune Jung / *POSTECH, Korea, Republic of*

Oral Presenter 10:40 S13-13-5
Development of 3D-shaped cell delivering patch for skin regeneration
Gunjae Jeong / *The Catholic University of Korea, Korea, Republic of*

Concurrent Symposium 13 (S13-14)

09:30~11:00 Room 315

Clinical and Pre-clinical Application of Biomaterials toward Next-Generation Medicine

Organizer Atsushi Mahara / *Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute, Japan*

Chair Atsushi Mahara / *Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute, Japan*

Yuji Teramura / *Cellular and Molecular Biotechnology Research Institute (CMB), National Institute of Advanced Industrial Science and Technology, Japan*

Keynote Speaker 09:30 S13-14-1
Enhancing kidney transplantation: Addressing ischemia-reperfusion injury through ex vivo cell surface engineering with a novel amphiphilic polymer
Alireza Biglarnia / *Lund University, Sweden*

Invited Speaker 09:55 S13-14-2
Development of a high-hydrostatic pressure device for nevus tissue inactivation and dermal regeneration for the treatment of giant melanocytic nevus
Naoki Morimoto / *Department of Plastic and Reconstructive Surgery, Graduate School of Medicine and Faculty of Medicine, Kyoto University, Japan*

10:10 S13-14-3
Cell surface engineerinf for transplantation therapy
Yuji Teramura / *Cellular and Molecular Biotechnology Research Institute (CMB), National Institute of Advanced Industrial Science and Technology, Japan*

Oral Presenter 10:25 S13-14-4
Hydrogel-delivery of stem cell-derived neurons to repair the injured adult cervical spine
Vanessa Doulames / *Stanford University, USA*

10:35 S13-14-5
Pre-clinical evaluation of a new class III biodegradable stent for the treatment of urethral stricture
Yurena Polo Arroyabe / *Polimerbio SL, Spain*

10:45 S13-14-6
Development and clinical application of biodegradable silk protein bone screw
Yafei Feng / *Xijing Hospital, China*

11:00~11:20

Coffee Break

Concurrent Symposium 14 (S14-1)

11:20~12:50 Room 325-AB

Bioinspired supramolecular Biomaterials

Organizer Chris Sammon / *Sheffield Hallam University & RSC Biomaterials Chemistry Interest Grouo, United Kingdom*

Chair Sanjukta Deb / *King's College London, United Kingdom*

Jacek Wychowaniec / *AO Research Institute Davos, Switzerland*

Keynote Speaker 11:20 S14-1-1
Designing Peptide Based Hydrogels Scaffolds for Biomedical Apllications.
Alberto Saiani / *University of Manchester, United Kingdom*

Invited Speaker 11:45 S14-1-2
DNA-based Superstructures via Module-assembly of DNA Scaffolds for Biomedical Applications
Jong Bum Lee / *University of Seoul, Korea, Republic of*

12:00 S14-1-3
Self-assembled hyaluronic acid nanomedicine for treatment of chronic inflammatory diseases: Beyond drug carriers
Wook Kim / *Ajou University, Korea, Republic of*

Oral Presenter 12:15 S14-1-4
Self-assembly of Tyrosine-containing Peptides into Distinct Nanostructures is Key in Determining Inflammatory Response of Macrophages
Jacek Wychowaniec / *AO Research Institute Davos, Switzerland*

12:25 S14-1-5
Modular protein hydrogels for biofabrication
Dalia Dranseike / *ETH Zurich, Switzerland*

Concurrent Symposium 14 (S14-2)

11:20~12:50 Room 325-CD

Cell Encapsulation and 3D Digital Assembly for Basic and Applied Biomedicine

Organizer Liheng Cai / *University of Virginia, USA*

Chair Liheng Cai / *University of Virginia, USA*

Jae-Won Shin / *University of Illinois at Chicago, USA*

Keynote Speaker 11:20 S14-2-1
Droplet microfluidics for single cell analysis for biomedicine
David Weitz / *Harvard University, USA*

Invited Speaker 11:45 S14-2-2
Scaling 3D Bioprinting for Whole Organ Engineering
Mark Skylar-Scott / *Stanford University, USA*

12:00 S14-2-3
Voxelated Bioprinting: Digital Assembly of Viscoelastic Bio-ink Droplets
Liheng Cai / *University of Virginia, USA*

Oral Presenter 12:15 S14-2-4
Programmable collective self-assembly of cells in heterogeneous space via magneto-Archimedes effect
Tanchen Ren / *Department of Cardiology, State Key Laboratory of Transvascular Implantation Devices, Cardiovascular Key Laboratory of Zhejiang Province, The Second Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou, 310009, China, China*

12:25 S14-2-5
Development of a Biohybrid 3D-Printed Muscular Tissue-Sensor Platform for Excitation-Contraction Coupling Monitoring
Uijung Yong / *Future IT Innovation Laboratory, POSTECH, Korea, Republic of*

12:35 S14-2-6
Development of drug-eluting contact lenses via 3D bioprinting to support corneal healing
Mario Milazzo / *Department of Civil and Industrial Engineering, University of Pisa, Italy*

Concurrent Symposium 14 (S14-3)

11:20~12:50 Room 324-A

Stimuli-Responsive Macromolecular Assembly for Theranostics

Organizer Beom Jin Kim / *University of Ulsan, Korea, Republic of*

Chair Beom Jin Kim / *University of Ulsan, Korea, Republic of*

Ja-Hyoung Ryu / *UNIST, Korea, Republic of*

Keynote Speaker (30 min) 11:20 S14-3-1
Enzyme-Instructed Intracellular Peptide Assemblies
Bing Xu / *Brandeis University, USA*

Invited Speaker 11:50 S14-3-2
Selective death of cancer cells induced by the self-assembly of a peptide amphiphile that is responsive to an overexpressed kinase
Tatsuo Maruyama / *Kobe University, Japan*

12:05 S14-3-3
New strategies based on self-assembly for Theranostics
Gaolin Liang / *Southeast University, China*

12:20 S14-3-4
Enzyme assisted peptide folding and self-assembly
Zhimou Yang / *Nankai University, China*

12:35 S14-3-5
Proton-Catalyzed Self-Assembly to Control Intracellular Assemblies Formation of Peptide
Huaimin Wang / *Westlake University, China*

Concurrent Symposium 14 (S14-4)

11:20~12:50 Room 324-B

Biomaterial models of the hierarchical tumor microenvironment

Organizer Brendan Harley / *University of Illinois at Urbana-Champaign, USA*

Chair Brendan Harley / *University of Illinois at Urbana-Champaign, USA*

Alireza Sohrabi / *The University of Texas at Austin, USA*

Keynote Speaker 11:20 S14-4-1
Deconstructing a complex microenvironment through designer nano- and micro-engineered matrices
Kristopher A. Kilian / *UNSW Sydney (Australia), Australia*

Invited Speaker 11:45 S14-4-2
Microenvironmental Stiffness Induces Metabolic Reprogramming in Glioblastoma
Alireza Sohrabi / *The University of Texas at Austin, USA*

Oral Presenter 12:00 S14-4-3
A PDA-Functionalized 3D Lung Scaffold Bioplatform to Construct Complicated Breast Tumor Microenvironment for Anticancer Drug Screening and Immunotherapy
Yongtao Wang / *Shanghai Univeristy, China*

12:10 S14-4-4
Engineering bioelectronic scaffolds for hosting and monitoring 3D tissue models
Emma Sumner / *Department of Materials Science and Metallurgy, University of Cambridge, United Kingdom*

12:20 S14-4-5
Liposome-loaded composite scaffolds for stepwise synergistic photothermal and chemotherapy of breast cancer
Huajian Chen / *National Institute for Materials Science, Japan*

12:30 S14-4-6
Remote stimuli-responsive nanomaterials in various morphologies for stem cell regulation and cancer therapy
Hyunsik Hong / *Korea University, Korea, Republic of*

Concurrent Symposium 14 (S14-5)

11:20~12:50 Room 323

Innovative biomaterials for neural applications

Organizer Sarah Stabenfeldt / *Arizona State University, USA*

Chair Sarah Stabenfeldt / *Arizona State University, USA*

Abhay Pandit / *University of Galway, Ireland*

Keynote Speaker 11:20 S14-5-1
3D printing complex human neural tissues
Stephanie Willerth / *University of Victoria, Canada*

Invited Speaker 11:45 S14-5-2
Engineering Materials for Cell Transplantation and Reprogramming in the Brain
David Nisbet / *University of Melbourne, Australia*

12:00 S14-5-3
Biomaterial and drug-delivery based approach for spinal cord injury and for neuropathic pain
Seil Sohn / *Cha university, Korea, Republic of*

Oral Presenter 12:15 S14-5-4
Highly piezoelectric, biodegradable and flexible amino acid nanofibers for medical applications
Thanh Nguyen / *University of Connecticut, USA*

12:25 S14-5-5
Porous poly(glycerol sebacate)-methacrylate nerve guidance conduits for peripheral nerve regeneration
Louis Johnson / *University of Sheffield, United Kingdom*

12:35 S14-5-6
Transient and minimally invasive electronics platform for brain interfaces
Jae-Young Bae / *Seoul National University, Korea, Republic of*

Concurrent Symposium 14 (S14-6)

11:20~12:50 Room 322

Advanced Biomaterials with sensing properties to overcome the XXI century health challenges

Organizer Maria Grazia Raucci / *National Research Council of Italy, Italy*

Chair Maria Grazia Raucci / *National Research Council of Italy, Italy*

Ana Paula Pego / *European Society for Biomaterials, Portugal*

Keynote Speaker 11:20 S14-6-1
FLIM and Raman spectroscopy-based analysis of cells and tissues
Katja Schenke-Layland / *Eberhard Karls University Tubingen, Germany*

Invited Speaker 11:45 S14-6-2
Peptide Aptamer-functionalised Biomaterials: a Novel and Industrially-sustainable Class of Biospecific Substrates for Diagnostic and Theranostic Devices.
Matteo Santin / *University of Brighton, United Kingdom*

12:00 S14-6-3
Novel approaches in biosensing and diagnostics for infectious diseases
Hyun Jung Chung / *Korea Advanced Institute of Science and Technology(KAIST), Korea, Republic of*

Oral Presenter 12:15 S14-6-4
Polydopamine nanoparticles as an organic biodegradable theranostic platform for the treatment of colorectal cancer
Matteo Battaglini / *Istituto Italiano di Tecnologia, Smart Bio-Interfaces, Viale Rinaldo Piaggio 34, 56025 Pontedera, Italy*

12:25 S14-6-5
Rapid identification of therapeutic bacteriophages for personalized phage therapy using high throughput ATP bioluminescence assay
Fereshteh Bayat / *McMaster University, Canada*

Concurrent Symposium 14 (S14-7)

11:20~12:50 Room 306-A

Smart zwitterionic polymer biomaterials

Organizer Yasuhiko Iwasaki / *Kansai University, Japan*

Chair Yasuhiko Iwasaki / *Kansai University, Japan*

Akifumi Kawamura / *Kansai University, Japan*

Keynote Speaker 11:20 S14-7-1
Bio-inspired Zwitterionic Polymer Biomaterials for Advanced Medical Applications
Yung Chang / *Deputy director, R&D center for membrane technology and Department of chemical engineering, Chung Yuan Christian University, Chinese Taipei*

Invited Speaker 11:45 S14-7-2
Effect of hydrated structure of zwitterionic polymer on ice and frost formation from the hydrogel-coated surfaces
Ji-Hun Seo / *Department of Materials Science and Engineering, Korea University, Korea, Republic of*

12:00 S14-7-3
Zwitterionic materials that resist the foreign body response
Peng Zhang / *Department of Polymer Science and Engineering, Zhejiang University, China*

Oral Presenter 12:15 S14-7-4
Self-healing property of phospholipid polymer micro-hydrogel pieces with seamless biointerface technology
Tomohiro KONNO / *Tohoku University, Japan*

12:25 S14-7-5
Design of submicron-scale smart capsules for intracellular delivery
Akifumi Kawamura / *Kansai University, Japan*

12:35 S14-7-6
Reduction of osteoclastic resorption by bone-targeting polyphosphoesters
Yasuhiko Iwasaki / *Kansai University, Japan*

Concurrent Symposium 14 (S14-8)

11:20~12:50 Room 306-B

Molecular assembly control for supramolecular nano-biomaterials

Organizer Jun Shik Choi / *Korea Institute of Radiological and Medical Sciences (KIRAMS), Korea, Republic of*

Chair Jun Shik Choi / *Korea Institute of Radiological and Medical Sciences (KIRAMS), Korea, Republic of*

Kohei Sato / *Kwansei Gakuin University, Japan*

Keynote Speaker 11:20 S14-8-1
Self-Assembled Peptide Biomaterials for Delivery and Responsiveness
Yong-beom Lim / *Yonsei University, Korea, Republic of*

Invited Speaker 11:45 S14-8-2
Development of supramolecular transmembrane channels and transporters
Kohei Sato / *Kwansei Gakuin University, Japan*

12:00 S14-8-3
Two-dimensional supramolecular materials
Yongju Kim / *Korea University, Korea, Republic of*

Oral Presenter 12:15 S14-8-4
Facilitated transdermal delivery using self-assembled skin-penetrating peptides
Woo-jin Jeong / *Inha University, Korea, Republic of*

12:25 S14-8-5
Supramolecular peptide nanofiber modifications for improving oral delivery
Mia Woodruff / *Duke University, USA*

Concurrent Symposium 14 (S14-9)

11:20~12:50 Room 314

Advanced Nanobiomaterials for Biomedical Applications

Organizer Dong-Wook Han / *Pusan National University, Korea, Republic of*

Chair Dong-Wook Han / *Pusan National University, Korea, Republic of*

Yu Suk Choi / *The University of Western Australia, Australia*

Keynote Speaker 11:20 S14-9-1
Chuanbin Mao / *The Chinese University of Hong Kong, Hong Kong SAR, China*

Invited Speaker 11:45 S14-9-2
Jin-Woo Oh / *Pusan National University, Korea, Republic of*

12:00 S14-9-3
Samuel Maher / *University of Western Australia, Australia*

Oral Presenter 12:15 S14-9-4
Grant Scull / *The Joint Department of Biomedical Engineering at UNC-Chapel Hill and NC State University, Research Triangle Park, NC; Comparative Medicine Institute, Raleigh, NC, USA*

12:25 S14-9-5
Yerim Jang / *KU-KIST Graduate School of Converging Science and Technology, Korea University, Korea, Republic of*

Concurrent Symposium 14 (S14-10)

11:20~12:50 Room 321-A

Advances in Antimicrobial and Antibiofilm Biomaterials

Organizer Anita Shukla / *Brown University, USA*

Chair Anita Shukla / *Brown University, USA*

Rachit Agarwal / *Indian Institute of Science, India*

Keynote Speaker 11:20 S14-10-1
Antibacterial polymers and their applications as antibiotic replacements, antibiofilm agents, and for device applications
Mary Chan-Park / *Nanyang Technological University, Singapore*

Invited Speaker 11:45 S14-10-2
Strain-selectivity in nanomaterial-based antibacterial agent
Mrinmoy De / *Indian Institute of Science, India*

Oral Presenter 12:00 S14-10-3
Novel Platelet Storage Devices to Combat Bacterial Contamination and Growth
Kai Yu / *Department of Pathology and Lab Medicine and Centre for Blood research, University of British Columbia, Canada*

12:10 S14-10-4
Antibacterial properties of multiple antigenic peptides (MAP) based on polyarginine: from experiments to molecular dynamic simulations
Philippe Lavalle / *Inserm / University of Strasbourg, France*

12:20 S14-10-5
Dynamic titanium surface adapts to multiple service stages by orchestrating reactive polymers and antimicrobial peptides Withdrawal
Lin Wang / *South China University of Technology, China*

12:30 S14-10-6
Properties of nano-magnesium oxide modified antibacterial light-curing adhesive resin
Jing Fu / *Qingdao University, China*

Concurrent Symposium 14 (S14-11)

11:20~12:50 Room 321-B

Fostering international multidisciplinary collaboration in biomaterials research: Australasia- Germany case study (sponsored by Maverick)

Organizer Khoon Lim / *University of Sydney, Australia*

Chair Michael Gelinsky / *Technische Universität Dresden, Germany*

Jelena Rnjak-Kovacina / *University of New South Wales, Australia*

Keynote Speaker
11:20 S14-11-1
Juergen Groll / *University of Würzburg, Germany*

Invited Speaker
11:45 S14-11-2
Structure, stimulation, and close interactions: keys to enhancing outcomes from international and multidisciplinary tissue engineering research
Andrea O'Connor / *University of Melbourne, Australia*

12:00 S14-11-3
What are the factors that drive effective international collaborations?
Helmut Thissen / *Commonwealth Scientific and Industrial Research Organisation, Australia*

Oral Presenter
12:15 S14-11-4
Bioprinting Corneal Tissue Mimics *In Situ* using Visible-Light Photopolymerizable Bioinks
Daniela Duarte Campos / *Heidelberg University, ZMBH Center for Molecular Biology, Bioprinting & Tissue Engineering Group, Germany*

12:25 S14-11-5
Dual-stage crosslinking hyaluronic acid-based bioinks for bioprinting advanced cartilaginous tissues
Joerg Tessmar / *University of Würzburg - Department for Functional Materials in Medicine, Germany*

Concurrent Symposium 14 (S14-12)

11:20~12:50 Room 320-A

Craniofacial tissues and implants

Organizer Do-Gyoon Kim / *Ohio State University, USA*

Chair Do-Gyoon Kim / *Ohio State University, USA*

Hiroshi Kamioka / *Okayama University, Japan*

Keynote Speaker
11:20 S14-12-1
Dental Implants: from titanium to zirconia
Jung Suk Han / *Seoul National University, Korea, Republic of*

Invited Speaker
11:45 S14-12-2
Engineering Bio-inspired Materials for Multicellular-Mediated Bone Regeneration
Ching-Chang Ko / *The Ohio State University, USA*

12:00 S14-12-3
***In vitro* synthesis of artificial bone tissue that reproduces a three-dimensional hierarchical structure**
Takuya Matsumoto / *Okayama University, Japan*

12:15 S14-12-4
Advances in mesenchymal stem cell spheroid research: Enhancing biological function and therapeutic potential in regenerative medicine
Jun-Beom Park / *The Catholic University of Korea, Korea, Republic of*

Oral Presenter
12:30 S14-12-5
Potential of neodymium-Iron-boron magnets in aligner therapy
Toru Deguchi / *University of Louisville, USA*

Concurrent Symposium 14 (S14-13)

11:20~12:50 Room 320-B

Creating 3D architectures to facilitate organ regeneration

Organizer Qi Gu / *Beijing Institute for Stem Cell and Regenerative Medicine, China*

Chair Qi Gu / *Beijing Institute for Stem Cell and Regenerative Medicine, China*

Zhong Alan Li / The Chinese University of Hong Kong, Hong Kong SAR, China

Keynote Speaker (30 min)
11:20 S14-13-1
Developing Personalized Vein-Chips for Enhanced Cerebral Venous Sinus Thrombosis Diagnosis using a Movable Type Manufacturing Technique
Arnold Lining Ju / *University of Sydney, Australia*

S14-13-2
Exploring controlled cell movement to create engineered organs with natural properties
Qi Gu / *Beijing Institute for Stem Cell and Regenerative Medicine, China*

Oral Presenter
12:20 S14-13-3
Designing gradient bioinks for the musculoskeletal interface
Lesthuruge Sithmie De Silva / *IMPACT, School of Medicine, Deakin University, Waurn Ponds, VIC 3216, Australia, Australia*

12:30 S14-13-4
Bioprinting-assisted Tissue Assembly for Studying Cardiac Pathophysiology
Dong Gyu Hwang / *POSTECH, Korea, Republic of*

12:40 S14-13-5
Gastric-cancer-on-a-chip for predicting precision anti-cancer therapy.
Jisoo Kim / *Pohang University of Science and Technology, Korea, Republic of*

12:50~13:00

Break

13:00~14:00 Convention Hall, 5F

Closing Ceremony

Highlight Program

Fellow, Biomaterials Science and Engineering

May 28 (Tue) 12:20~13:30 306-A

FBSE WBC - Fellows Debate

Organizer Rui Reis / *3B's Research Group/Univ. Minho, Portugal*

Invited Speaker
- 12:30 LS1-6-1 Milica Radisic / *University of Toronto, Canada*
- 12:40 LS1-6-2 Changyou Gao / *Zhejiang University, China*
- 12:50 LS1-6-3 Laura Poole-Warren / *The University of New South Wales, Australia*
- 13:00 LS1-6-4 Bikramjit Basu / *Indian Institute of Science, Bangalore, India*

Young biomaterial scientist mentoring

May 28 (Tue) 12:20~13:20 323

Young Scientist Forum (YSF) I: Successful career development

Speaker
- 12:20 LS1-4-1 **My Faculty Odyssey: A Polymer Love Story** Elizabeth Cosgriff Hernandez / *University of Texas at Austin, USA*
- 12:35 LS1-4-2 **High and Low Tides in Science: navigating through the sea with serendipity in a daring adventure** Lorenzo Moroni / *Maastricht University, Netherlands*
- 12:50 LS1-4-3 **Building a meaningful peer-support network for greater success** Khoon Lim / *University of Sydney, Australia*

May 29 (Wed) 12:20~13:20 323

Young Scientist Forum (YSF) II: The past, present, and future of Biomaterials Research (meeting mentors)

Speaker
- 12:20 LS2-4-1 **CRITICAL TURNING POINTS IN BIOMATERIALS RESEARCH FROM 1980 TO TODAY** Joachim Kohn / *Rutgers University/IUSBSE, USA*
- 12:35 LS2-4-2 **Futuring Neurosciences with Biomaterials** Ana Paula Pego / *i3S / INEB - University of Porto, Portugal*
- 12:50 LS2-4-3 **A Career in Research: Still Opportune? An introspective journey into the meaning of becoming a scientist in the 21th century** Diego Mantovani / *Laval University, Canada*

May 30 (Thu) 12:20~13:20 323

Young Scientist Forum (YSF) III: Experience from academic research to commercialization, start-up company

Speaker
- 12:20 LS3-3-1 **Moving Research from the Lab to Startups** Andrés J. García / *Georgia Institute of Technology, USA*
- 12:35 LS3-3-2 **From basic research to clinic application - a innovation story about a novel cardiovascular stent** Nan Huang / *Southwest Jiaotong University, China*
- 12:50 LS3-3-3 **Technopreneurship: Building your future with knowledge and know-how** Matteo Santin / *University of Brighton, United Kingdom*

Biomaterials research in woman health

May 28 (Tue) 12:20~13:20 324-A

Women in Biomaterials Science

Speaker
- 12:20 LS1-3-1 **Strength in Diversity: A BioEngineering Journey** Hala Zreiqat / *University of Sydney, Australia*
- 12:35 LS1-3-2 **Past, Present, and Future States of Korean Woman Scientists in Korean Biomaterials Research Society** Sung Yun Yang / *Chungnam National University, Korea, Republic of*
- 12:50 LS1-3-3 **A fascinating journey in Biomaterials for Tissue Engineering** Maria Chatzinikolaidou / *Foundation for Research and Technology Hellas (FORTH) Institute of Electronic Structure and Laser 100, Greece*

May 28 (Tue) 16:30~18:00 314

Biomaterials for the Maternal-Fetal Interface

Organizer Samantha Zambuto / *Washington University in St. Louis, USA*

Keynote Speaker
- 16:30 S6-9-1 **Biomimetic scaffolds for vaginal tissue engineering** Samantha Zambuto / *Washington University in St. Louis, USA*

Oral Presenter
- 17:10 S6-9-2 **Selection of a kidney cell line for organoid studies in collagen scaffolds** Emrys Thursfield / *Department of Materials Science and Metallurgy, University of Cambridge, Cambridge / AstraZeneca, United Kingdom*
- 17:20 S6-9-3 **Generation of low immunogenic stem cell by induced cardiomyocyte differentiation** TzuCheng Sung / *Wenzhou medical university, China*
- 17:30 S6-9-4 **Forming and probing human neuromuscular junctions using iPSC-derived cell types within microfabricated devices** Stephanie Michelena Tupiza / *School of Chemical Engineering, The University of Queensland, Brisbane, QLD, Australia.*
- 17:40 S6-9-5 **Microgranular endometrial orgnaoids to reconstruct endometrial injuries for infertility treatment** Myeong Jae Baek / *Kyungpook national university, Korea, Republic of*
- 17:50 S6-9-6 **A CONTROLLABLE HUMAN SPINAL CORD MODEL WITH FULL DORSOVENTRAL PATTERNING** Jeyoon Bok / *University of Michigan, USA*

May 30 (Thu) 13:40~15:10 323

Biomaterials for women's health engineering

Organizer Brendan Harley / *University of Illinois at Urbana-Champaign, USA*

Keynote Speaker
- 13:40 S11-5-1 Jenny Robinson / *University of Washington, USA*

Invited Speaker
- 14:05 S11-5-2 **Physiomimetic models of endometrioma initiation** Brendan Harley / *University of Illinois at Urbana-Champaign, USA*

Oral Presenter
- 14:20 S11-5-3 **Self-fitting vaginal stents based on shape memory foams** Elizabeth Cosgriff Hernandez / *The University of Texas at Austin, USA*
- 14:30 S11-5-4 **Antibacterial albumin-tannic acid coatings for scaffold-guided breast reconstruction** Silvia Cometta / *Queensland University of Technology, Australia*
- 14:40 S11-5-5 ***In vitro* accelerated ageing and infrared microscpectroscopy method study of silicone breast implant** Credson Langueh / *CY Cergy Paris University, France*
- 14:50 S11-5-6 **3D printing for engineering gynecological tissues** John Fisher / *University of Maryland, USA*

May 30 (Thu) 16:30~18:00 322

Sex as a biological variable in biomaterials research

Organizer Brian Aguado / *University of California San Diego*

Keynote Speaker
16:30 S12-6-1
Matrix-dependent regulation of endothelial-mesenchymal transition in Turner Syndrome: relevance to bicuspid aortic valves
Jane Grande-Allen / *Rice University, USA*

Invited Speaker
16:55 S12-6-2
Biomaterial Tools to Interrogate Sex Differences in Knee Connective Tissue Regeneration
Jenny Robinson / *University of Washington, USA*

17:10 S12-6-3
Dissecting Cell-Matrix Interactions in Endometrial Disorders using Tissue Engineered Models
Juan Gnecco / *Tufts University, USA*

Oral Presenter
17:25 S12-6-4
Biomimicking trilayer scaffolds with high stretchability and sustained estradiol release for uterine tissue regeneration
Min Wang / *Department of Mechanical Engineering, The University of Hong Kong, Pokfulam Road, Hong Kong, Hong Kong SAR, China*

17:35 S12-6-5
Sex-based differences in human mesenchymal stem cell osteogenic response on mineralized collagen scaffolds
Vasiliki Kolliopoulos / *Rice University, USA*

17:45 S12-6-6
Y-chromosome linked genes modulate sex-specific valvular myofibroblast methylation on hydrogels
Rayyan Gorashi / *University of California, San Diego, USA*

May 31 (Fri) 09:30~11:00 314

Biomaterials for Women's Reproductive Health

Organizer Shelly Peyton / *University of Massachusetts Amherst*

Keynote Speaker
09:30 S13-9-1
Bridging the Gap: 3D High Throughput Screening Models for Gynecological Disease
Kaitlin Fogg / *Oregon State University, USA*

Invited Speaker
09:55 S13-9-2
Tina Chowdhury / *Queen Mary University of London, United Kingdom*

10:10 S13-9-3
Matrix glycation regulates neurodegeneration in the aged neurovascular-on-a-chip
Minjeong Jang / *Korea Institute of Radiological Medical Sciences, Korea, Republic of*

Oral Presenter
10:25 S13-9-4
Development of a bioabsorbable implant capable of regenerating adipose tissue for breast reconstruction
Shuichi Ogino / *Shiga University of Medical Science, Japan*

10:35 S13-9-5
Mimicking extracellular matrix based scaffolds as functional biomaterials for supporting surgical application in disease tissue removal
Jirut Meesane / *Prince of Songkla University, Thailand*

10:45 S13-9-6
Revolutionizing Bone-on-a-Chip: Novel approaches in three-dimensional tissue engineering through protein-based 3D scaffolds
Christoph Naderer / *School of Medical Engineering and Applied Social Sciences, University of Applied Sciences Upper Austria, Garnisonstraße 21, 4020 Linz, Austria*

Publication in Biomaterials research: advice from Editor-in-chief

May 28 (Tue) 12:20~13:30 325-AB

Meet editors related to biomaterials

Organizer Hyuk Sang Yoo / *Kangwon National University, Korea, Republic of*

Speaker
12:20 LS1-1-1
Kam W. Leong / *Columbia University, USA*

12:28 LS1-1-2
Katja Schenke-Layland / *Eberhard Karls University Tubingen, Germany*

12:36 LS1-1-3
Fan Yang / *Stanford University School of Medicine, USA*

12:44 LS1-1-4
Byeongmoon Jeong / *Ewha Womans University, Korea, Republic of*

12:52 LS1-1-5
Michaela Muehlberg / *Royal Society of Chemstry (RSC), United Kingdom*

Biomaterials education

May 29 (Wed) 12:20~13:30 324-A

Biomaterials Education Symposium at the WBC 2024

Organizer Jurica Bauer / *Maastricht University, Netherlands*

Keynote Speaker
12:20 LS2-3-1
Undergraduate and graduate training in biomaterials within a BME curriculum
Johnna S. Temenoff / *Georgia Tech and Emory University, USA*

Invited Speaker
12:45 LS2-3-2
Teaching biomaterials in a new multidisciplinary bachelor "Regenerative Medicine and Technology"
Jurica Bauer / *Maastricht University, Netherlands*

13:00 LS2-3-3
Effectively engaging the next generation of biomedical engineers in biomaterials through innovative learning activities and assessment design
Young Jung No / *The University of Sydney, Australia*

13:15 LS2-3-4
Integrating Engineering Principles into Biotechnology Education Through Biomaterials and Biomedical Engineering
Jeong-Kee Yoon / *Chung-Ang University, Korea, Republic of*

Clinical translations of biomaterial research

May 29 (Wed) 09:30~11:00 320-A

Clinical application of biomaterials in Orthopaedic field

Organizer Ji-Hoon Bae / *Department of Orthopaedic Surgery, Korea University Guro Hospital, Korea, Republic of*

Keynote Speaker 09:30 S7-12-1
Hongsik Cho / *1) Dept. of Orthopaedic Surgery, UTHSC-Campbell Clinic 2) VA Medical Center, USA*

Invited Speaker 09:55 S7-12-2
Development of Scaffold-free Three-dimensional Tendon Construct Using Mouse Tendon Cells
Kyu Sang Joeng / *McKay Orthopaedic Research Laboratory, Department of Orthopaedic Surgery, Perelman School of Medicine, University of Pennsylvania, USA*

10:10 S7-12-3
Clinical Application of Polydeoxyribonucleotide for Shoulder and Elbow Diseases
Jung-Taek Hwang / *Department of Orthopedic Surgery, Cuncheon Sacred Heart Hospital, Hallym University Medical College, Korea, Republic of*

Oral Presenter 10:25 S7-12-4
Mechanical properties and bone regeneration ability of additively manufactured trabecular porous tantalum scaffolds
Jiaxiang Wang / *Qingdao University of Technology, China*

10:35 S7-12-5
***In vivo* studies of an innovative 3D printed device for articular cartilage regeneration**
Xinyu Li / *Imperial College London, United Kingdom*

May 29 (Wed) 13:40~15:10 320-A

Translation of bioactive ceramics from bench to bedside and emerging technologies for patient specific approaches

Organizer Christine Knabe / *Philipps University Marburg, Germany*

Keynote Speaker 13:40 S8-12-1
Bioactive calcium alkali phosphate bone grafts enhance osteogenesis and facilitate bone repair in vivo - Translational research in oral implantology
Christine Knabe / *Philipps University Marburg, Germany*

Invited Speaker 14:10 S8-12-2
Long term stability and functionality of regenerated bone induced by SCPC resorbable bioactive graft
Ahmed El-Ghannam / *University of North Carolina at Charlotte, USA*

Oral Presenter 14:25 S8-12-3
In vivo analysis of Porous Bioactive Silicon Carbide Scaffold for Craniofacial Bone Augmentation
RANDA ALFOTAWI / *King Saud University, Saudi Arabia*

14:35 S8-12-4
Nanoscale 3D Printing of Bioceramics
Iman Roohani / *University of Sydney, Australia*

May 31 (Fri) 09:30~11:00 315

Clinical and Pre-clinical Application of Biomaterials toward Next-Generation Medicine

Organizer Atsushi Mahara / *Department of Biomedical Engineering, National Cerebral and Cardiovascular Center Research Institute, Japan*

Keynote Speaker 09:30 S13-14-1
Enhancing kidney transplantation: Addressing ischemia-reperfusion injury through ex vivo cell surface engineering with a novel amphiphilic polymer
Alireza Biglarnia / *Lund University, Sweden*

Invited Speaker 09:55 S13-14-2
Development of a high-hydrostatic pressure device for nevus tissue inactivation and dermal regeneration for the treatment of giant melanocytic nevus
Naoki Morimoto / *Department of Plastic and Reconstructive Surgery, Graduate School of Medicine and Faculty of Medicine, Kyoto University, Japan*

10:10 S13-14-3
Cell surface engineerinf for transplantation therapy
Yuji Teramura / *Cellular and Molecular Biotechnology Research Institute (CMB), National Institute of Advanced Industrial Science and Technology, Japan*

Oral Presenter 10:25 S13-14-4
Hydrogel-delivery of stem cell-derived neurons to repair the injured adult cervical spine
Vanessa Doulames / *Stanford University, USA*

10:35 S13-14-5
Pre-clinical evaluation of a new class III biodegradable stent for the treatment of urethral stricture
Yurena Polo Arroyabe / *Polimerbio SL, Spain*

10:45 S13-14-6
Development and clinical application of biodegradable silk protein bone screw
Yafei Feng / *Xijing Hospital, China*

Regulatory challenge in biomaterial products

May 28 (Tue) 16:30~18:00 320-A

Regulatory science for the translation of biomaterials products

Organizer Kai Zhang / *Sichuan University, China*

Keynote Speaker 16:30 S6-12-1
Regulatory Science for Medical Devices
Suping Lyu / *Medtronic Inc., USA*

Oral Presenter 16:55 S6-12-2
A safe-by-design approach for medical implants
Anniek Gielen / *National institute of public health and the environment, Netherlands*

17:05 S6-12-3
Immunogenicity assessment for swim bladder-derived biomaterials
Jing Liu / *Institute of Biomedical Engineering, Chinese Academy of Medical Sciences & Peking Union Medical College, China*

17:15 S6-12-4
The research on key technology for evaluation of soft tissue wound repair materials
LI NA / *Sichuan university, China*

17:25 S6-12-5
Research Status of Nanomaterial Medical Devices and Discussion on Biological Evaluation
SUN Lingxiao / *Shandong Institute of Medical Device and Pharmaceutical Packaging Inspection, NMPA Key Laboratory for Safety Evaluation of Biomaterials and Medical Devices, Shandong Key Laboratory of Biological Evaluation for Medical Devices, Jinan, Shandong, China*

May 30 (Thu) 12:20~13:30 324-A

Regulatory perspectives on biologics composed of cell therapy and biomaterials

Organizer Joo Hee (Elise) Kim / *Ajou University, Korea, Republic of*

Speaker 12:20 LS3-2-1
Combination Products: Advanced Drug Delivery Technologies and Cell/Gene Therapies
James Wabby / *Regulatory Affairs (CoE), AbbVie, Inc, USA*

12:50 LS3-2-2
Regulatory aspect of extaracellular vasicles for regenerative medicine
Takahiro Ochiya / *Tokyo Medical University, Japan*

From bench to commercialization

May 27 (Mon) 14:40~16:10 Room 320-B

Emerging biomaterials: From bench to startup

Organizer Jinmyoung Joo / *Ulsan National Institute of Science and Technology, Korea, Republic of*

Keynote Speaker
14:40 S2-13-1
Michael J. Sailor / *University of California San Diego, USA*

Invited Speaker
15:05 S2-13-2
Soft Materials for Hard Problems in Healthcare: Hydrogels as Novel Medical Device
Hyunwoo Yuk / *SanaHeal, USA*

15:20 S2-13-3
Sustainable release of retinoic acid by porous silicon microparticles enhances the functional maturation of induced pluripotent stem cell-derived motor neurons
Alec Smith / *University of Washington, USA*

15:35 S2-13-4
Bridging Bench to Startup: Advancements in Emerging Biomaterials for Regenerative Medicine
Eun Je Jeon / *Cellartgen, Korea, Republic of*

Oral Presenter
15:50 S2-13-5
SymClot: synthetic platelets for improved hemorrhage control
Seema Nandi / *SelSym Biotech, Inc., USA*

16:00 S2-13-6
Confined migration drives stem cell epigenetics and differentiation
Xu Gao / *Department of Biomedical Enigneering, National University of Singapore*

May 28 (Tue) 16:30~18:00 320-B

Biomaterials' challenges: From academia to industry

Organizer Sandra Van Vlierberghe / *Ghent University, Belgium*

Keynote Speaker
16:30 S6-13-1
From BIO INK to BIO INCorporation: the launch of BIO INX
Jasper Van Hoorick / *BIO INX, Belgium*

Invited Speaker
16:55 S6-13-2
Taking exosome therapeutics from academia to industry
Yong Woo Cho / *Hanyang University, Korea, Republic of*

17:10 S6-13-3
Academia, Start-Ups, CDMOs, CROs and Strategics: The challenge of translating innovative biomaterials to the clinic
Chris Wattengel / *Collagen Solutions, United Kingdom*

Oral Presenter
17:25 S6-13-4
Evaluating Global Participation in Biomaterials Science: Addressing Disparities in Authorship and Editorial Boards
Aâçna Maria Porras / *University of Florida, USA*

17:35 S6-13-5
Double network bioadhesives for tissue adhesion
Terry Steele / *Nanyang Technological University, Singapore*

17:45 S6-13-6
The Impact of Salt on the Skin Adhesion Properties of Cosmetic Acrylic Polymer Gels
Jihoon Ha / *Kolmar Korea, Korea, Republic of*

May 29 (Wed) 13:40~15:10 320-B

Biomaterials-based startups for tissue engineering

Organizer Insup Noh / *Seoul National University of Science and Technology, Korea, Republic of*

Keynote Speaker
13:40 S8-13-1
Control of in situ bioprinting for even cell distribution and mechanical properties of tissue engineering scaffold by 3D bioprinting pen
Insup Noh / *Seoul National University of Science and Technology, , Korea, Republic of*

Invited Speaker
14:05 S8-13-2
Colon-targeted S100A8/A9-specific peptide systems ameliorate colitis and colitis-associated colorectal cancer in mouse models
Chul-Su Yang / *Hanyang University, Korea, Republic of*

Oral Presenter
14:20 S8-13-3
Multifunctional aligned nanofiber hydrogels deliver multimodal cell-regulatory signals for nerve regeneration
Xiumei Wang / *Tsingua University, China*

14:30 S8-13-4
Microfluidic bioreactors for the sustainable development of local drug delivery systems
William Oates / *University of Manchester, United Kingdom*

14:40 S8-13-5
Flow-based downstream processing of in vitro transcribed mRNA and comparative assessment
Vikas Sharma / *POSTECH, Korea, Republic of*

14:50 S8-13-6
PHAsT: revolutionizing medical devices
Andrea Mele / *University of Sheffield, United Kingdom*

15:00 S8-13-7
Has Determination of Biocompatibility Been Hijacked? Biomaterial Scientists Take Heed
Elaine Duncan / *Paladin Medical, Inc. & Adjunct Professor, Department of Biomedical Engineering, Pigman College of Engineering, University of Kentucky, USA*

Industry symposium

May 28 (Tue) 12:20~13:10 325-CD

Company Seminar (DENTIS / Dalim Tissen)

Speaker
12:20 LS1-2-1
Overview of Compact bone grafting and absorptive membranes
Inhae Shin / *Human Materials R&D Team, Korea, Republic of*

12:45 LS1-2-2
Hemostatic efficacy and safety of CollaStat in a spinal surgery
In Bo Han / *CHA Univ. School of Medicine, Korea, Republic of*

May 28 (Tue) 12:20~13:10 322

Company Seminar (MAVERICK / Desktop Health™)

Speaker
12:20 LS1-5-1
Telocollagen additives for Regenerative Medicine seen through a Dental Device Lens
Terance Hart / *Maverick Biosciences, United Kingdom*

12:45 LS1-5-2
Designing patterns for tubular scaffolds using the 3D - Bioplotter's PrintRoll system
Carlos Carvalho / *Desktop Health™, Germany*

May 29 (Wed) 12:20~13:10 325-AB

Company Seminar (GENOSS)

Speaker
12:20 LS1-1-1
Genoss : an innovating company with a variety of advanced medical devices
In Kwon Jung / *GENOSS, Korea, Republic of*

May 29 (Wed) 12:20~13:10 325-CD

Company Seminar (Rousselot / Readily3D)

Speaker
12:20 LS2-2-1
Ju Young Park / *BioBricks Co.,Ltd., Korea, Republic of*

12:45 LS2-2-1
3D volumetric tomographic bioprinting
Paul Delrot / *Readily3D, Switzerland*

May 30 (Thu) 12:20~13:10 325-AB

Company Seminar (Dentium)

Speaker
12:20 LS3-1-1
Collagen Matrix(Collagen Graft 2) vs Membrane
Sung-Tae Kim / *Seoul national university School of Dentistry, Korea, Republic of*

WBC 2024 Travel Grant

May 27 (Mon)

324-A 15:50 S2-3-5
Biomedical Application of Emerging NanoAlum Beyond Drug Delivery System
Lingxiao Zhang / *Aarhus University, Denmark*

May 28 (Tue)

324-A 08:30 ~ 08:40 OS1-3-1
Designing Osteoimmunomodulatory Surfaces: Insights from 3D-Printed Submicron Patterns
Mahdiyeh Nouri-Goushki / *Delft university of technology Netherlands*

322 08:40 ~ 08:50 OS1-6-2
Using blood components to engineer highly bioactive and customized implantable biomaterials
Rita Sobreiro-Almeida / *Department of Chemistry, CICECO – Aveiro Institute of Materials, University of Aveiro, Portugal*

306-B 17:20 ~ 17:30 S6-8-4
Anisotropic hydrogel-based engineered extracellular matrices for promoting regenerative tendon healing
Tayler Hebner / *Department of Bioengineering, University of Oregon, USA*

321-B 08:50 ~ 09:00 OS1-11-3
Photo-responsive hydrogel system to study mechano-transduction during intestinal tissue homeostasis
Kaustav Bera / *Department of Chemical and Biological Engineering, University of Colorado Boulder, Boulder, CO 80309, USA. BioFrontiers Institute, University of Colorado Boulder, Boulder, CO 80309, USA., USA*

211 08:50 ~ 09:00 OS1-15-3
IN-SITU MITOCHONDRIAL GENE THERAPY FOR THE TREATMENT OF LEBER'S HEREDITARY OPTIC NEUROPATHY
Yi Wang / *China Pharmaceutical University, China*

Grand Ballroom, 3F 18:00 ~ 19:00 P2-256
Enhanced osteogenic responses of bone cells on hydroxyapatite -modified PL-b-CL electrospun scaffold
Eva Šebová / *Institute of Experimental Medicine CAS, Czech Republic*

May 29 (Wed)

323 09:10 ~ 09:20 OS2-5-5
BSA-ICG Complex loaded 3D Printed Phototherapeutic Patches for Wound Healing
Jayashree Roy / *Indian Institute of Technology, Jodhpur, India*

322 08:40 ~ 08:50 OS2-6-2
Nano-scale clustering of cell adhesive ligands promotes myoblast proliferation and myotube formation: novel technology for skeletal muscle tissue engineering
Shirin Nour / *1 Department of Biomedical Engineering, The University of Melbourne; 2 Graeme Clark Institute for Biomedical Engineering, University of Melbourne; 3 2 Polymer Science Group, Department of Chemical Engineering, The University of Melbourne, Australia*

306-A 09:10 ~ 09:20 OS2-7-5
Functionalized micro/nano morphology of 3D printing bioceramic tuning cellular mechanotransduction signal to achieve osteogenic response
lina wu / *Sichuan university, China*

314 08:40 ~ 08:50 OS2-9-2
Early intervention for traumatic bone injury using a novel self-adhesive biomaterial that facilitates a local delivery of active compounds
Miruna Chipara / *University of Birmingham, United Kingdom*

321-B 08:40 ~ 08:50 OS2-11-2
Vascular Microphysiological systems for Organ Preservation Study Testbed
Yongdeok Kim / *University of California, Berkeley, USA*

321-B 08:50 ~ 09:00 OS2-11-3
Photothrombosis-on-a-Chip for Site-Specific Thrombus Formation
Kuan-Ting Liu / *Department of Chemical Engineering, National Taiwan University, Chinese Taipei*

321-B 09:00 ~ 09:10 OS2-11-4
Growth factor patterning into fusing microtissues: 3D bioprinting of spatiotemporal cues for cell spheroid and organoid based tissue engineering
Josephine Wu / *Trinity College Dublin, Ireland*

321-B 09:10 ~ 09:20 OS2-11-5
A Dynamic Perfusion-Based 3D Bio-Printed *In Vitro* Osteosarcoma Model for Anticancer Drug Screening Application
CHITRA JAISWAL / *Biomaterials and Tissue Engineering Laboratory, Department of Biosciences and Bioengineering, Indian Institute of Technology Guwahati, Guwahati-781039, Assam, India., India*

321-B 17:40 ~ 17:50 S9-11-6
Spatially controlled construction of assembloids for modeling glioma infiltration
Michelle Huang / *Stanford University, USA*

May 30 (Thu)

325-AB 08:30 ~ 08:40 OS3-1-1
Determination of the micromechanical and pro-angiogenic features of silk sericin/wool keratin hydrogels for regenerative medicine applications
Elif Beyza Demiray / *Regenerative Biomaterials Laboratory, Department of Bioengineering, Faculty of Engineering, Canakkale Onsekiz Mart University, 17100 Canakkale, Turkey, Türkiye*

325-AB 08:40 ~ 08:50 OS3-1-2
Encapsulation of bacteriophages isolated from poultry farms into PDA-based hydrogel
Yu-Ning An / *Institute of Food Safety and Health, National Taiwan University, Taipei, Chinese Taipei*

325-CD 09:00 ~ 09:10 OS3-2-4
Microfluidic-assisted digital manufacturing of functionally graded porous materials with transient physical and biological properties
Maria Celeste Tirelli / *Institute of Physical Chemistry - Polish Academy of Science, Poland*

324-B 08:50 ~ 09:00 OS3-4-3
Electrophysiological assessment of network activity in neural constructs derived from primary progenitors and glial cells encapsulated in a biosynthetic hydrogel
Marjolaine Boulingre / *Imperial College London, United Kingdom*

324-B 09:00 ~ 09:10 OS3-4-4
Enhanced Spinal Cord Injury Repair: Synergistic Neural Microenvironment Remodeling via In Situ Magnetic Stimulation Along the Spinal Cord
Chun-Yi Yang / *Tsinghua University, China*

323 08:30 ~ 08:40 OS3-5-1
A non-hydrogel elastomer that resists the foreign body response in rodents and non-human primates
Xianchi Zhou / *Zhejiang University, China*

323 08:40 ~ 08:50 OS3-5-2
Chemokine-Scavenging Wound Dressing Improves Wound Healing in Chronic Wounds
Lucas Schirmer / *Leibniz Institute of Polymer Research Dresden, Germany*

314 08:40 ~ 08:50 OS3-9-2
Preparation and hemostatic effect of micro-nano graded porous particles doped with dopamine fibrin-based water-triggered intelligent composite expansion sponge
Caiyun Zheng / *School of Life Sciences, Northwestern Polytechnical University, China*

314 08:50 ~ 09:00 OS3-9-3
Harnessing β-Glucans-Functionalized Nanocomplexes for Targeted Oral Delivery Treatment with Real-time Monitoring against Liver Fibrosis
Nhien Nguyen / *Department of Chemical Engineering and Frontier Research Center on Fundamental and Applied Sciences of Matters, National Tsing Hua University, Hsinchu, Chinese Taipei*

321-A 08:30 ~ 08:40 OS3-10-1
Dual surface functionalization of microfluidic blood oxygenators using antithrombin-heparin (ATH) and tissue plasminogen activator (t-PA)
Siyuan Li / *School of Biomedical Engineering, McMaster University, Canada*

321-A 08:40 ~ 08:50 OS3-10-2
Comprehensive mechanical characterization of hydrogels for bone regeneration: a multi-method approach at macro and microscales
Cristina Lopez-Serrano / *Univ. Bordeaux, CNRS, Bordeaux INP, CBMN, France / Laboratoire d'Ingénierie de Surface, Département de génie des mines, de la métallurgie et des matériaux, Université Laval, Québec, Canada, France*

321-A 08:50 ~ 09:00 OS3-10-3
Physicochemical design of nanoparticles for targeted degradation of neutrophil extracellular traps
Preethi Raghavan / *University of California San Francisco, USA*

321-A 09:00 ~ 09:10 OS3-10-4
Zwitterionic Silver Nanoparticle-Engineered Commercial Soft Contact Lenses for Enhanced Treatment of Microbial Keratitis
Li MA / *The Hong Kong Polytechnic University, Hong Kong SAR, China*

320-B 08:30 ~ 08:40 OS3-13-1
Engineered pH-sensitive Aggregation Property of Molecular Block for Selective Cytotoxicity in Tumor Microenvironment
Kazuki Moroishi / *Graduate School of Engineering, Osaka University, Japan*

322 10:50 ~ 11:00 S10-6-6
Engineering modular tissues with multiscale hierarchy using mass produced living microbuilding blocks
Castro Johnbosco / *University of Twente, Netherlands*

321-B 14:55 ~ 15:05 S11-11-6
Tracing immune cells around biomaterials with spatial anchors during large-scale wound regeneration
Yang Yang / *Sichuan University, China*

321-B 17:35 ~ 17:45 S12-11-6
Induced pluripotent stem cells for repairing lens zonule using a biomimetic electrospinning scaffold combined with a directional differentiation strateg
Tianhui Chen / *Fudan University, China*

Grand Ballroom, 3F 18:00 ~ 19:00 P4-051
Systematic oxide film degradation precedes titanium alloy corrosion
Michael Kurtz / *Clemson University, USA*

May 31 (Fri)

325-CD 08:50 ~ 09:00 OS4-2-3
Fabrication of urinary-specific tissue-engineered construct by nan nanocellulose embedded hydrogel ink using extrusion-based 3D printing
Sulob Roy Chowdhury / *Indian Instutitute of Science, Bangalore, India*

322 09:00 ~ 09:10 OS4-6-4
Meniscus-Specific Bioreactor for Avascular Meniscus Healing under Physiological Loadings and Multi-tissue Crosstalk
Hun Jin Jeong / *Columbia University, USA*

306-A 08:40 ~ 08:50 OS4-7-2
Bioengineered hyaluronan-based hydrogels enable longer-term culture of patient-derived peritoneal carcinomatosis explants for personalized drug testing
Zhuoran Wu / *Translational Tumor Engineering Laboratory, Department of Biomedical Engineering, National University of Singapore, Singapore*

306-B 08:30 ~ 08:40 OS4-8-1
Role of the type 1 interferon response in humoral immunity elicited by self-replicating RNA vaccinesg
B.J. Kim / *MIT, USA*

321-A 08:30 ~ 08:40 OS4-10-1
Advanced surface characterization of Ti nano surface topographies created using femtosecond laser processing for dental implant application
Mrinal Gaurav Srivastava / *KU Leuven, Belgium*

321-A 08:40 ~ 08:50 OS4-10-2
The impact of zinc on the usage properties of Mg-0.5Ca-xZn biodegradable alloys
Bogdan Istrate / *"Gheorghe Asachi" Technical University of Iasi, Romania, Romania*

321-B 09:10 ~ 09:20 OS4-11-5
Reagent-free covalent-immobilisation of biomolecules and improved cell response in PDMS-based microfluidic organ on chips
Deepu Ashok / *The University of Sydney, Australia*

320-A 08:40 ~ 08:50 OS4-12-2
A novel approach to target and remove fibrillar aggregates associated with exfoliation syndrome
Mehdi Ghaffari Sharaf / *Department of Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada, Canada*

320-A 09:00 ~ 09:10 OS4-12-4
Development of nanoparticles to induce M1-to-M2 switch as a treatment for aortic dissection in *Fbn1* mutant mice
Maria Thea Rane Clarin / *University of Tsukuba, Japan*

320-A 09:10 ~ 09:20 OS4-12-5
***Boesenbergia rotunda* based Nanoemulsions: Supplementation and Enhancement of Their Biological Properties for Reducing Atopic Dermatitis**
Desy Liana / *College of Public Health Sciences, Chulalongkorn University, Thailand*

314 10:45 ~ 10:55 S13-9-6
Revolutionizing Bone-on-a-Chip: Novel approaches in three-dimensional tissue engineering through protein-based 3D scaffolds
Christoph Naderer / *School of Medical Engineering and Applied Social Sciences, University of Applied Sciences Upper Austria, Garnisonstraße 21, 4020 Linz, Austria, Austria*

WBC 2024
12th World Biomaterials Congress
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Poster Session 1

May 27 (Mon) 18:00~19:00

P1-001 Antioxidant-Coated multifunctional whitlockite scaffold for the treatment of Steroid-Induced osteonecrosis of the femoral head
Minjoon Cho, Seoul National University, College of Medicine, Korea, Republic of

P1-002 A Newly Synthesized Flower-Like Titanium Phosphate Bioceramic-Laden 3D Printed Scaffold for Accelerated Bone Regeneration by BMP Signaling
Il Won Suh, Jeonbuk National University, Korea, Republic of

P1-003 Nature-inspired polyphenol-amine coating for simultaneous coupling of metal removal and visual detection
Helen Hyerin Ju, Korea Advanced Institute of Science and Technology, Korea, Republic of

P1-004 The physicochemical characterization and in vivo performance of resorbable low crystalline apatite bone graft material
Hyungjoon Park, Osstem Implant, Korea, Republic of

P1-005 Optimization of strontium substitution on phosphate-based glass for the enhancement of functional activity
Jeong-Hyun Ryu, Department of Orthodontics, Institute of Craniofacial Deformity, Yonsei University, College of Dentistry, Korea, Republic of

P1-006 Borosilicateglass(BSG) cement sequentially modulates immunity, angiogenesis, and osteogenesis to facilitate critical bone defect repair
Haobo Pan, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

P1-007 Relationship between anisotropic structure of hydroxyapatite and protein adsorption ability
Mamoru Aizawa, Meiji University, Japan

P1-008 Photo/US-responded antibacterial therapy of infection in percutaneous implants by nanostructured coatings
Withdrawal
Lan Zhang, Xi'an Jiaotong University, China

P1-009 Revisiting wet-chemically synthesized β-tricalcium phosphate: solid-state NMR study of local structure
Toshiisa Konishi, Tokyo Metropolitan Industrial Technology Research Institute, Japan

P1-010 Fluorapatite Scaffolds as the Engineered Bone Grafts for Repairing Critical-Sized Pig Calvarial Defects
Sujee Jeyapalina, University of Utah, USA

P1-011 Structure and dissolution behavior of CaO-P_2O_5-TiO_2 glasses prepared by liquid phase method for biomedical applications
Sungho Lee, National Institute of Advanced Industrial Science and Technology (AIST), Japan

P1-012 Biomimetic multifunctional peptides promote synergistic integrin and growth factor signaling on biomaterials
Carles Mas-Moruno, Technical University of Catalonia, Spain

P1-013 Modular design of functional coatings with self-response to microenvironment for vascular stent
Yanan Wang, Sir Run Run Shaw Hospital School of Medicine Zhejiang University, China

P1-014 Development of CuCS/Cur Composite Wound Dressing for Deep Skin Burn Healing with enhanced nerve regeneration
Jiang Chang, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

P1-015 Conditioned Scaffolds in Rat Calvarial Reconstruction
Francis Fernandez, Sree Chitra Tirunal Institute for Medical Science & Technology, India

P1-016 Two-dimensional Arrangement of Cells on Photo-Responsive Ceramic Films
Masato Ueda, Kansai University, Japan

P1-017 Construction and Pro-osteogenesis of Multifunctional Silica-EGCG Coating on Scaffolds
Yubao Li, Sichuan University, China

P1-018 3D printing calcium phosphate ceramics with high osteoinductivity
Xiangfeng Li, Sichuan University, China

P1-019 Osteogenesis and angiogenesis stimulated by material characteristics of tissue engineering scaffolds
Jie Weng, College of Medicine, Southwest Jiaotong University, China

P1-020 Development of hydroxyapatite ceramics co-substituted with Magnesium and Zinc ions via ultrasonic spray-pyrolysis route and its biological evaluations using osteoblast
Mizuki Hashimoto, Graduate School of Science and Technology, Meiji University, Japan

P1-021 Metal-dopamine Network Coatings for Therapeutic Nitric Oxide Delivery
Qingqing Fan, University of New South Wales, Australia

P1-022 Modulating endothelial cell attachment using biomimetic thin film coatings
Jessie Clare, Swinburne University of Technology, Australia

P1-023 Can biphasic calcium phosphate serve as phosphate source during osteogenic differentiation of human mesenchymal stromal cells *in vitro?*
Daphne van der Heide, AO Research Institute Davos, Switzerland

P1-024 Synthesis and characterization of magnesium phosphate supraparticles as coating components for bone implant
Anika Höppel, University Hospital Würzburg, Germany

P1-025 Effect of model fibrotic tissue on the electrochemical performance and dissolution levels of representative cochlear Pt electrodes
Dhyey Devashish Shah, The Graduate School of Biomedical Engineering, University of New South Wales, Australia

P1-026 The role of type H vessels in the osteoinduction of calcium phosphate ceramics
cong feng, sichuan university, China

P1-027 Development of Amorphous Calcium Phosphate with Incorporated Metabolites for Enhanced Bone Healing
Jingzhi Fan, Riga Technical University, Latvia

P1-028 Promising Potential of Titanium-Doped Phosphate Glasses with Zinc or Strontium for Bone Regeneration
Tianyi Tang, University College London, United Kingdom

P1-029 Polydopamine-assisted strontium hybrid coatings for promoting osteogenic and antibacterial activity of titanium implants
Leh-Tieu Ling, Chung Shan Medical University, Chinese Taipei

P1-030 Enhancing the bioactivity of sulfuric-treated Zr-Ti alloys by incorporation of apatite nuclei
YUWEI WU, Kyoto University, Japan

P1-032 Evaluate the influence on the magnetic properties of cobalt hydroxyapatite by the concentration of cobalt ions in the electrolyte
CHI-HAU SHIE, Chung Shan Medical University, Chinese Taipei

P1-033 Mesoporous silica nanoparticles-incorporated calcium phosphate-based bioceramic promoting angiogenesis for effective bone regeneration
Anh Phuong Nguyen Hong, Institute of Chemical Technology, Vietnam Academy of Science and Technology, Vietnam

P1-034 High-performance nano-zirconia in amorphous silica matrix for dental applications
Wei Xia, Uppsala University, Sweden

P1-035 Bio-inspired nacre-like ceramic composites for dental and orthopaedic applications
Bo Su, University of Bristol, United Kingdom

P1-036 Leucocytic membrane camouflaged combinatorial drug-loaded PLGA nanoparticles for targeted breast cancer therapy
Nazeer Hasan, Department of pharmaceutics, SPER, Jamia Hamdard, India

P1-037 Preparation of biocompatible surface using a new phospholipid analogue polymer
Yumeng Zhao, Tokushima University, Japan

P1-038 Tuning the properties of self-setting biomaterials - the role of nonionic surfactants
Aneta Zima, Faculty of Material Science and Ceramics, AGH University of Krakow, Mickiewicza Av. 30, 30-059 Krakow, Poland

P1-039 Influence of macroporous structure dimension on calcium phosphate ceramic-induced bone formation in an ectopic site
Huipin Yuan, Kuros Biosciences BV, Netherlands

P1-040 Spontaneously Right-Side-Out-Orientated Coupling-Driven ROS-Sensitive Nanoparticles on Cell Membrane Inner Leaflet
Withdrawal
Xian Qin, Chongqing University Three Gorges Hospital, China

P1-041 Naringin-loaded bioceramic-based scaffolds obtained by direct ink writing for bone regeneration
Susana Olhero, University of Aveiro, Portugal

P1-042 Bioceramic composite with dynamic porosity for critical-sized bone defects
Rotsiniaina Randriantsilefisoa, AO Research Institute Davos, Switzerland

P1-043 Fluoride-incorporated apatite coating on a dental resin composite with a laser-assisted biomimetic process

Nandha Kumar Ponnusamy, Nanomaterials Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), AIST Tsukuba Central 5, 1-1-1 Higashi, Tsukuba 305-8565, Japan

Withdrawal

P1-044 3D-Printed Calcium Phosphate/Polycaprolactone Scaffolds able to Harden In Vivo

Miguel Mateu Sanz, Biomaterials, Biomechanics and Tissue Engineering Group, Department of Materials Science and Engineering, Universitat Politècnica de Catalunya, Barcelona, Spain., Spain

P1-045 Effect of bioactive glass incorporation on in vitro bioactivity and cytocompatibility of monophasic α -tricalcium phosphate cement

Öznur Demir, Riga Technical University, Latvia

P1-046 Research on Mechanism of Bioactive Glass-regulated Extracellular Vesicles Inhibit Osteoporotic Bone Loss

Zhengyu Yang, South China University of Technology, China

P1-047 Hypoxia-reducing, drug-encapsulating gelatin hydrogel microspheres in cell spheroids

Joshua Lee, Department of Bionanotechnology and Bioconvergence Engineering, Jeonbuk National University, Korea, Republic of

P1-048 Macrophage-mimicking nanoparticles for enhanced cancer immunotherapy via dual inhibition of TGF-β in cancer cells and tumor-associated macrophages

Kyungdong Kim, Hanyang Univ., Korea, Republic of

P1-049 Fabricated decellularized amniotic membrane hydrogel through supercritical fluid CO2 process for alleviating UV-B induced skin inflammation.

Seongryeol Ye, Center for Biomaterials, Biomedical Research Institute, Korea Institute of Science and Technology (KIST), Seoul, 02792, Korea, Korea, Republic of

P1-050 Defining roles of the cathodic phase on the binary Mg alloys for the generation behavior of reactive oxygen species

Minjung Chae, Korea Institute of Science and Technology, Korea, Republic of

P1-051 Development of thermo-responsive hydrogel bioink with growth factor holding and its applicaion

Hyun Ryoung KIM, Nexgelbiotech, Korea, Republic of

P1-052 3D Injectable Or Bioprinted Hydrogels For Cartilage Tissue Engineering

Cristina Manferdini, Rizzoli Orthopedic Institute, Italy

P1-053 Spontaneously Hyper-Oxygenating Macroscale Cube for Successful Tissue Engineering

Chaerim Yoo, Hanyang university, Korea, Republic of

P1-054 Core-shell bioprinting-based multilayered 3D assembloid model for drug test

Yejin Youm, Postech, Korea, Republic of

P1-055 Strontium-releasing hierarchically structured 3D-printed scaffolds accelerate osteochondral defect repai

Cheng Ji Li, 1 Institute of Tissue Regeneration Engineering, Dankook University, Cheonan 31116, Republic of Korea 2 Department of Nanobiomedical Science BK21 PLUS NBM Global Research Center for Regenerative Medicine, Dankook University, Cheonan, 31116, Republic of Korea, Korea, Republic of

P1-056 Sub-micro-sized poly(e-caprolactone) structures fabricated using modified 3D printing process for tissue engineering applications

MOHAN PEI, Sungkyunkwan University School of Medicine, Korea, Republic of

P1-057 Bio-integration amputation implant of femur using 3D printing technology

Suyeon Lee, Medical Engineering Branch, National Cancer Center, Korea, Republic of

P1-058 3D printed microprojection array for transepidermal skin microbiome sampling

Kun Liang, A*STAR Skin Research Labs, Singapore

P1-059 3D printing by digital light processing for biphasic calcium phosphate scaffolds with graded pore sizes for enhancing bone regeneration

Min Wang, Department of Mechanical Engineering, The University of Hong Kong, Pokfulam Road, Hong Kong, Hong Kong SAR, China

P1-060 Design and development of well-printable bioink using rheological analysis

Joanna Żur-Pińska, Silesian University of Technology, Poland

P1-061 Intrinsically gryopreservable bacteriostatic durable glycerohydrogel inks for 3D bioprinting

Zhengwei You, College of Materials Science and Engineering, Donghua University, China

P1-062 Poly(alkylene terephthalate)s as novel biomaterials for cardiovascular applications: synthesis, characterization, processing and *in vitro* biological evaluation

Lenny Van Daele, Ghent University - Polymer Chemistry and Biomaterials Group, Belgium

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P1-063 Graphene-coated polymer powders for 3D printing of electrically conductive parts

Antrea Spanou, Uppsala University, Sweden

P1-064 The biological properties of 3D-printed degradable magnesium alloy WE43 porous scaffolds via the oxidative heat strategy

Chaoxin Wang, Peking University Third Hospital, China

P1-065 The effect of pore size on the mechanical properties, biodegradation and osteogenic effects of additively manufactured magnesium scaffolds

Chaoxin Wang, Peking University Third Hospital, China

P1-066 Melt electrowriting with electrostatic jet deflection

Simon Luposchainsky, Kyoto Institute of Technology, Japan

P1-067 Development of Biocompatible Therapeutic Objects with Radiopaque properties by 3D printing

Souheib Zekraoui, Laboratoire de Biomatériaux pour l'Imagerie Médicale (BIM), Axe Médecine Régénératrice, Centre de Recherche du CHU de Québec - Université Laval (CR-CHUQ-UL), 2705, boul. Laurier (T1-61a), Québec, G1V 4G2, Canada., Canada

P1-068 High throughput screening of osteoinductive structures in 3D printed calcium phosphate scaffolds

Yunyi Liu, School of Biomedical Engineering, Sichuan University, China

P1-069 Ce-containing mesoporous bioactive glasses doped 3D printed nanohydroxylapatite scaffolds with high-strength modulation ability in ROS environment for bone regeneration

Withdrawal

Zihan Zhao, Nanjing Medical University, China

P1-070 3D-printed porous scaffolds with micron-level resolution for pro-regenerative implants

Guoyao Chen, University of Washington, USA

P1-071 3D bioprinting of self-healing hydrogels consisting of glycol chitosan and oxidized polyrotaxane

Maho Hirano, Kobe University, Japan

P1-072 *In vitro* analysis of 3D printed PAEKs for use in orthopedic implants

Paul DeSantis, Drexel University, USA

P1-073 Exploring digital light processing 3D printing to produce villi-crypt scaffold-on-chip mimicking the intestinal epithelium

Lorenzo Zavagna, Doctoral School in Life Sciences, University of Siena, Siena, Italy; 3B's Research Group, I3Bs - Research Institute on Biomaterials, Biodegradables and Biomimetics, University of Minho, Headquarters of the European Institute of Excellence on Tissue Engineering and Regenerative Medicine, AvePark, Parque de Ciência e Tecnologia, Zona Industrial da Gandra, 4805-017 Barco, Guimarães, Portugal; ICVS/3B's - PT Government Associate Laboratory, Braga/Guimarães, Portugal, Italy

P1-074 Defect-specific medical implants using biocomposite-based 3D-printing with titanium alloy multilayer

Rosalind Sin Man Chan, Applied Oral Sciences and Community Dental Care, Faculty of Dentistry, The University of Hong Kong, Hong Kong SAR, China

P1-075 Developing recombinant hyaluronic acid- based self-healing injectable hydrogels for 3D printing and cartilage tissue engineering applications

Manoj Kumar Sundaram, Indian Institute of Technology Madras, India

P1-076 Controlling contractility of cardiomyocytes using gradient melt electrowritten scaffolds

Michael Vernon, The University of Western Australia, Harry Perkins Institute of Medical Research, Australia

P1-077 Composite Photopolymerizable Bio-ink with Magnetic Collagen Fibers Characterization for Guided Muscle Regeneration

Blass Watson, University of Memphis, Biomedical Engineering, USA

P1-078 Cellulose nanofibrils aided 3D printing of waterborne polyurethane

Feng Jiang, The University of British Columbia, Canada

P1-079 Highly elastic thiourea containing 3D printable siloxanes

Timothy Hughes, CSIRO Manufacturing, Australia

P1-080 Melt electrowriting of poly(L-lactic acid), poly(D,L-lactic acid), and poly(lactic-co-glycolic acid)

Huaizhong Xu, Kyoto Institute of Technology, Japan

P1-081 3D Bioprinting Mesenchymal Stromal Cells by using extracellular matrix-derived hydrogels obtained from the decellularization of porcine lungs and hearts

Jorge Otero, Universitat de Barcelona, Spain

P1-082 Investigating the Impact of Graphene-Based Nanomaterials on the Polymerization, Mechanical and Biological Performance of Photocurable Resin for Stereolithography
Sara Lopez de Armentia, Comillas Pontifical University, Spain

P1-083 Durability and Performance of Photocurable Acrylic Resins in Long-Term Biomedical 3D Printing Applications
Eva Paz, Pontifical Comillas University, Spain

P1-084 Wave-Inspired MEW Scaffolds for Enhanced Ligament Tissue Regeneration
Joanna BABILOTTE, Complex Tissue Regeneration department, MERLN Institute for Technology-Inspired Regenerative Medicine, Maastricht University, Maastricht, the Netherlands, Netherlands

P1-085 Novel biodegradable aba-triblock copolymers for fabrication of 3D printable inorganic/organic hybrids
Haffsah Iqbal, Department of Materials, Imperial College London, London, UK, United Kingdom

P1-086 Covalent Coupling of Functionalized Outer Membrane Vesicles (OMVs) to Nanoparticles for Mass-production
Jihong Bong, Incheon University, Korea, Republic of

P1-087 Simultaneous Detection for Breast Cancer Associated DNA and MicroRNA Using CRISPR-assisted Gold Nanorods (AuNRs)
Withdrawal
Min Yu Choi, Department of Semiconductor and Chemical Engineering, School of Chemical Engineering, Jeonbuk National University, Korea, Republic of

P1-088 Microengineering assisted high-throughput organoid generation platform for high-content drug screening and disease modelling
Harshita Sharma, Chonnam National University, Korea, Republic of

P1-089 Ex vivo reconstruction of 3D T cell-cancer cell interactions using porous jammed microgel-based bioprinting
Yeonju Song, Department of Materials Science and Engineering, Seoul National University, Korea, Republic of

P1-090 Establishment of uterine layer-specific decellularized extracellular matrix bioinks for 3D printed *in vitro* uterus
Tugce Sen, Pohang University of Science and Technology, Korea, Republic of

P1-091 Development of porous and pre-vascularized constructs for type 1 diabetes by 3D cell printing technology
Jaewook Kim, Department of Mechanical Engineering, POSTECH, Korea, Republic of

P1-092 Development of retinal pigment epithelium model via 3D cell printing technology and its applications
Jongmin Kim, Department of Mechanical Engineering, POSTECH, Korea, Republic of

P1-093 Photocrosslinkable Nanocomposite Hydrogel for Vascularized Liver Tissue Embedded Bioprinting
Jaemyung Shin, University of Calgary, Canada

P1-094 Rheological Assessment and 3D Printing Performance of Plant Protein-Based High Internal Phase Pickering Emulsions for Customized Food Design
Napat Tomano, Program in Nanoscience and Technology, Graduate School, Chulalongkorn university, Thailand

P1-095 Novel Bioink Carrier Formulations for 3D Bioprinting of Skeletal Muscle
Laurence Meagher, Department of Materials Science and Engineering, Monash University, Clayton, Vic 3800, Australia, ARC Training Centre for Cell and Tissue Engineering Technologies, Monash University, Clayton, VIC 3800, Australia

P1-097 Cryo-enhanced upconversion photodynamic therapy
Anara Molkenova, Institute of Advanced Organic Materials, Pusan National University, Korea, Republic of

P1-098 Inhibition of Residual Colorectal Cancer Growth After Surgery Using Muco-adhesive and Anti-fouling Janus Film.
Jaebeom Lee, Sungkyunkwan University (SKKU), Korea, Republic of

P1-099 Hyaluronate-Black Phosphorus-Upconversion Nanoparticles Complex for Non-Invasive Theranosis of Skin Cancer
Gibum Lee, POSTECH, Korea, Republic of

P1-100 Biodegradable Polymer-based Multifunctional Porous Microspheres Loaded with Oncolytic bacteria for Targeted Cancer Therapy
Gahyun Bae, Sungkyunkwan university, Korea, Republic of

P1-101 Activating Natural Killer Cells for Cancer Immunotherapy Using Cationic Nanoparticle
Joo Dong Park, Sungkyunkwan university, Korea, Republic of

P1-102 Investigating the Synergistic Effects of Immunostimulatory Nanoparticles and Electrical Ablation for Enhanced Cancer Immunotherapy
Seungyong Shin, Sungkyunkwan university, Korea, Republic of

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P1-103 Hybrid Nanovesicles in Cancer Therapy: Innovations in Targeted Photodynamic Treatment
SeungHyo Ko, Sungkyunkwan University, Korea, Republic of

P1-104 Development of light-activatable nanogels for phototherapy of cancer
Subin Lee, Pusan National University, Korea, Republic of

P1-105 "3-in-1" multifunctional platform biomaterials for NK surface membrane immobilization of cancer targeting ligands and gemcitabine chemodrug in pancreatic cancer treatment
Jaewon Park, Dongguk University, Korea, Republic of

P1-106 NK cell surface decoration of anti-PDL1 peptides using lipid-conjugate biomaterials for augmented cancer immunotherapy
Kyung Mu Noh, Department of Chemical & Biochemical Engineering, Dongguk University, Korea, Republic of

P1-107 Visible shifts in fluidity and adhesiveness of a pH-responsive nanoparticle-based conductive hydrogel for cancer detection and therapy
Kaustuv Roy, Korea National University of Transportation, Korea, Republic of

P1-108 Immune-Modulating Magnetic Nanoparticles to Enhance the activity of Dendritic cells for Treatment of Breast Cancer
Jaesung Lim, Sungkyunkwan Univeristy, Korea, Republic of

P1-109 Enhancing adoptive macrophage-based cancer therapy through sustained M1 phenotype maintenance by TLR7/8 agonists
Yeon Jeong Yoo, Sungkyunkwan university, Korea, Republic of

P1-110 Tumor targeted ROS-sensitizing metal laden Polymeric Nanoparticles
Geum Byeol Park, KIRAMS(Korea Institute of Radiological and Medical Sciences)/seoul, Korea, Republic of

P1-111 KRAS-Mutated Pancreatic Cancer Treatment through Immunogenic Cell Death and Phagocytosis Dendritic Cell using Antibody-Photosensitizer Conjugate
SooMin Cho, Department of Biotechnology, Department of Biomedical-Chemical Engineering, The Catholic University of Korea, 43 Jibong-ro, Wonmi-gu, Bucheon-si, Gyeonggi, 14662 Republic of Korea, Korea, Republic of

P1-112 riterpenoid aglycone modification for targeted photodynamic therapy: overcoming limitation of current photosensitizer
Seohee Kim, Catholic university of Korea, Korea, Republic of

P1-113 Near-infrared light responsive biocompatible Ag_2S Nanodots for theragnosis
Mou Seung Kim, Kyungpook National University, Korea, Republic of

P1-114 Biopolymeric Nanoparticle-based Inhaled Gene Delivery for Targeted Treatment of Pulmonary Cancer
Yun Seop Shim, Kyungpook National University/ Department of Biomedical Convergence Science and Technology, Korea, Republic of

P1-115 Targeted Degradation of NRF2 Transcription Factor by dNRF2 Oligonucleotide PROTAC Inhibits Chemoresistance to Drugs Inducing Ferroptosis and Apoptosis
Yejin Lee, Department of Applied Bioengineering, Graduate School of Convergence Science and Technology, Seoul National University, Seoul, Korea / Research Institute for Convergence Science, Seoul National University, Suwon-si, Gyeonggi-do, Korea, Republic of

P1-116 Targeted Ferroptosis Modulation in Cancer Immunotherapy via Iron Oxide Nanoparticle-Encapsulated PD-L1 siRNA
Suhyun Ryu, Department of Applied Bioengineering, Graduate School of Convergence Science and Technology, Seoul National University, Seoul, Korea, Republic of

P1-117 Enhanced chemo-sonodynamic therapy using exosome-coated MnO_2 nanoparticles with self-oxygenation and glycolytic inhibition abilities
Anh H. V. Nguyen, Department of Nano-Bioengineering, Incheon National University, Korea, Republic of

P1-118 Enhanced anticancer efficacy through intratumoral injection of doxorubicin-loaded hyaluronic acid hydrogel
kyungeun Son, Ajou university, Korea, Republic of

P1-119 Targeting matrix mechanics curbs oral carcinogenesis by interfering with non-canonical Hedgehog signaling
Ali Taghizadeh, 1) Institute of Tissue Regeneration Engineering (ITREN), Dankook University, Cheonan 31116, Republic of Korea, 2)Department of Nanobiomedical Science & BK21 Global Research Center for Regenerative Medicine , Dankook University, Cheonan 31116, Republic of Korea., Korea, Republic of

P1-120 Hyaluronic Acid-Squalene based nanoclusters for colon cancer that promotes ferroptosis along with radiation
Raveena Nagareddy, Doctoral Student, Department of Biomedical Sciences, Chonnam National University Hwasun Hospital, Chonnam National University Medical School, Gwangju, 61469, Korea, Korea, Republic of

P1-121 A mild reduction of cell surface inhibits migratory behaviors of tongue cancers via an integrin $\alpha5\beta1$-FAK axis
Laurensia Danis Anggradita, Soonchunhyang Institute of Medi-Bio Science (SIMS), Soonchunhyang University, Korea, Republic of

P1-122 VEGF-based Peptide for Targeting of Angiogenesis
Kevin Kent Vincent Canlas, Chung-ang University, Korea, Republic of

P1-123 Membrane-disrupting helical polypeptide induces immune priming and delivers IL-12 mRNA to facilitate synergistic cancer immunotherapy
Susam Lee, Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

P1-124 Phagocytosis-driven STING activation invigorates antitumor immunity and reprograms the tumor microenvironment
Susam Lee, Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

P1-125 Zinc-based metal phenolic network induces tumor microenvironment reprogramming by dual metabolism regulation and immunogenic cell death induction
Hoyeon Nam, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

P1-126 IL-12 mRNA cancer immunotherapy augmented by IFNγ-IDO tumoral negative feedback inhibiting lipid nanoparticle
Heewon Park, Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

P1-127 Reducing immune tolerance and systemic toxicity of toll-like receptor 7/8 agonist by molecular masking of synthetic immunomodulator
Hong Sik Shin, Sungkyunkyan University, Korea, Republic of

P1-128 Development of Composite Polymer Nanocarriers for Targeted and Irradiation-Induced Release of Anticancer Drugs
Woo Hyun Kwon, KIRAMS(Korea Institute of Radiological and Medical Sciences), Korea, Republic of

P1-129 RGD Peptide-based Targeted Photothermal Tumor Therapy of Surface-Modified MXene Particles
Sujin Kim, Department of IT Convergence (Brain Korea Plus 21), Korea National University of Transportation, Korea, Republic of

P1-130 Tumor Microenvironment-Regulating Immunosenescence - Independent Nanostimulant Synergizing with Near-Infrared Light Irradiation for Antitumor Immunity
Amal Babu, Chonnam National University, Korea, Republic of

P1-131 Phosphorylated focal adhesion kinase by mild reduction of cell surface proteins inhibits integrin $\alpha5\beta1$-dependent patient-derived cancer cell migration and invasion
Joo Hyun Kim, Soonchunhyang Institute of Medi-bio Science, Korea, Republic of

P1-132 Self-Promoted targeting delivery of nanodrug through chemotherapeutic upregulation of CD47 for triple-negative breast cancer therapy
Withdrawal
Bin Yang, School of Biomedical Engineering, Guangzhou Medical University, China

P1-133 Supramolecular peptide-protein granules for intracellular protein delivery
Gregory Hudalla, University of Florida, USA

P1-134 Functionalisation of polymers with palladium nanomaterials for applications in bioorthogonal catalysis
Ferry Melchels, University of South Australia, Australia

P1-135 Pulmonary-delivered formulations of antibiotics and quorum sensing inhibitors for the treatment of respiratory infections
Elźbieta Pamuła, AGH University of Krakow, Faculty of Materials Science and Ceramics, Poland

P1-136 Indocyanine green-carrying PEGylated chitosan-decorated polydopamine nanoparticles with robust glutathione-depleting capability and photothermal effect for self-reinforced tumor phototherapy
Wen-Hsuan Chiang, National Chung Hsing University, Chinese Taipei

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P1-137 Synthesis and stabilization of silver nanoparticles in copolymeric micelles combined with rose bengal for photodynamic therapy
EDVANI MUNIZ, State University of Maringa, Brazil

P1-138 Photodynamic Nanodrug Design Based on Tumor Biological Feature
Jing Ruan, Shanghai Jiaotong University School of Medicine, China

P1-139 177 Lu Labeled, Galectin-3 Targeting, Glycocalyx Mimicking Niosomes For Chemo Radionuclide Therapy
Biji Balakrishnan, Somaiya Vidyavihar University, Vidyanagar, Vidya Vihar East, Vidyavihar, Mumbai, Maharashtra 400077, India

P1-140 Implantable pre-metastatic niches for the study of the microenvironmental regulation of disseminated tumor cell biology
Jungwoo Lee, University of Massachusetts-Amherst, USA

P1-141 The exploration of different dimensional particles in biomedical carrier
Hua Yue, Institute of Process Engineering,Chinese Academy of Sciences, China

P1-142 Enhancing cancer radiation therapy with hafnium-doped bioceramic nanoparticles
Min-Hua Chen, Department of Biomedical Engineering, Chung Yuan Christian University, Taoyuan City, 320314, Taiwan, Chinese Taipei

P1-143 Platelet-Mimicking Supramolecular Nanomedicine with Precisely Integrated Prodrugs for Cascade Amplification of Synergistic Chemotherapy
Yuanfu Ding, University of Macau, Macao SAR, China

P1-144 Enhancing melanoma therapy by modulating the immunosuppressive microenvironment with an NMP-2 sensitive and nHA/GNE co-encapsulated hydrogel
Xiangdong Zhu, National Engineering Research Center for Biomaterials, Sichuan University, China

P1-145 Epidermal growth factor nanoconjugates switch from anti-apoptotic to pro-apoptotic at membrane rafts
Shota Yamamoto, National Institute for Materials Science, Japan

P1-146 Endogenous H_2S responsive copper deficient $Cu_{2-x}Se$@BSA nanoparticles for photothermal and chemodynamic combination therapy against colon cancer
Hsin-Cheng Chiu, National Tsing Hua University, Chinese Taipei

P1-147 A cardiac microphysiological system for screening lipid nanoparticle/mRNA complexes predicts in vivo efficacy for heart transfection
Gabriel Neiman, Department of Bioengineering and California Institute for Quantitative Biosciences (QB3), University of California at Berkeley, USA

P1-148 Injectable hydrogels for the disease-triggered release of VHHs for intra-articular disease modification
Bram Zoetebier, University of Twente, Netherlands

P1-149 V-polydopamine-based nano-enzyme hydrogel for inhibiting melanoma recurrence and promoting skin defect repair
Jun Cao, Sichuan University, China

P1-150 Magnetic nanoparticle-incorporated composite scaffolds for cancer therapy
Guoping Chen, Research Center for Macromolecules and Biomaterials, National Institute for Materials Science, Japan

P1-151 Cyclic peptide / polymer conjugates for therapeutic applications
Sebastien Perrier, University of Warwick, United Kingdom

P1-152 Black Phosphorus as emerging bio-nanomaterial for local prostate cancer treatment
Maria Grazia Raucci, Institute of Polymers, Composites and Biomaterials (IPCB-CNR), Italy

P1-153 Enhancing Tumor Immunotherapy Efficacy by Co-Delivery of Manganese and CpG Using Nano-Adjuvants
Qin Zeng, Sichuan university, China

P1-154 Neuropeptide-based Molecular Imaging
Juan Li, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, China

P1-155 Effective permeation into cell spheroids using anticancer drug conjugated sulfobetaine polymers
Nobuyuki Morimoto, Shimane University, Japan

P1-156 Potentiated cancer therapy through carrier-drug synergy of molecular targeted drug-loaded green tea-based nanoparticles
Motoichi Kurisawa, Japan Advanced Institute of Science and Technology, Japan

P1-157 Generation of cancer-associated fibroblast subsets using viscoelastic hydrogels
yunyun wang, National University of Singapore, Singapore

P1-158 Precision-controlled payload release from microbubbles clusters: A dual-frequency approach using acoustic vortex tweezers and low-frequency ultrasound
Elaine Huang, National Tsing Hua University, Chinese Taipei

P1-159 Development of boron-containing apatite ceramics for adoptive immunotherapy in cancer treatment
Yuki Ohshima, Meiji University, Japan

P1-160 Single-cell geometry mediates Osteosarcoma cell's ability of self-renewal via myosin II
Withdrawal
Ran Yan, University of Electronic Science and Technology of China, China

P1-161 Development of Injectable Theranostics Electrospun Nanostructure for Targeted Photochemotherapy in Breast Cancer
Amreen Khan, Indian Institute of Technology Bombay, India

P1-162 Flexible nanosheets as integrated implantable cancer treatment devices
Yan CHEN, WASEDA University, Japan

P1-163 Mn-anti-CTLA4-CREKA-sericin nanotheragnostics for enhanced magnetic resonance imaging and tumor immunotherapy
Zixuan Huang, Shanghai Jiao Tong University, China

P1-164 Co-delivery of fulvestrant and siRNA in nanoparticles for treatment of drug-resistant breast cancer
Kai Slaughter, University of Toronto, Canada

P1-165 Herb extracellular vesicle-chitosan-PEGylated graphene oxide conjugate delivers estrogen receptor alpha targeting siRNA to breast cancer cells
Withdrawal
Saroj S, Shiv Nadar Institution of Eminence, India

P1-166 NIR-activated organic molecule-based nanocomposites with photothermal and photodynamic effects for cancer treatment
MING-HSIN LIU, National Taiwan University, Chinese Taipei

P1-167 Theranostic systems based on surface-modified superparamagnetic iron oxide nanoparticles for capture and elimination of the circulating tumor cell
Adrianna Machowska, Faculty of Chemistry, Jagiellonian University, Kraków; Doctoral School of Exact and Natural Sciences of the Jagiellonian University, Kraków, Poland

P1-168 Surface-modified magnetic nanoparticles: tumour imaging agents with drug-delivery ability
Martyna Kasprzyk, Faculty of Chemistry, Jagiellonian University, Cracow, Poland; Chair of Medical Biochemistry, Jagiellonian University Medical College, Cracow, Poland; Doctoral School of Exact and Natural Sciences, Jagiellonian University, Cracow, Poland, Poland

P1-169 Utilizing atovaquone-incorporated thermosensitive hydrogel to synergize with radiation by energy deprivation for high-grade glioma
Ying-Ru Chen, National Taiwan University, Chinese Taipei

P1-170 Preparation of Hyaluronic Acid - Foreign Antigen Conjugates for Modification of Cancer Antigenicity
Sayaka Oitate, The University of Kitakyushu, Japan

P1-171 Induction of antigen-specific immune responses using conjugates containing peptide and CpG-DNA
Daichi Muku, The University of Kitakyushu, Japan

P1-172 Functionalized ultrasound microbubbles for photodynamic therapy in the experimental orthotopic renal cancer model
Daria Terentyeva, Skolkovo Institute of Science and Technology, Russia

P1-173 AIE-type Bio-fluorescent Probes With NIR-II region emission for tumor detection
Yuanyuan Ding, Sichuan University, China

P1-174 Surface modification of macrophages for efficiently elimination of solid tumor cells
Yuto Tabe, Kansai University, Japan

P1-175 Modulating tumor immunosuppressive microenvironment by manganese-based metal coordination self-healing hydrogel boosted photothermal induced immunotherapy against breast cancer
Tinghua Li, Sichuan university, China

P1-176 Nanoparticle elasticity modulates hypoxic tumor-associated macrophages repolarization to inhibit tumor growth
Zichen Yang, Tongji University, China

P1-177 Gadolinium-based Theranostic Nanoparticles for Cancer Treatment and Dual Photoacoustic/Magnetic Resonance Imaging
xingchen Wang, Graduate School of Engineering, Kyoto University, Japan

P1-178 Microenvironmental influence on magnetic thermal property and anticancer effect of Fe3O4 nanoparticles
Man Wang, University of Tsukuba/NIMS, Japan

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P1-179 Bifunctional cascading nanozymes based on carbon dots promotes photodynamic therapy by regulating hypoxia and glycolysis
Huan Yang, National Engineering Research Center for Biomaterials, Sichuan University, China

P1-180 A ROS-enhanced Photosensitizer-loaded Photothermal Composite Scaffold for Light-guided Cancer Therapy
Xiaohan Liu, University of Tsukuba; National Institute for Materials Science, Japan

P1-181 Multifunctional Baghdadite ceramic for local chemotherapy and bone regeneration
Sally Kortam, University of Sydney, Australia

P1-182 Miniature Ultrasonic Microneedles Device for Enhanced Epidermal Penetration
Hao-Chun Hu, National Tsing Hua University, Chinese Taipei

P1-183 Potential from synergistic effect of phytochemicals and anticancer drugs co-encapsulated in the targeted nanogels for chemotherapy
Dinh Trung Nguyen, Duy Tan University, Vietnam

P1-184 Regulating the influx of calcium ion into mitochondria with hydroxyapatite/mesoporous silica coated nanoparticles to enhance photothermal/chemo combination therapy
Shan-Neng You, National Tsing Hua University, Chinese Taipei

P1-185 Targeted delivery of multiresponsive mesoporous manganese dioxide coated nanotherapeutics for chemo/chemodynamic therapies against colorectal cancer
Xiang-Yun Song, National Tsing Hua University, Chinese Taipei

P1-186 Biodegradable block copolymers incorporating tyrosinate groups demonstrate a highly effective capability for in vivo mRNA delivery
Yuki Nakashima, University of Tokyo, Japan

P1-187 Aptamer-modified, biomimetic peptide amphiphile micelles for targeted hematological cancer treatment
Agustin Barcellona, University of Missouri - Columbia, USA

P1-188 Engineered hetero nanostructures for photocatalysis-mediated intratumoral H_2S splitting and drug-free colon cancer therapy
Arjun Sabu, National Tsing Hua University, Chinese Taipei

P1-189 Synthetic bone marrow niches for testing novel leukaemia therapies
William Sebastian Doherty-Boyd, University of Glasgow, United Kingdom

P1-190 Polymeric adapalene-loaded nanospheres targeting skin layers and hair follicles
Bozena Michniak-Kohn, Rutgers the State University of New Jersey, USA

P1-191 Stiffness of Collagen-I Micro-Forms in Ventricular Myocardium
Ken Webb, Clemson University, USA

P1-192 Nano lipid carrier-based targeted combinatorial nanoformulations loaded gel for the effective treatment of skin cancer
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Nazeer Hasan, Department of pharmaceutics, SPER, Jamia Hamdard, India

P1-193 Trojan horse for targeted therapy of kidney cancer
Olga Sindeeva, Skolkovo Institute of Science and Technology, Russia

P1-194 Activatable chemodynamic therapy – the HULK system
HULIN JIANG, CHINA PHARMACEUTICAL UNIVERSITY, China

P1-195 Designing nanomedicines for breast cancer therapy
Amarnath P. Rajendran, Department of Chemical and Materials Engineering, Faculty of Engineering, University of Alberta, Edmonton, T6G 2V2, Canada, Canada

P1-196 A novel anti-inflammatory oxaliplatin (IV) prodrug nanomedicine to enhance colorectal cancer therapy
Lei Xing, State Key Laboratory of Natural Medicines, China Pharmaceutical University, Nanjing 210009, China

P1-197 Novel drug delivery systems for regenerative medicine applications for perspective valorization of agricultural-derived waste products
Irene Carmagnola, Politecnico di Torino, Italy

P1-198 Self-Assembled Carbon Dots in Bioapplications
Yu-Fen Huang, National Tsing Hua University, Chinese Taipei

P1-199 One stone two birds strategy based on nano-photosensitizers constructed via a non-cyanine dye for deep NIR excited PDT and PTT
dawei jiang, Affiliated Cixi Hospital, Wenzhou Medical University, China

P1-200 Development of hydrogel vascular surrogates for molecular diffusional studies
Rosaire Mongrain, McGill University, Canada

P1-201 Atomic-Level Modulation of Functional Metal Nanomaterials for Tumor-Specific Therapy
Xi Hu, Anhui University of Chinese Medicine, China

P1-202 Using micelle-coated radioisotope-labeled antibody to improve the hepatocellular carcinoma treatment efficacy
Yi-Ling Chen, Kaohsiung Medical University Hospital, Kaohsiung Medical University, Chinese Taipei

P1-203 Studies into Cancer Tissue Stiffness and Immune Therapy Effectiveness: Convergence of 3D Printing and T-Cells
Mahdiyeh Nouri Goushki, Delft university of technology (TUDelft), Netherlands

P1-204 ATP-Responsive Manganese-Based Bacterial Materials Selectively and Synergistically Activate the cGAS-STING Pathway for Tumor Immunotherapy
Huang Yang, Zhejiang University, China

P1-205 Synergistic Immunomodulation through Dual Antibody Therapy Targeting CD47 and CD24 for Enhanced Antitumor Immunity in Glioblastoma
Jonghoon Ha, MD Anderson Cancer Center, USA

P1-206 Nano-bio interface effect of graphene oxide boosted CAR-T cells against diverse refractory leukemia
Yan Wang, Institute of Process Engineering, Chinese Academy of Sciences, China

P1-207 Hyaluronic Acid-Coated Silver Nanoparticles Releasing Doxorubicin for Combinatorial Antitumor Therapy
Thi Phuong Le, Vietnam Academy of Science and Technology, Vietnam

P1-208 Harnessing 3D biomaterials-based osteosarcoma model for personalized therapy
Jeehee Lee, Stanford University, USA

P1-209 Nanogalvanic control of magnesium degradation by-products for cancer therapy
Viviana M. Posada, The Pennsylvania State University, USA

P1-210 Development of a Polyethyleneimine-Modified Methylcellulose Nanocarrier for Doxorubicin Delivery to Cancer Cells
Kitae Ryu, Department of Biotechnology, The University of Suwon, Korea, Republic of

P1-211 Cholesterol-incorporated mRNA for enhancing lipid nanoparticles (LNPs)-mediated mRNA delivery efficiency
Choeun Park, College of Pharmacy, Gyeongsang National University, Korea, Republic of

P1-212 Intravital imaging of nanoparticle accumulation in a peripheral nerve injury model within neural tissue
Hsuan-Ju Chen, IVIM Technology, Korea, Republic of

P1-213 One-pot synthesis of fluorescent polydopamine nanoparticles inspired by melanogenesis in nature
Haejin Jeong, Daegu Gyeongbuk Institute of Science and Technology, Korea, Republic of

P1-214 Tumor targeted ROS-sensitizing metal laden Polymeric Nanoparticles
Geum Byeol Park, KIRAMS(Korea Institute of Radiological and Medical Sciences), Korea, Republic of

P1-215 Self-Assembled Nanostructure Encapsulating 5 -Fluorouracil and Doxorubicin for Facilitated Eradication of Colorectal Carcinoma via Synergistic Chemotherapy
Khanh-Linh Le Tran, Department of Medical Biomaterial Engineering, College of Biomedical Sciences, Kangwon National University, Korea, Republic of

P1-216 Locally sustained immune checkpoint blockade therapy using mesoporous polydopamine nanoparticles.
Khizra Mujahid, Chonnam National University, Gwangju, South Korea., Korea, Republic of

P1-217 Locally sustained immune checkpoint blockade therapy using mesoporous polydopamine nanoparticle
Khizra Mujahid, Chonnam National University, Gwangju, South Korea., Korea, Republic of

P1-218 Mesoporous silica nanoparticles-based delivery of cyclic dinucleotides and metal ions for amplifying STING activation in cancer immunotherapy
Isra Rana, Chonnam National University, Korea, Republic of

P1-219 Lipid-polymer hybrid nanoparticles for adipocytolysis
In Young Lee, Hanyang university, Korea, Republic of

P1-220 Targeted neuroblastoma therapy with peptide-modified echogenic polymer micelles
Yunchan Lee, Department of Bioengineering, Hanyang University, Seoul 04763, Korea, Republic of

P1-221 Development of polysaccharide immunomodulator for controlling innate immune cells
Yubin Kim, Department of Biological Sciences and Bioengineering, Inha University, Incheon 22212, Korea, Republic of

P1-222 Reprogramming of immunosuppressive tumor-associated macrophages (TAMs) and myeloid-derived suppressor cells (MDSCs) by polysaccharide mannan
Juwon Baig, Department of Biological Sciences and Bioengineering, Inha University, Incheon, Korea, Republic of

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P1-223 Synthesis of polymeric nucleic acids-cellulose nanocrystals nanocomplex for functional drug delivery
Yeongmok Kim, Department of Biotechnology, Yonsei University, Seoul, Korea, Republic of

P1-224 Multi-targeting siRNA nanoparticles for tunable B-cell specific delivery with enhanced anticancer efficacy
Kyung Hoon Park, Department of Biotechnology, College of Life Science and Biotechnology, Yonsei University, Korea, Republic of

P1-225 Low Molecular Weight PEG for Stem Cell Spheroid Cryopreservation
Madhumita Patel, Ewha Womans University, Korea, Republic of

P1-226 Guiding neural stem/progenitor cells towards neuronal specification using electroconductive and mechano-competent PUCL@CNT nanohybrid scaffolds
Jeong-Hui Park, Dankook Uninversity, Korea, Republic of

P1-227 Improving volumetric muscle regeneration with human induced pluripotent stem cell (iPSC)-derived exosome conjugated hydrogels
Jieun Jeon, Harvard Medical School, Division of Engineering in Medicine, Brigham and Women's Hospital, USA

P1-228 The effects of insulin-like growth factor-1 on cell morphology, cell viability, osteogenic differentiation, and mRNA expression of stem cell spheroids
Somyeong Hwa, Department of Periodontics, Seoul St Mary's Hospital, College of Medicine, The Catholic University of Korea, Korea, Republic of

P1-229 3D Bioprinting of Diverse Tissue Models with Precision Control of MSCs Differentiation
Yurim Choi, Department of Material Science and Engineering, Pohang University of Science and Technology, Pohang, Korea, Korea, Republic of

P1-230 Enhanced angiogenesis by surface-immobilized therapeutic peptides onto stem cells for the prevention of liver fibrosis
Hee Won Park, Dongguk University, Korea, Republic of

P1-231 Development of lactobionic acid-mediated lipid cojugates for ex-vivo stem cell surface engineering to treat liver cirrhosis
Hee Won Park, Dongguk University, Korea, Republic of

P1-232 Growth factor-incorporated gelatin microparticles mediated 3-Dimensional Embryoid body differentiation into mesenchymal stem cells
Nityanand Prakash, Dongguk University, Korea, Republic of

P1-233 Fabrication and Detachment of CSC Cell-sheet using ROS-generated Photosensitive Film
Seo In Lee, Yonsei University, Korea, Republic of

P1-234 Hybrid magnetic-nonmagnetic nanopore system for reversible control of ligand presentation in stem cell differentiation
Dahee Kim, Korea university, Korea, Republic of

P1-235 Developmentally-inspired hypoxic conditions promotes kidney organoid development
Hyeonji Lim, UNIST, Korea, Republic of

P1-236 Well-controlled chondrogenesis of MSCs by highly quality controlled decellularized extracellular matrix
Jeonghoon Lee, Department of Medicine, Seoul National University College of Medicine, Seoul 03080, Korea., Korea, Republic of

P1-237 Stem cell spheroids-encapsulated antioxidant hydrogel enhances regeneration of radiation-damaged salivary glands
Hyerin Yoo, Department of Medicine, Seoul National University College of Medicine, Korea, Republic of

P1-238 Rapid and Self-Sustained Endochondral Ossification via MSC and HUVEC Co-culture Spheroids in Biphasic Osteovascular Biomimetic Scaffold
Jinwoo Na, Department of Polymer Science and Engineering, Korea National University of Transportation, Korea, Republic of

P1-239 Non-invasive identification between naive and primed PSCs based on the differences in cellular energy metabolism
HyungJoo Kim, School of Integrative Engineering, Chung-Ang University, Seoul, 06974, Korea, Republic of

P1-240 An injectable hydrogel based on hyaluronic acid containing transforming growth factor-beta3 and bone marrow-derived mesenchymal stem cells for cartilage regeneration
Taewoong Kang, Jeonbuk National University, Korea, Republic of

P1-241 Direct conversion of mouse embryonic fibroblasts by the complex of cell-permeable peptide with Oct4 delivery
Da Hyeon Choi, Chungbuk National Univeristy, Korea, Republic of

P1-242 Development of a new immunoisolation technology with zona pellucida for pancreatic islet transplantation
Hyunsu Lee, Konkuk University Institute of Biomedical Science&Technology researcher, Korea, Republic of

P1-243 Recapitulate Temporal Gradient of Retinoic Acid Provision for iPSC-Motor Neuron Differentiation Using Biodegradable Porous Silicon Microparticles
Changho Chun, University of Washington, USA

P1-244 Probing the effects of polysaccharide hydrogel composition on the viability and pro-angiogenic function of human adipose-derived stromal cells
Lauren Flynn, Western University, Canada

P1-245 Extending the utility of a bioactive composite with loading and delivery of a naturally occurring fatty acid to control infection
J. Amber Jennings, The University of Memphis, USA

P1-246 Lipopeptide systems enhance pDNA delivery for tumor therapy and bone regeneration
Yu Nie, Sichuan University, China

P1-247 Adipocyte differentiation of adipose-derived stem cells in temperature-responsive injectable polymer hydrogel using biomacromolecules as cross-linkers
Nobuo Murase, Kansai University, Japan

P1-248 Enhancing mesenchymal stromal cells bioactivity in microbeads scaffold: towards an optimised cell therapeutic product for ischemic diseases
Sophie Lerouge, Department of mechanical engineering, École de technologie supérieure (ETS), Montreal Qc Canada; Centre de Recherche du Centre Hospitalier de l'Université de Montréal (CRCHUM) Montréal, Qc; Department of pharmacology and physiology, Université de Montréal, Montreal Canada, Canada

P1-249 Boron alleviates osteoporosis in ovariectomized mice by enhancing osteogenesis of bone marrow mesenchymal stem cell
Ping Du, Shenzhen Key Laboratory of Biomimetic Materials and Cellular Immunomodulation, Shenzhen Institute of Advanced Technology Chinese Academy of Sciences, China

P1-250 Inorganic-organic hybrid nanoparticles from amorphous calcium phosphate clusters for biomedical applications
Xing Zhang, Institute of Metal Research, Chinese Academy of Sciences, China

P1-251 Mesoscale structure regulation and functionalization of collagen biomaterials
Xue Qu, East China University of Science and Technology, Shanghai, China ,China

P1-252 Microstructure modification and properties regulation of Mg-Zn-Nd alloy
Gao Ming, The Institute of Metal Reserach, Chinese Academy of Sciences, China

P1-253 Development of Hydroxyapatite Ceramics Scaffolds with Vascular Endothelial Growth Factor for Regeneration of Vascular and Bone Tissue and its evaluation
Haruka Shibahara, Graduate School of Science and Technology, Meiji University, Japan

P1-254 Steering stem cell fate within 3D living composite microaggregates using stimuli-responsive cell-adhesive micromaterials
Niels Willemen, University of Twente, Netherlands

P1-255 3D microenvironments program stem cell linage commitment via a novel mechano-chemical axis governed by intracellular molecular crowding
Marieke Meteling, Leijten Lab, Department of Developmental BioEngineering, TechMed Centre, University of Twente, Netherlands

P1-256 An off-the-shelf artificial blood clot hydrogel neutralizing multiple proinflammatory mediators for pro-regenerative periodontitis treatment
Yini Huangfu, Tianjin University, China

P1-257 Cardiac patches made of brown adipose-derived stem cell sheets and conductive electrospun nanofibers restore infarcted heart for ischemic myocardial infarction
Xinbo Wei, Beihang University, China

P1-258 Micro-sized gelatin polyurethane composite scaffolds: new delivery carrier for intramyocardial hPSC-derived cardiomyocyte transplantation
Yizhou Chen, Institute of Biomedical Engineering, University of Toronto, Canada

P1-259 Optimised release of tetracycline hydrochloride from core-sheath fibres produced by pressurised gyration
Hamta Majd, University College London, United Kingdom

P1-260 Self-stimulating hydrogel scaffold for cartilage repair with patient-derived stem cells
Amy Xie, Department of Electrical and Biomedical Engineering, School of Engineering, RMIT University, Melbourne VIC 3000, Australia

P1-261 Creating magneto-active fibrous electrospun scaffolds for the remote mechanotransduction of human mesenchymal stem cells
Clarissa Tomasina, Complex Tissue Regeneration Department, MERLN Institute for Technology-Inspired Regenerative Medicine, Maastricht University, Universiteitssingel 40, 6229 ET Maastricht, The Netherlands, Netherlands

P1-262 Porous poly(lactic-co-glycolic acid) microshuttles can deliver bioactive factors of different sizes in spheroidal microtissues
Ke Song, Maastricht University, Netherlands

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P1-263 Orchestrating cell fate. Biomimetic DGL-PEG hydrogels for hMSC osteogenic differentiation
Michele Valeo, University of Bordeaux, France

P1-264 Corneal cell-laden gels crosslinked in situ with bioorthogonal chemistry for corneal regeneration
Lucia Brunel, Stanford University, USA

P1-265 Enhancing stem cell therapy: a dual-labeling nanoparticle system for photoacoustic stem cell tracking and magnetic retention
Anamik Jhunjhunwala, Department of Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine, Atlanta, GA, USA

P1-266 Soft PVA-PLL hydrogel for tissue-engineered human motor neuron-like structures
SHUQIAN WAN, The University of New South Wales (UNSW), Australia

P1-267 DECOUPLING the effects of pore size and extracellular matrix stiffness on 3D stem cell mechanosensation
Samuel Maher, University of Western Australia, Australia

P1-268 From fat to muscle: smooth muscle differentiation of adipose-derived stem cells using a combination of biomechanical and biochemical induction
George McColgan, University of Western Australia/Harry Perkins Institute of Medical Research, Australia

P1-269 A kirigami strategy for 4D tissue formation
Kaelyn Gasvoda, University of Illinois-Chicago, USA

P1-270 Visual enhancement of RCS rats by transplantation of RPE derived from hiPSCs on xeno-free ECM-coated surface
Zeyu Tian, The Eye Hospital of Wenzhou Medical University, China

P1-271 Comparison of hydrogel-mediated RPE cell transplantation and cell suspension transplantation in an animal model of advanced retinal degeneration
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P1-272 Enhancing cell activity and therapeutic effects of stem cells by label-free magnetic 3D cell assembly
Xuhao Zhou, School of Medicine, Zhejiang University, China

P1-273 Tissue integration strategies utilitzing heterogenous heparin particles in Microporous Annealed Particle (MAP) hydrogels as chemotactic cues
Juliana Trujillo, University of Virginia, USA

P1-274 Covalent Stem Cell-Combining Injectable Gels with Enhanced Stemness and Controlled Differentiation In Vivo
NATSUMI UEDA, Graduate school of Konan University, Japan

P1-275 A rapid Endothelial Cell Seeding Technology for Artificial Vascular Grafts
Ye Wan, Key Laboratory of Bioactive Materials, Ministry of Education, College of Life Sciences, State Key Laboratory of Medicinal Chemical Biology, Nankai University, Tianjin 300071, China., China

P1-276 Vacuum-assisted cell loading of a PCL-TCP scaffold for bone tissue engineering
Withdrawal
Jolene Quek, Nanyang Technological University, Singapore

P1-277 Hydrogel stiffness dependence of adipogenic differentiation of mesenchymal stem cells with controlled morphology
Chengyu Lu, University of Tsukuba/Research Center for Macromolecules and Biomaterials, National Institute for Materials Science, Japan

P1-278 Physical characterization of 3D printed composite scaffolds for scaffold guided bone regeneration (SGBR)
Elham Seifi, Queensland University of Technology (QUT), Australia

P1-279 Protein:peptide hydrogels provide an oxygenated microenvironment for cells
Elizabeth Zoneff, University of Melbourne, Australia

P1-280 Xeno-free culture of primary human mesenchymal stem cells on surface-modified cellulose nanofiber scaffolds
Ritomo Kai, Kyushu University, Japan

P1-281 Silicon effects on human dental pulp stem cells seeded in 3D dense collagen hydrogel
Daline Mbitta Akoa, Sorbonne Université, CNRS, Laboratoire de Chimie de la Matière Condensée de Paris, Paris, France

P1-282 A Nanostructured biomimetic triumvirate hydrogel enables phenotypic switching to direct the differentiation of bone marrow stromal cells
Withdrawal
Gebreselassie Kidane Haye, Institute of Mental and Physical Health and Clinical Translation, School of Medicine, Deakin University, Waurn Ponds, Victoria, Australia, Australia

P1-283 Wavy morphology regulates YAP signaling
Shih-An Huang, National Taiwan University, Chinese Taipei

P1-284 *In vitro* stimulation-conduction platforms to mature induced pluripotent stem cell-derived cardiomyocytes
Suh Hee Cook, North Carolina State University, USA

P1-285 Gelatin is a useful medium for cell adherence and growth during blood cell conversion to IPSCs
Pierre Schembri-Wismayer, Centre for Molecular Medicine and Biobanking, University of Malta, Malta

P1-286 Development of lyophilized mRNA-LNPs and their effects on rapid differentiation of hiPSCs into cardiomyocytes
Ting Wang, Eye Hospital, Wenzhou Medical University, China

P1-287 Lung extracellular matrix-derived hydrogel scaffolds promote the production of exosomes by mesenchymal stromal cells
Jorge Otero, Universitat de Barcelona, Spain

P1-288 Fluorapatite surfaces drive stromal vascular fraction stem cells to an osteogenic lineage
Jill Shea, University of Utah, USA

P1-289 Multifunctionality of Novel Glycerin Compounds and Their Application as Biomaterials
Gotaro Shiota, Mediplus Pharma Inc., Japan

P1-290 Regulation and directing stem cell fate by materiabiological effects of sulfonated-gelation scaffolds via SIRT1/SIRT3
Qinghao Zhang, Southern University of Science and Technology, School of Life Science, China

P1-291 The electro-mechanical stimulus on neuronal differentiation in 3D conductive hydrogel
Xintong Zhou, The Hong Kong Polytechnic University, Hong Kong SAR, China

P1-292 Fabrication of hyaluronic acid-based hydrogel with anisotropic stiffness by inkjet patterning of hydrogen peroxide
Wildan Mubarok, Osaka University, Japan

P1-293 Cell-Derived Extracellular Matrix for tissue engineering and cultured meat
Svenja Nellinger, Reutlingen University, Germany

P1-294 construction of lp-pla2-responsive pro-efferocytic platform for post-stent healing
Dan ZOU, XiHua University, China

P1-295 Plant-derived bio-machinery achieved potent therapy for solid tumors and acute kidney injury by metabolic reprogramming
Yao Lei, Peking University Health Science Center, China

P1-296 Deciphering mTORC$_2$ signalling to promote mesoderm differentiation through intercellular dynamics and WNT activation in early embryonic development.
Faiza Batool, Imperial college London, United Kingdom

P1-297 Evaluation of Fibronectin–coated microparticle for iPSCs-derived MSCs isolation
Jae-Hyeok Jang, Department of Systems Immunology, Division of Biomedical Convergence, College of Biomedical Science, Kangwon National University, Korea, Republic of

P1-298 Electrical Adipocyte Modulation Technology (EIAMoT) for Non-invasive Regulation of Adipose Tissue
Min Young Kim, DGIST, Korea, Republic of

P1-299 Electrophysiologically and biochemically nanoengineered cardiac muscle tissue constructs with enhanced maturation
Woochan Kim, Chonnam National University, Korea, Republic of

P1-300 Janus patch with adhesive and anti-adhesive property as a post-operative adhesion barrier
ShinYull Lee, Chonnam National University, Korea, Republic of

P1-301 Development of iPSC-derived FIX-secreting hepatocyte sheet for hemophilia B
So Hee Han, Jungwon University, Korea, Republic of

P1-302 Alveolar Bone-Derived MSCs(abMSCs) Show Potential for Osteoblast Differentiation with Reduced Macrophage Contamination
Jaemin Joun, Chonnam National University, Korea, Republic of

P1-303 Restoration of corneal endothelial dysfunction by transplanting functional corneal endothelial cells derived from human induced pluripotent stem cells
Eun-Ah Ye, 1Department of Ophthalmology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea, Korea, Republic of

P1-304 Therapeutic effects of decellularized extracellular matrix-based adhesive restorative material on the corneal regeneration in a model of corneal alkali burn
Eun-Ah Ye, 1Department of Ophthalmology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea, Korea, Republic of

P1-305 Biomimetic multi-fascicle nerve guidance conduit graft for peripheral nerve defect in a rhesus macaque model
Yu-Jin Kim, Korea Institute of Science and Technology, Korea, Republic of

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P1-306 Modification Of Nature-Derived Polymeric Material To Hybrid Bionanocomposite For In Vitro Anticancer Activity
Annu, Yeungnam University, Korea, Republic of

P1-307 Enhancement of the Decomposition Efficacy of Cutinase from Thielavia terrestris through Random Mutagenesis
Seo Hyung Moon, Inha University, Korea, Republic of

P1-308 Elastin domain-derived proteins, new types of elastin-like protein that bring the characteristics of human elastin
Seung Kyeum Cho, Pohang University of Science and Technology, Korea, Republic of

P1-309 Controlling the degradation rate of CaO-SiO2-P2O5-B2O3-based bioactive glass
Doyeon LEE, CGBio, Korea, Republic of

P1-310 Development of an absorbable silk fibroin hydrogel for the prevention of postoperative tendon adhesion
Yusuke Kambe, Institute of Agrobiological Sciences, National Agriculture and Food Research Organization, Japan

P1-311 In vitro and in vivo degradation correlations for polyurethane foams with tunable degradation rates
Mary Beth Monroe, Syracuse University, USA

P1-312 Nano-toxicologic analysis of micro/nanoplastic models using an in vitro gut model
Masaya Yamamoto, Graduate School of Engineering, Tohoku University, Japan

P1-313 Towards development of a high-corrosion resistance Mg alloy and beneficial microenvironments for bone regeneration with Sc-assisted growth of passive film
zhengguang Wang, The third hospital of Peking university, China

P1-314 The effect of Si-containing products degraded from chitosan–siloxane hybrid on neuronal cell
Yuki Shirosaki, Kyushu Institute of Technology, Japan

P1-315 Impact of vitronectin adsorption on macrophage mediated degradation of poly(trimethylene carbonate)
Brian Amsden, Queen's University, Canada

P1-316 Characterization on hydration properties of a glycopolymer by thermal analysis
Shohei Shiomoto, Institute for Materials Chemistry and Engineering, Kyushu University, Japan

P1-317 Degradation versus local osteoclastic resorption of bioinspired composites for tissue regeneration and drug delivery
Benjamin Kruppke, TUD Dresden University of Technology, Germany

P1-318 Hot deformation behavior and microstructure evolution of degradable Zn alloys
Meng Li, University of Science and Technology Beijing, China

P1-319 Characterization of biomaterial-induced tissue remodeling
Jessica L. Stelzel, Johns Hopkins University, USA

P1-320 Use PLA-PCL Biodegradable Microspheres in Transarterial Embolization
Bo-Rong Lu, Department of Chemical Engineering and Biotechnology, National Taipei University of Technology, Taipei 10608 Chinese Taipei

P1-321 Polyhydroxyalkanoates as biodegradable polymeric biomaterial
Irem Soyhan, University Medical Center Groningen (UMCG), Netherlands

P1-322 Microstructure optimization of Ti-36Nb-2Ta-3Zr-0.21O for implant applications
Elias Merz, Technische Universität Braunschweig - Institut für Werkstoffe, Germany

P1-323 Synthesis, characterization, thermal stability, and in vitro and in vivo degradation study of polycaprolactone and polyglycolide block copolymers
Quan Zhao, Sichuan University, China

P1-324 Reducing Non-specific Degradation of Peptides Improves Biomaterial Performance
Samuel Rozans, Lehigh University, USA

P1-325 Utilizing calcium channel blocker loaded hydrogel to prevent post-surgical adhesion
Jiahui Chen, North Carolina State University Department of Textile Engineering, Chemistry and Science, USA

P1-326 *In Vitro* Cytotoxicity of Tin Chloride on MC3T3-E1 Pre-osteoblasts
Charley Goodwin, Clemson University, USA

P1-327 Impact of small additions of alloying elements on the microstructure and properties of low-alloyed zinc for biomedical applications
Magdalena BIEDA-NIEMIEC, Institute of Metallurgy and Materials Science Polish Academy of Sciences, Poland

P1-328 Hydrostatic compliance testing by optical coherence tomography for mechanical characterization of the human femoral vein wall
Wolfram Schmidt, Rostock University Medical Center, Institute for Biomedical Engineering, Germany

P1-329 Developing a new composite biochar-based proton exchange membrane to enhance the removal efficiency of VOCs of bioelectrochemical systems
Shu-Hui Liu, National Yunlin University of Science and Technology, Chinese Taipei

P1-330 Tribological assessment of capsule surface design for robotic endoscopy
Ahranee Canden, University of Sheffield, United Kingdom

P1-331 The interaction between skin and rocks for climbers
Sam Davison, The University of Sheffield, United Kingdom

P1-334 Hyaluronic acid-based powder-type anti-adhesion agent with improved adhesiveness
Jeongmin Kim, Kumoh national institute of technology, Korea, Republic of

P1-335 Controlling the release of Ag-based coatings using low pressure plasma for antibacterial applications
Maria Elena Lombardo, Laval University, Canada

P1-336 Nitric Oxide (NO)-Releasing Nanoparticle as Bacteria GSH-Responsive Antibiotics
Kyeong Jin Cho, Chung-Ang University, Korea, Republic of

P1-337 Virus-mimicking biophysical assay platform for evaluating antiviral detergents and peptides: towards bloodborne virus removal applications
Lee ChangJun, Sungkyunkwan university, Korea, Republic of

P1-338 Design of the strain gradient neurorrhaphy patch for nerve repair in rodents and nonhuman primates
Duhwan Seong1, Sungkyunkwan University (SKKU), Korea, Republic of

P1-339 Biomimetic AgNPs@antimicrobial peptide/silk fibroin coating for infection-trigger antibacterial capability and enhanced osseointegration
Wenhao Zhou, Northwest Institute for Non-Ferrous Metal Research, China

P1-340 Swift Eradication of Staphylococcus aureus Using Sonodynamic Au@Cu2O Hybrid Nanocubes
Kelvin Yeung, The University of Hong Kong, Hong Kong SAR, China

P1-341 One-step multifunctional medical device coatings resisting ESKAPE pathogen colonization
Helmut Thissen, CSIRO, Australia

P1-342 In situ gelling poly(oligoethylene glycol methacrylate) (POEGMA)-based hydrogels with enhanced antimicrobial properties
Todd Hoare, Department of Chemical Engineering, McMaster University, Canada

P1-343 Internalization of zinc-doped hydroxyapatite nanoparticles for treatment of intracellular bone infections.
Lizzy Cuypers, RadboudUMC, Netherlands

P1-344 Improving Boston Keratoprosthesis Efficacy: Ion implantation for Enhanced Antimicrobial Defense and Biocompatibility
Carles Mas-Moruno, Biomechanics, Biomaterials and Tissue engineering, Universitat Politècnica de Catalunya, Spain

P1-345 Shedding light on the bactericidal potential of nanostructured calcium phosphates by synchrotron cryo soft x-ray microscopy
Marc Iglesias-Fernandez, Biomaterials, Biomechanics and Tissue Engineering Group, Department of Materials Science and Engineering, Universitat Politècnica de Catalunya (UPC), 08019 Barcelona, Spain, Spain

P1-346 Multi-functional Bio-HJzyme: revolutionizing diabetic skin regeneration with its glucose-unlocked sterilization and programmed anti-inflammatory effects
Miaomiao He, Sichuan University, China

P1-347 Enhancement of Antiviral Activity of Copper and Its Alloys with an Oligopeptide
Akiko Yamamoto, Research Center for Macromolecules and Biomaterials, National Institute for Materials Science,Japan

P1-348 Novel antimicrobial PG-coated urinary catheters with zwitterionic copolymers and light-activated chlorophyllin
Wei-Bor Tsai, National Taiwan University,Chinese Taipei

P1-349 New Fluorinated Polyphosphazene Biomaterials for Controlling Microbial Infection and Thrombosis
Lichong Xu, Penn State College of Medicine, USA

P1-350 Structural designs of cationic polymers as nitric oxide carriers for efficient antibacterial applications
Dong Ma, Jinan University, China

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P1-351 GOCap®: the next generation graphene-based light-activated cap for catheters disinfection
Inês Gonçalves, i3S - Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Porto, Portugal; INEB - Instituto de Engenharia Biomédica, Universidade do Porto, Porto, Portugal, Portugal

P1-352 Addressing the Challenge of Orthopedic Bacterial Infections: Advancements in Prolonged Antibiotic Release Carriers with Gelatin-Silica Hybrid Materials
Ren-Jei Chung, Department of Chemical Engineering and Biotechnology, National Taipei University of Technology, Chinese Taipei

P1-353 Hydrogels composed of ε-poly(L-lysine) and Polyethylene glycol diacrylate with tunable intrinsic antibacterial and antifungal properties
Philippe Lavalle, Inserm / University of Strasbourg, France

P1-354 Polycations and hyaluronic acid fillers for root canal treatment
Chloé Guilbaud-Chéreau, SPARTHA Medical, France

P1-355 Cascade amplification nanotechnology for highly sensitive and rapid detection of pathogenic bacteria
Zhentan Lu, Wuhan Textile University, China

P1-356 Non-antibiotic antimicrobial spray-coating for prosthetic joint infection
Nihal Engin Vrana, SPARTHA Medical, France

P1-357 Bioinspired sustainable adhesives for surgical applications
Julie Liu, Purdue University, USA

P1-358 Microwave assisted synthesis of ionic liquids for antimicrobial/antibiofilm coatings on dental materials
manju Saraswathy, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, India

P1-359 Preparation and characterization of bacterial nanocellulose/silver nanoparticles for antimicrobial wound dressing
Lina Fu, Huanghuai University; Zhumadian Central Hospital, China

P1-360 Anti-bacterial hydrogels prepared by atmospheric pressure microplasma
Meng-Jiy Wang, National Taiwan University of Science and Technology, Chinese Taipei

P1-361 Bioadhesive Hydrogels with Ultrafast Gelation Promote Gastric Ulcer ealing and Arrest Acute Gastric Hemorrhage
Xiayi Xu, South China University of Technology, China

P1-362 Extra virgin olive oil biowaste/polyhydroxyalkanoate fibers as antibaterial coatings for medical devices
Claudio Ricci, University of Pisa Dep of Civil and Industrial Engineering, Italy

P1-363 Coagulase-mediated biofilms: S. aureus defense mechanism yields surprising fatal flaw.
Grant Scull, The Joint Department of Biomedical Engineering at UNC-Chapel Hill and NC State University, Research Triangle Park, NC; Comparative Medicine Institute, Raleigh, NC, USA

P1-364 Titanium modified with a bioactive layer containing mesoporous bioactive glass produces an osteoblast-compatible with antimicrobial activity surface
Chi-An Luo, Chang Gung University, Chinese Taipei

P1-365 Quaternized N-chloramine-loaded electrospun nanofibers with potent antimicrobial activity
Sarah Currie, University of Manitoba, Canada

P1-366 Dual stimuli-responsive silver-loaded nanoparticles eliminate Staphylococcus biofilm
Zhaowei Jiang, Brown University, USA

P1-367 Unraveling the Molecular Mechanisms of Cytotoxicity Induced by physically crosslinked Hyaluronic Acid/ε -Poly-L-Lysine Hydrogel
Jingzhi Fan, Riga Technical University, Latvia

P1-368 Production of antibacterial microcapsules via the drop-on-demand technique
Haozhe Zhang, Department of Mechanical Engineering, National University of Singapore, 9 Engineering Drive 1, Singapore 117576, Singapore

P1-369 The effects of submicron topography on antibiotic efficacy against biofilms
Asma Khursheed, Pennsylvania State University, USA

P1-370 A microenvironment-responsive hydrogel with multiple antimicrobial strategies for diabetic wound healing
Qian Gao, Northwestern Polytechnical University, China

P1-371 A Universal, Facile N-Alkyltriolamine-Based Dual-Functionalization Strategy for Non-Leaching Lubricating /Antibacterial Medical Catheter Coatings
Ruyi Jiang, Beijing University of Chemical Technology, China

P1-372 Sustainability in clinical nanogel coating technology for combating central venous catheter infection
Ruichen Zhang, University Medical Center Groningen, Netherlands

P1-373 Self-assembly antibacterial peptidomimetic with a microenvironment-responsive self-amplified bactericidal effect for combating biofilm-associaated infections
Yuanyuan He, Sichuan University, China

P1-374 Cu anchored on carbon nitride as a bifunctional glucose oxidase and peroxidase nanozyme for antibacterial therapy
Fan Wu, University of Groningen, Netherlands

P1-375 Carbon quantum dots derived from chitosan derivative for infective biofilm control
CONG LI, University of Groningen, Netherlands

P1-376 Comparison the catalytic and anti-biofilm activities of Pt single-atoms differently-sized Pt nanoparticles on MnO_2 nanosheets
Qiaolan Shi, University of Groningen, Netherlands

P1-377 Polyphenol-modified gold nanoparticles to combat drug-resistant bacterial infections
yaran wang, University of Groningen and University Medical Center Groningen, Netherlands

P1-378 Stretchable ultrathin conducting membrane arrays for stable bidirectional neural interface
Jaehyon Kim, Sungkyunkwan University, Korea, Republic of

P1-379 Multifunctional modification strategies of polydimethylsiloxane -based antibacterial elastomers for biomedical applications.
Annija Stepulane, Chalmers University of Technology, Sweden

P1-380 Investigation of linoleic acid as an antibacterial additive in bone cement
Linglu Hong, Division of Biomedical Engineering, Department of Materials Science and Engineering, Uppsala University, Uppsala, Sweden. Department of Medical Biochemistry and Microbiology, Uppsala University, Uppsala, Sweden., Sweden

P1-381 Surfactant-free synthesized cyclodextrin nanogels for killing periodontitis-related biofilm pathogens
Yanjing Ji, University Medical Center Groningen, Netherlands

P1-382 Antimicrobial green coatings using electrospun polyhydroxyalkanoate fibers functionalized with mesoporous bioactive glass nanoparticles
Saverio Caporalini, University of Pisa, Italy

P1-383 Metal Ion Doped Bioactive Glass for Prevention of Orthopedic Infection
Kara Hageman, University of Kansas, USA

P1-384 Antimicrobial Properties of Bioactive Glass Incorporated Bone Cement to Prevent Periprosthetic Joint Infections
Kara Hageman, University of Kansas, USA

P1-385 Co-delivery of Polymyxin B and Rutin in a nano-formulation for Pseudomonas aeruginosa pulmonary infection in mice
Siran Wang, University Medical Center Groningen and University of Groningen, Netherlands

P1-386 Sustainable γ-cyclodextrin frameworks containing ultra-fine silver nanoparticles with enhanced antimicrobial efficacy
Hessah Alotaibi, Department of Mechanical Engineering, University College London, 4Department of Biomedical Engineering & King Faisal University, United Kingdom

P1-387 Evaluation of continuous antimicrobial activity of zinc-substituted hydroxyapatite/polymer composites for anti-infective catheters
Ryuta Shiromaru, Kindai University, Japan

P1-388 Effectivenes of antimicrobial peptides immobilised onto plasma polymer thin films
Zeynep Kocer, Swinburne university of technology, Australia

P1-389 Modulation of methicillin-resistant Staphylococcus aureus (MRSA) biofilm formation by PEG-PDLLA-coated titanium
Adam Turner, University of Gothenburg, Sweden

P1-390 Self-assembled Cu-PEI/PEG-PLGA Nanofibers Mimicking Neutrophil Extracellular Trap for Capturing and Killing Bacteria
Xie Zhenze, South China University of Technology, China

P1-391 Efficacy of Electrospun Chitosan Membranes with C2DA in preventing infectivity in an in-vivo composite tissue infection model
Tibirni Yusuf, University of Memphis, USA

P1-392 Phagocytic Synthetic Cells to protect us against bacterial and viral pathogens
César Rodriguez-Emmenegger, Institute for Bioengineering of Catalonia, Spain. DWI-Leibniz Institute for Interactive Materials, Germany, Spain

P1-393 Light-Activatable Antimicrobial Silk Fabric
Hidetoshi Teramoto, National Agriculture and Food Research Organization, Japan

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P1-394 A little help for antimicrobial materials and surfaces development
Antonella Bandiera, Life Sciences Dpt., University of Trieste, Trieste, Italy, Italy

P1-395 Reactive oxygen® gel – the development of an antimicrobial delivery system for the prevention and treatment of infected wounds
Thomas Hall, Matoke Holdings Limited, United Kingdom

P1-396 Antimicrobial potential of highly-charged polypeptides: insight into the structure-toxicity Relationship
MARIA PUERTAS BARTOLOME, Bioforge Lab, University of Valladolid, Spain

P1-397 Insights into the structural and tribo-corrosion aspects of Ti-Nb-Ga alloys for antibacterial implant applications
Mariana Calin, Leibniz Institute for Solid State and Materials Research Dresden (IFW Dresden), Germany

P1-398 Calcium phosphate-based hybrid biomaterials for bone regeneration and local antibacterial therapy
Joanna P. Czechowska, Faculty of Material Science and Ceramics, AGH University of Krakow, Mickiewicza Av. 30, 30-059 Krakow, Poland

P1-399 Fibrinogen conformation on nanoparticles affects S. epidermidis adhesion
Mats Hulander, Chalmers University of Technology, Sweden

P1-400 Development of an innovative antibacterial sodium alginate/bioactive glass S53P4 hydrogel: a possible solution in diabetic wound treatment
Jacobus J C Arts, Maastricht University Medical Center, Netherlands

P1-401 Antibacterial properties of a silver-containing multilayer coating for prevention of bacterial biofilm formation on orthopedic implants
Jacobus J C Arts, Maastricht University Medical Center, Netherlands

P1-402 Race for the surface between THP-1 macrophages and Staphylococcus aureus on various titanium implants with well-defined topography and wettability
Margarita Trobos, Department of Biomaterials, Institute of Clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden; Centre for Antibiotic Resistance Research in Gothenburg (CARe), Gothenburg, Sweden, Sweden

P1-403 Bacteriophage-loaded Shear thinning injectable hydrogel for treatment of bone-associated infections
Fereshteh Bayat, McMaster University, Canada

P1-404 Development and characterization of an antibacterial implant surface – Proof of concept of melimine-modified 3D printed polycaprolactone scaffolds
Silvia Cometta, Queensland University of Technology, Australia

P1-405 Fabrication of copper doped bioactive glass based injectable putty as a one step treatment strategy for bone infection.
Sreena R, Centre for Biomaterials, Cellular and Molecular Theranostics, VIT University, India

P1-406 Enhancing infected wound healing using self-locomotive, antimicrobial microrobots (SLAM)
Yujin Ahn, University of Illinois at Urbana-Champaign, USA

P1-407 Fluorescent labeled *Staphylococcus aureus* as a tool to study biofilm formation and intracellular persistence in periprosthetic joint infection
Liliana Morales-Laverde, Department of Biomaterials, Institute of Clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden; Centre for Antibiotic Resistance Research in Gothenburg (CARe), Gothenburg, Sweden, Sweden

P1-408 iPSC-associated factors to affect the differentiation of hepatocytes
Hyun A Kang, Gachon University, Korea, Republic of

P1-409 Single site bone marrow aspiration is the best choice for obtaining better MSCs
Chang-Wug Oh, Kyungpook National University Hospital, Korea, Republic of

P1-410 Poly(acrylic acid)-based tissue adhesives conjugated with N-hydroxysuccinimid
Dong Hoon Sim, Kumoh national institute of technology, Korea, Republic of

P1-411 Enhanced Dural Repair Using Biodegradable Sealants Based on Photocurable Hyaluronic Acid
Hyeseon Lee, Pusan National University, Korea, Republic of

P1-412 Wireless optoelectronic neural interfaces for simultaneous and spatially-matching optogenetics and electrophysiology
Juhyun Lee, Korea Advanced Institute of Science and Technology, Korea, Republic of

P1-413 Biocompatible Hydrogel-Based Techniques for Traction and Intracellular Stress Measurement: Unraveling Mechanotransduction in Stem Cells during Single-Cell and Collective Migration
Sung Sik Hur, Soonchunghyang Institute of Medi-Bio Science (SIMS), Soonchunhyang University, Korea, Republic of

P1-414 Artificial basement membrane and vascular cells enables an engineered, functional endothelium
Avelino Dos Santos Da Costa, Korea Institute of Science and Technology, Korea, Republic of

P1-415 Mechanistic analysis of nuclear dynamics in cell migration under confinement environments
Daesan Kim, 1KU-KIST Graduate School of Converging Science and Technology, Korea University, Korea, Republic of

P1-416 Modulation of cell migration via the selective rupture of double-stranded DNA
Seong-Beom Han, Korea University, Korea, Republic of

P1-417 Fabricating mxene-polymer dot conductive diagnostic hydrogel for monitoring cancer cells
Anneshwa Dey, Korea National University of Transportation, Korea, Republic of

P1-418 Observable alterations in mechanical properties, electrical conductivity, and adhesiveness of a MnO_2-PD incorporated hydrogel triggered by cancer cells
Sunu Hangma Subba, Korea National Univeristy of Transportation, Korea, Republic of

P1-419 Age-related alterations in cellular dynamics are determined by intranuclear dynamics
Sunah Lee, Korea university, Korea, Republic of

P1-420 Migrasomes guide persistent breast cancer cell migration during ECM remodeling in hypoxia
Doyoung Kim, Korea university, Korea, Republic of

P1-421 Nuclear wrinkling in Hutchinson-Gilford Progeria Syndrome is associated with SUN1-dependent attenuation of nuclear tension
Ji-Eun Park, Korea university, Korea, Republic of

P1-422 Production of uniform and mature kidney organoids in a 3D geometrically-engineered nanofiber membrane
Dohui Kim, POSTECH, Korea, Republic of

P1-423 Molecular binding forces mediated by integrins replicate the lamin A/C-dependent global perception of substrate compliance
Gi-Ju Cho, Korea University ,Korea, Republic of

P1-424 In vitro toxicity evaluation of cross-linking agents BDDE and PEGDE used in the production of HA dermal fillers.
Jaeyoung Jo, Across co., Ltd ,Korea, Republic of

P1-455 Assessment of humidifier disinfectant component CMIT/MIT using bioprinted *in vitro* human lung model
Hwa-Rim Lee, Pohang University of Science and Technology (POSTECH), Korea, Republic of

P1-456 Extracellular matrix hydrogel membrane supported by nanofiber scaffold for engineering in vitro barrier tissue interfaces
Jaeseung Youn, Department of Mechanical Engineering, POSTECH, Korea, Republic of

P1-427 The ALTERNATIVE platform: an innovative tool for chemical cardiotoxicity detection
Gianluca Ciardelli, Politecnico di Torino, Italy

P1-428 Gellan Gum Hydrogels: A Versatile Framework for Adipose Tissue Modeling
Petra Kluger, Reutlingen University, Germany

P1-429 A spontaneous in-situ thiol-ene crosslinking thermo-responsive hydrogel to reversibly modulate the micro-environment of embedded chondrocytes
Andreas Aerts, KU Leuven, Department of Polymer Chemistry and Materials, Laboratory of organic material synthesis Celestijnenlaan 200f - box 2404, 3001 Leuven, Belgium, Belgium

P1-430 Ex-vivo whole bone model to study traumatic injury progression using polyethylene glycol (PEG), fibrin, and collagen biomaterials
Miruna Chipara, University of Birmingham, United Kingdom

P1-431 Effect of Fibrotic Scar on Astrocyte Behavior in Spinal Cord Injury
Inha Baek, University of Arkansas, USA

P1-432 Development of a 3D-printed cell-laden hydrogel phantom for improvement of precision in eye cancer brachytherapy
Mahdokht Akbari Taemeh, 1Laboratoire de Biomatériaux pour l'Imagerie Médicale (BIM), Axe Médecine Régénératrice, Centre de Recherche du CHU de Québec - Université Laval (CR-CHUQ-UL), 2705, boul. Laurier (T1-61a), Québec, G1V 4G2, Canada. 2Département de Génie des Mines, de la Métallurgie et des Matériaux, Centre de Recherche sur les Matériaux Avancés (CERMA); Université Laval, Québec G1V 0A6, Canada, Canada

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P1-433 Optimising collagen-elastin scaffolds to direct maturation of alveolar epithelial type II cells in co-culture with pulmonary fibroblasts
Vivien Alves Passing, Department of Materials Science & Metallurgy, University of Cambridge, United Kingdom

P1-434 Innovative multi-tool biofabrication of microwell arrays with embedded microelectronics for high-throughput electrical stimulation of cardiac organoids
Sogol Kianersi, CÚRAM - Science Foundation Ireland Research Centre for Medical Devices, Biomedical Engineering, University of Galway, Ireland, Ireland

P1-435 Paper-based potentiometric sensor integrated with polymeric hydrogel for sodium ion detection in human urine
Kanyapat Teekayupak, Electrochemistry and Optical Spectroscopy Center of Excellence (EOSCE), Department of Chemistry, Faculty of Science, Chulalongkorn University, Thailand

P1-436 Comparison of Macrophage Responses to a Model of Polyethylene Nano and Micro Plastics.
Naoto Washihira, Grad. Sch. Eng., Tohoku Univ., Japan

P1-437 Activation of fibroblasts migrating through confining microchannels made with polydimethylsiloxane
Yeji Chang, Department of Biomedical Engineering, National University of Singapore, Singapore

P1-438 *In vitro* intestinal model composed of epithelial cell layer and encapsulated enterobacteria
Mioto Nishino, Yokohama National University, Japan

P1-439 Engineered in vitro models to mimic the human alveolar barrier and their role in assessing toxicity of mineral fibers
Chiara Tonda Turo, Politecnico di Torino, Italy

P1-440 Development of a 3D in vitro mineralized bone model to reproduce the osseointegration process of dental implants
Sylvain Catros, Department of Oral Surgery, University Hospital of Bordeaux, Bordeaux; Inserm BioTis, Laboratory for the Bioengineering of Tissues, University of Bordeaux, France

P1-441 Recapitulating the tissue niche through Regenix™ for the generation of patient-derived xenograft models
Da Hye Song, Cellartgen, Korea, Republic of

P1-442 Maturation of kidney organoids on meshed microwells for drug screening
HyeJin Hong, Dankook university, Korea, Republic of

P1-443 Development of an in vitro intestinal model system with tissue-resident immune cells.
Raehyun Kim, Hongik University (Sejong), Korea, Republic of

P1-444 Development of a Keloid Skin Platform Based on Collagen and Fibrinogen
Jongmin Lee, Center for Biomaterials, Biomedical Research Institute, Korea Institute of Science and Technology (KIST), Korea, Republic of

P1-445 Biomimetic 3D *In Vitro* Sarcopenia Mode
Sohae Yang, Department of New Biology, DGIST, Korea, Republic of

P1-446 Bone-On-a-Chip using photo-enhanced decellularized and demineralized bone extracellular matrix (P-ddBECM)
Min Young Kim, DGIST, Korea, Republic of

P1-447 3D Microphysiological Systems as a Tool for Characterizing NK Cell Dynamics in Tumor Environments
Hyeri Choi, Seoul National University, Korea, Republic of

P1-448 Evaluating drug response of tumor microenvironment on a microfluidic platform using next-generation sequencing and histology
Sunghun Cheong, Seoul National University, Korea, Republic of

P1-449 Calcium-scavenging hydrogels to prevent premature bone fusion in the developing skull
John Martin, University of Cincinnati, USA

P1-450 Fabrication and evaluation of a novel hemostatic device for the treatment of Stanford type A aortic dissection.
Yohei Okada, Kindai university, Japan

P1-451 Development of a novel lung sealing device utilizing microneedle mesh sheet assisted with polymer sealant.
Haruka Nakagawa, Kindai University, Japan

P1-452 Investigating relationships between staphylococcal clinical isolates and patient data in percutaneous hearing imlants
Marsel Ganeyev, Department of Biomaterials, Institute of Clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden; Research & Technology, Oticon Medical AB, Askim, Sweden; Centre for Antibiotic Resistance Research in Gothenburg (CARe), Gothenburg, Sweden ,Sweden

P1-453 Results of an osteoinductive bone graft with submicron surface topography as standalone in a prospective, multi-center, randomized, intra-patient Clinical Trial
Nathan Kucko, Kuros Biosciences, Netherlands

P1-454 Enzyme-responsive hydrogel tissue expanders for guiding facial growth in microphthalmia patients
Stephanie Fung, Children's Hospital of Philadelphia, USA

P1-455 Effects of gentamicin-loading content in chitosan/PVA-based electrospun nanofiber membranes on mechanical and biological properties
Yeong-Joon Park, Chonnam National University, Korea, Republic of

P1-456 Mechanical properties and orthodontic force improvement of aligner sheet according to elastic layer structure
JEONG HYEON LEE, DENTIS CO., Ltd., Korea, Republic of

P1-457 Analysis of gingiva principal stress and complete denture Peak von Mises stress with two different material properties of denture base
JEONG HYEON LEE, DENTIS CO., Ltd., Korea, Republic of

P1-458 Evaluation of physicochemical and biological properties of magnesium-complex bioceramic cement with potential application in dentistry
Yu Jin Ahn, Department of Conservative Dentistry, School of Dentistry, Seoul National University, Seoul, Republic of Korea, Korea, Republic of

P1-459 Invasive cleavage reaction combined with exponential rolling circle amplification using a triple-arm dumbbell template for highly sensitive dection of microRNAs
Jueun Han, Incheon National University, Korea, Republic of

P1-460 Development of a paper strip-based isothermal molecular diagnostic technique for rapid on-site detection of diseases-associated microRNAs
Yejin Song, Incheon National University, Korea, Republic of

P1-461 A dual-mode and trimetallic nanozyme induced highly sensitive osteoprotegerin detection from human serum
Minhaz Uddin Ahmed, UNIVERSITI BRUNEI DARUSSALAM, Brunei Darussalam

P1-462 Longitudinal metabolite profile in hemodialysis patients
Vida Dehghan Niestanak, University of Alberta, Canada

P1-463 Grape cosmeceuticals for beauty and skin therapy
Cristiana Radulescu, Valahia University of Targoviste, Romania

P1-464 AI-based Morphology Evaluation for Enhanced Neural Induction Analysis in Neural Stem Cell
Young-woo Jeon, KAIST, Korea, Republic of

P1-465 Dynamic Phenotyping of Endothelial Cells Using AI-Enhanced Morphological and Motility Analysis
Seokhoon Ham, Dept. of Mechanical Engineering, KAIST, Korea, Republic of

P1-466 Morphology Feature-based Phenotype Classification of Fibroblasts in Capsular Contracture for Breast Implants
Seongwoo Lee, Korea Advanced Institute of Science and Technology(KAIST), Korea, Republic of

P1-467 AI-driven single organoids analysis on cardiac contractile heterogeneity dictated by geometric inputs.
Zhen Ma, Syracuse University, USA

P1-468 Utilizing AI Image Classification for Histological Assessment of Decellularized Aorta
Naoko Nakamura, Shibaura Institute of Technology, Japan

P1-469 Interactive Rapid Coagulation Testing (iRCT): Advancing Cardiovascular Diagnostics with Paper-Based Microfluidics and AI
Lining (Arnold) Ju, The University of Sydney, Australia

P1-470 Mineral-binding peptide inhibits BMP-induced ectopic mineralization
David Kohn, University of Michigan, USA

P1-471 Development of macrophage M1/M2 characterization method using live cell fluorescence images
Kazuki Hoashi, Shibaura Institute of Technology, Japan

P1-472 3D Printing and osteogenic properties of a Composite Ink Consisting of Collagen, Hyaluronic Acid and Calcium Phosphate
Daphne van der Heide, AO Research Institute Davos, Switzerland

P1-473 Quantitative analysis of trabecular bone tissue cryosections via a fully automated neural network-based approach
Christopher Pohl, University Medical Center Greifswald, Germany

P1-474 Raman spectroscopy of calcium oxalate hydrates from plant leave
Nicole Horáková, Masaryk University, Czech Republic

P1-475 Tackling data scarcity: accelerating machine learning for materials research with active learning
Fanjin Wang, University College London, United Kingdom

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P1-476 Deep learning based prediction of stiffness and strength of bone from synthetic X-ray CT images
Dong-Wook Lee, Technology Innovation Institute, United Arab Emirates

P1-477 Biomatdb resource: Use of natural language processing based on transformers and language models for biomaterials data extraction
Martin Krallinger, Barcelona Supercomputing Center (BSC), Spain

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P2-001 Design for punicalagin-loaded hydrogels with mechanical stability and polyphenol derived therapeutic properties
Jaewon Ju, Sungkyunkwan university, Korea, Republic of

P2-002 Tyramine-conjugated Hyaluronic Acid and PEDOT:PSS Injectable Conducting Hydrogel for Tissue-conformable, MRI-compatible Brain-interfacing Array Device
Sung Dong Kim, Department of Biomedical Engineering, Sungkyunkwan University (SKKU), Korea, Republic of

P2-003 Extracellular vesicle enrichment through polyphenol-based surface coatings for bioassay
Nayoung Son, DGIST, Korea, Republic of

P2-004 A Wearable Organohydrogel Fiber Sensor Based on PVA/Borax/Nanosilicate with Real-time Detection of Gait and Movement for Health Monitor
Tae In Kim, Chungnam National University, Korea, Republic of

P2-005 Target-specific cell membranes for surface coating of bio-interfacing devices
MD Lemon Hasan, Korea Institute of Science and Technology, Korea, Republic of

P2-006 Scalable high-resolution printing of mechanically-tunable, highly-conductive gallium-polymer ink for transformative electronics
Simok Lee, Korea advanced institute of science and technology, Korea, Republic of

P2-007 Human body polarization mediated electric potential transfer for treatment of alopecia
Jungbum Kim, Department of Chemistry, College of Science, Sungkyunkwan University, Korea, Republic of

P2-008 Development of porous injectable hydrogels engineered via liquid-liquid phase separation for stem cell transplantation therapy
Akihiro Nishiguchi, National Institute for Materials Science, Japan

P2-009 Biomechanical basis of intramyocardial hydrogel injection treatment for ischemic cardiomyopathy
Yang Zhu, Zhejiang University, China

P2-010 Hyaluronic acid-based augmentation of chondrocyte microenvironment curbs cartilage catabolism
Jay Patel, Emory University, USA

P2-011 Achieving real-time mechanical-electrical integration in myocardial infarction repair through conductive fibers and sutureless patches
Jifu Mao, Donghua University, China

P2-012 Regulation of Cell Adhesion on Physically Crosslinked Hydrogels Composed of Amino Acid-Based Polymers by Changing Elasticity using Shape Fix/Memory Properties
Shin-nosuke Nishimura, Doshisha Univ., Japan

P2-013 Mxene-based Biointerface Machine Learning Integrated Workflow for Applications in Predicting Schwann Cell Viability
Yi-Chen Li, Department of Chemical Engineering, Feng Chia University, Chinese Taipei

P2-014 Iron ion-catechol chelated semi-interpenetrating network hydrogels with excellent photothermal antibacterial and ROS scavenging activity for accelerated MRSA-infected wound healing
Panpan Pan, Marine College, Shandong University, Weihai 264209, China, China

P2-015 Exercise-induced piezoelectric stimulation for cartilage regeneration
Yang Liu, Peking University School of Stomatology, China

P2-016 Electroactivity regulated by aniline trimer-based polyurethanes for osteogenesis
Yi Zuo, Research Center for Nano-Biomaterials, Analytical and Testing Center, Sichuan University, China

P2-017 Using hydrogels with tunable viscoelastic properties and adhesion mobility to study cell-material interactions
Tommy Pashuck, Lehigh University, USA

P2-018 Bioactive microgel coated electrospun membrane with cell-instructive interface and topology for abdominal wall defect repair
Zujian Feng, Chinese academy of medical science, China

P2-019 Antibacterial mineralized hydrogels for bone regeneration
Kristine Salma-Ancane, Baltic Biomaterials Centre of Excellence, Headquarters at Riga Technical University, Latvia

P2-020 Anisotropic conductive matrices promote cardiac maturation and post-infarction functions by restoring electrical integrity
Xiaohui Zhang, Xi'an Jiaotong University, China

P2-021 Engineering synthetic poly(ethylene) glycol-based hydrogels compatible with injection molding biofabrication
Jessica Weaver, Arizona State University, USA

P2-022 Back on track: rebuilding the microenvironment of the native intervertebral disc using a thrombospondin 1-enriched interpenetrating network hydrogel
Mário Barbosa, i3S - Institute for Research and Innovation in Health and ICBAS - School of Medicine and Biomedical Sciences, University of Porto,Portugal

P2-023 "Self-sacrificing" composite cardiovascular implant coatings with anti-inflammatory, pro-endothelial functions for repairing vascular injury
Pai Peng, Zhejiang University, China

P2-024 Development of a biomimetic high throughput essay to study neuroblastoma cell proliferation and differentiation
Nathan Thibieroz, INSERM, France

P2-025 Bioinspired cytoprotective strategy for ambient-temperature cell logistics
Lydia Chong, Nanyang Technological University, Singapore

P2-026 Improving coating adhesion through electrochemical roughening of Pt electrodes and coating stability evaluation
Wenlu Duan, The Graduate School of Biomedical Engineering, University of New South Wales, Australia

P2-027 Doubly crosslinked microgel-based electrodes with precisely programmable electrically-controlled drug delivery applied for a wearable soft electronic wound dressing
Zhe-Wei Lin, National Yang Ming Chiao Tung University, Chinese Taipei

P2-028 Potential clinical value and influence of conductivity of conductive cardiac patches in reducing post-MI arrythmia risks
Yuchen Miao, Zhejiang University, China

P2-029 Development of an exceptionally sensitive SBS-CN polymer nanosheet pressure sensor that applies to human skin
Yun Ju La, Waseda University, Japan

P2-030 Design and construction of injectable functional hyaluronic acid-based gels for endoscopic submucosal dissection
Ruonan Wu, Beijing University of Chemical Technology, China

P2-031 Development of a conductive nanocomposite based on oxidized polyvinyl alcohol + functionalized water soluble carbon nanotubes for peripheral nerve regeneration
Ludovica Ceroni, Department of Chemical Sciences and INSTM UdR Padova, University of Padova, Padova, Italy, Italy

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P2-032 Coaxial extrusion and rheological characterization of kappa carrageenan (κCG) bioink gels for tissue engineering applications
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Sanchari Swarupa, Biological Sciences and Engineering, Indian Institute of Technology, Gandhinagar, India

P2-033 Strongly adhesive and anti-corrosive ion-assisted plasma polymerized films for biomimetic functionalization of cardiovascular stents from stainless steel materials
Leila Mamizadeh Janghour, School of Biomedical Engineering, Faculty of Engineering, The University of Sydney, Darlington, Sydney, NSW 2008, Australia

P2-034 sPIF-Loaded Hyaluronic Acid Hydrogels Reduce Inflammatory Action and Provide Neuroprotection in Multiple Sclerosis Models
Mansoor Al-waeel, CÚRAM, SFI Research Centre for Medical Devices, University of Galway, Ireland, Ireland

P2-035 Development of Graphene-containing, 3D-printed Scaffolds for Orthopaedic Applications
Rebecca Steele, University of Manchester, United Kingdom

P2-036 Rational Design of Multifunctional Hydrogels from Fundamentals to Applications
Jie Zheng, University of Akron, USA

P2-037 Endothelium-Mimicking Nitric Oxide Producing Cardiovascular Stent Coating for Prevention of Thrombosis and Restenosis
Jingdong RAO, ABCT, China

P2-038 Advanced Electrically Conductive Bioinks for Pathogen Detection
Róisín Byrne, School of Chemical Sciences, Dublin City University, Ireland

P2-039 Unleashing the Potential of Laser-Induced Graphene for Cell Stimulation in Tissue Engineering
Henrique Vazão de Almeida, CENIMAT|i3N, Portugal

P2-040 Alginate hydrogels: a tunable tool for biotech applications
Caroline Cooreman, IFF, Switzerland

P2-041 Design of injectable conductive hydrogel with controlled nitric oxide generation for effective cardiovascular disease treatment
Dieu Linh Tran, Institute of Chemical Technology - Vietnam Academy of Science and Technology, Vietnam

P2-042 A new class of non-toxic photoinitiators for acrylate hydrogels
Terry Steele, Nanyang Technological University, Singapore

P2-043 The biomimetic approach for size-controlled hydroxyapatite particle nucleation in natural rubber latex membranes
Rodrigo Marques, Chemistry Institute, UNESP, Brazil

P2-044 Conductive biomaterials for voltage-driven controlled release of doxorubicin for local tumour treatment
Aaron Lee, Imperial College London, United Kingdom

P2-045 An adhesive, antioxidative, ultra-conformable electrode patch for Long-Term Physiological Signal Monitoring
Chun-Chang Lin, National Yang Ming Chiao Tung University, Chinese Taipei

P2-046 Protein-incorporated filtration membrane for urea removal in portable peritoneal dialysis applications
Mei Qun Seah, Chalmers University of Technology, Sweden

P2-047 Oral microsphere formulation of M2 macrophage-mimetic Janus nanomotor for targeted therapy of ulcerative colitis
Ruifeng Luo, University of Macau, Macao SAR, China

P2-048 Development of β-Si_3N_4-SiO_2 glass-ceramics for biomedical applications
Huasi Zhou, Uppsala University, Sweden

P2-049 Optimization of probiotics encapsulation in chitosan-coated alginate/gellan gum microcapsules to improve its viability and stability
Korlid Thinkohkaew, Department of Materials Science, Faculty of Science, Chulalongkorn University, Thailand

P2-050 Production of an *in vitro* glioblastoma TME model with HAMA/dECM hydrogel
Şeyma Işık, Acibadem Mehmet Ali Aydinlar University, Türkiye

P2-051 Physico-chemical changes following ultraviolet functionalization: an alternative surface modification for enhancement zirconia surface properties
Masfueh Razali, Universiti Kebangsaan Malaysia, Malaysia

P2-052 Unlocking the potential of acrylated palm olein as hydrogel in fabrication of hydroxyapatite-based biomaterials inks for three-dimensional bioprinting bone scaffold
Masfueh Razali, Faculty of Dentistry, Universiti Kebangsaan Malaysia, Malaysia

P2-053 PEG-norbornene as a photo-click bioink for digital light processing 3D bioprinting
Min Hee Kim, Kyungpook National University, Korea, Republic of

P2-054 A Clinically Applicable rhBMP2 Conjugated 3D Polymeric Bone Substitute
YuRi Hong, Kyungpook National University, Korea, Republic of

P2-055 Fabrication of GelMA microneedles with various shapes for long term monitoring of plant physiology
Geonho Lee, Pohang University of Science and Technology, Korea, Republic of

P2-056 Thermo-sensitive hydrogel with ROS scavenging property for 3D printing bio ink
jisun kim, korea institute of science and technology, Korea, Republic of

P2-057 3D-Printed composite scaffolds coated with thylakoid for the treatment of osteonecrosis
Sujin Woo, Department of Advanced Materials and Chemical Engineering, Daegu Catholic University, Korea, Republic of

P2-058 Fabrication of large hydrogel scaffolds with digital light process-based 3D printing system and assembly of modular constructs
YOUNG JIN JEON, Department of Nano-Bioengineering, Incheon National University, Incheon, 22012, Republic of Korea, Korea, Republic of

P2-059 Assessment of Anti-Inflammatory Effects of Garlic Extracts in 3D Bioprinted Skin Mimetics
Hee jeong Jang, Pusan National University, Korea, Republic of

P2-060 Preparation of drug depot by 3D printing of drug loaded bioink
Yun Geun Jeong, Ajou university, Korea, Republic of

P2-061 Effect of Various Biocompatible Photo-initiators on Formulating Tissue-specific Collagen-bioinks with PICUP Approach
Seo-Yeon Kim, Chonnam National University, Korea, Republic of

P2-062 Bioengineered model for aging skeletal muscle reveals detrimental impact of senescent cells on regeneration through non-autonomous effects
Tae-Hwan GIL, Department of Biomedical Sciences, College of Medicine, Korea University, Seoul, Korea, Republic of

P2-063 Development of 3D Bioprinted Perfusable Hypoxic-cardiac Tissue In vitro Model to Study Ischemia Induced Myocardial Damage
Mst Zobaida Akter, Chonnam National University, Korea, Republic of

P2-064 Impact of different 3D printed scaffold pore architecture on lettuce (*Lactuca sativa L.*) growth
Ashikur Rahman Swapon, Chonnam National University, Korea, Republic of

P2-065 Coaxial Bioprinting of Coronary Artery-Sized Vascular Tubes with Stent Compatibility, Cultured via Pumpless Perfusion
Ashfaq Ahmad, Department of Convergence Biosystems Engineering, College of Agriculture and Life Sciences (CALS), Chonnam National University, 77 Yongbongro, Gwangju, Republic of Korea, 61186, Korea, Republic of

P2-067 The Evaluation of the Biocompatibility and Mechanical Properties of DLP 3D-printing MgP/Ca
PENG ZHANG, Department of Prosthodontics, School of Dentistry, Chonnam National University, Korea, Republic of

P2-068 The Evaluation of the Biocompatibility and Mechanical Properties of DLP 3D-printing MgP/Ca
PENG ZHANG, Chonnam national university, Korea, Republic of

P2-069 3D Printing of highly swellable and tough hydrogels with continuous fiber network structure
Sungchul Shin, Seoul National University, Korea, Republic of

P2-070 Sniffer worm, *C. elegans*, as a toxicity evaluation model organism with sensing and locomotion abilities
Jun Sung Kim, Department of Chemistry KAIST, Korea, Republic of

P2-071 Fabrication of uniaxially aligned bioconstructs using modified freeze-casting methods
JaeYoon Lee, Sungkyunkwan University School of Medicine, Korea, Republic of

P2-072 3D printed radiopaque tissue engineering scaffolds
Serena Best, University of Cambridge, Department of Materials Science and Metallurgy, United Kingdom

P2-073 Precision 3D printed meniscus scaffolds to facilitate hMSCs proliferation and chondrogenic differentiation for tissue regeneration
Wei Zhang, Medtronic, China

P2-074 Development of a handheld skin bioprinter for application in space and its testing at the International Space Station
Michael Gelinsky, Technical University of Dresden Medical School, Germany

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P2-075 AI-driven Assessment of 3D/4D Printable Hydrogels for Biomedical Devices
Yugyung Lee, University of Missouri Kansas City, USA

P2-076 3D printing of biomimetic hierarchical porous architecture scaffold for customized bone defect repair
Changchun Zhou, Sichuan University, China

P2-077 3D bioprinted urethra-like tubular structure for the treatment of hypospadias defects
Dorota Bociaga, Lodz University of Technology, Division of Biomedical Engineering and Functional Materials, Poland

P2-078 An Intrinsically Magnetic Epicardial Patch for Rapid Vascular Reconstruction and Drug Delivery
Wei Sun, State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University, China

P2-079 Alloy design and fabrication of bio-high entropy alloys (BioHEAs) developed by laser powder bed fusion
Ryosuke Ozasa, Osaka university, Japan

P2-080 Enzyme-Bioink for the 3D Printing of Functional Materials
Peter Wich, University of New South Wales, School of Chemical Engineering, Sydney (Australia), Australia

P2-081 Development of designing method for biocompatible mechanical metamaterial using fracture mechanics approach
Yuichi Otsuka, Nagaoka university of technology, Japan

P2-082 Artificial control of cell-based 3D bone-mimetic ordered collagen/apatite structures using additive manufacturing
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Aira Matsugaki, Osaka University, Japan

P2-083 Development of 3D artificial bone using osteoblasts internalizing nano-ferrite particles
Hidehiko Nobuoka, Biomedical Engineering Division, Graduate School of Science and Technology, Shinshu University, Japan

P2-084 Enhancing Bone Regeneration: 3D Printed Gelatin/OCMC Scaffolds with Gradient Porosity and Mechanical Properties
Laura Adilova, Nazarbayev University, Kazakhstan

P2-085 Optimising SLAM fluid gel formulation
Saskia Fogg, University of Birmingham, United Kingdom

P2-086 Preparation of bio-printing scaffold using 2- (methacryloyloxy) ethyl choline phosphate
YuanChih Tsai, Tokushima University, Chinese Taipei

P2-087 Mucoadhesive microneedle patches for the treatment of aphthous stomatitis
Chi-Hsiang Wu, Department of Biomedical Engineering, I-Shou University, Chinese Taipei

P2-088 3D Printed Intervertebral Cage Loaded with Simvastatin: Enhancing Bone Cell Growth and Stability in Spinal Fusion
Wei Huang, Department of Biomedical Engineering, National Cheng Kung University, Chinese Taipei

P2-089 Iron oxide nanoparticles/gelatin methacryloyl hybrid bioinks for soft bioactuactor applications
Tzu-Ching Chen, Feng Chia University, Chinese Taipei

P2-090 Dual Moduli-responsive Tissue Engineering Scaffolds Made by 4D Printing
Xiaodie Chen, Department of Mechanical Engineering, The University of Hong Kong, Hong Kong SAR, China

P2-091 Effect of the filler proportion and its optical properties on the dimensional stability and mechanical properties of 3d printed resin
Pei-Yu Hou, Institute of Oral Science, Chung Shan Medical University, Chinese Taipei

P2-092 Collagen for neural tissue engineering: materials, strategies, and challenges
Wenhui Huang, Institute of Zoology, Chinese Academy of Sciences, China

P2-093 Tailoring aqueous two-phase system inks for enhanced cellular functionality and alignment in 3D bioprinted tissues
Martina Marcotulli, IIT - Italian Institute of Technology, Italy

P2-094 Elucidating 3D Bioprinted Gelatine-Human Skin Dermal Fibroblasts Stability for Wound Dressing Applications via AKT Signalling Pathways
NUR AIFA ASYHIRA KHAIRUL NIZAM, Centre for Tissue Engineering and Regenerative Medicine, Faculty of Medicine, National University of Malaysia, Malaysia

P2-095 Process for Fabricating 3D Printed Scaffolds Based on Sodium Alginate and Graphene Oxide for Personalized Tissue Engineering.
Alin Toader, Faculty of Medical Engineering, National University of Science and Technology Politehnica Bucharest, Gh Polizu 1-7, 011061 Bucharest, Romania, Romania

P2-096 3D printing of porous beta-titanium alloys TiNbTaSn
Zdenek Tolde, Czech Technical University in Prague, Faculty of Mechanical Engineering, Czech Republic

P2-097 Application of 3D printing bone scaffolds grafted with BMP-2 on bone tissue regeneration
CHUN HSU YAO, Department of Biomedical Imaging and Radiological Science, China Medical University, Chinese Taipei

P2-098 Extrusion-based 3D bioprinting from bench to bedside applications in bone tissue engineering using platelet-rich plasma and scaffolding materials
Dongxu Ke, Novaprint Theurapedics, China

P2-099 Bioprinting of patient-derived in vitro tumor organoid model: establishment, evaluation and anti-cancer drug testing
Shuangshuang Mao, Tsinghua University ,China

P2-100 Development of a new gelatin methacrylate-fibrinogen-based bioink for skeletal muscle tissue engineering
Diego Trucco, The BioRobotics Institute, Scuola Superiore Sant'Anna, Piazza Martiri della Libertà 33, Pisa 56127, Italy, Italy

P2-101 Synthesis of High Encapsulation Efficiency and Homogeneity Solid Lipid Nanoparticles containing Curcumin based on Microfluidics
Jun-Won Kook, Ajou Energy Science Research Center, Ajou University, Korea, Republic of

P2-102 Development of Composite Microneedle Patch and Bio-patch
Dae Ryeong Lee, Any Medi & Healthcare Co., Ltd, Korea, Republic of

P2-103 Carbon-based nanoparticles for anti-cancer drug delivery
Hongjae Kim,The Catholic University of Korea, Korea, Republic of

P2-104 Hyaluronated Lipid Nano Particles for mRNA Vaccines
Mungu Kim, POSTECH, Korea, Republic of

P2-105 Development of microfluidic chip-based lipid nanoparticles with improved membrane stability through structural proteins to improve bioavailability of hydrophobic drug
Yoseph Seo, Kwangwoon Univ. (South Korea), Korea, Republic of

P2-106 Thermo-sensitive and Charged Polypeptide for Controlled Release of Lixisenatide
Park Jinkyung, Ewha womans univ., Korea, Republic of

P2-107 Preparation of Polymeric Nanoparticles containing Aconite Root for the treatment of Chemotherapy Induced Peripheral Neuropathy (CIPN)
Tae Eon Park, Pusan national university, Korea, Republic of

P2-108 Nano-micelle generating dissolving microneedles containing doxorubicin for inhibiting metastatic melanoma
Siyan Lyu, Sungkyunkwan University,School of pharmacy, China

P2-109 Development of spontaneously binding recombinant fusion protein systems for dual-drug delivery
Chanho Park, Department of Smart Health Science and Technology convergence, College of ACE, Kangwon National University, Chuncheon, 24341, Republic of Korea, Korea, Republic of

P2-110 Dual drug delivery of polyphenol carbon dot and pilocarpine using porous contact lenses for glaucoma treatment
SeoHyun Kim, Daegu Catholic University, Korea, Republic of

P2-111 Protein Nanoparticles with Tumor Environment-Inducible Underwater Adhesiveness for Pancreatic Cancer Therapy
Hyeokjun Lee, POSTECH, Korea, Republic of

P2-112 Adipose Tissue Targeting Peptide-Glycyrrhizin Conjugate for Inflammation Suppression and Obesity Treatment
Lia Priscilla, Hanyang University, Korea, Republic of

P2-113 Polyethylenimine-modified cationic hydroxyethyl cellulose derivatives for anticancer drug/siRNA co-delivery systems
Seoyeon Park, Seoul National University, Korea, Republic of

P2-114 Exosome Membrane-Integrated Microbubbles: Augmenting Stability and Drug Delivery Efficacy for Ultrasound Contrast Agents
Jooho MOON, Department of Chemical and Biomolecular Engineering, Sogang University, Korea, Republic of

P2-115 Phospholipid nanotubes conjugated lipid nanoparticles for efficient gene delivery
Minho Lee, Department of Chemical and Biomolecular Engineering, Sogang University, Korea, Republic of

P2-116 Iontophoretic ocular delivery of latanoprost loaded PLGA nanoparticles via skin-attached electrodes
Chang Hee Min, Seoul National University, Korea, Republic of

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Yeonwoo Jang, School of Integrative Engineering, Chung-Ang University, Korea, Republic of

P2-118 Quantitative Analysis into Nanocarrier-Drug Interactions for Advanced Glaucoma Therapeutics
Hyeonah Lee, Seoul national university of science and technology, Korea, Republic of

P2-119 Hyaluronic acid-coated agmatine-based nanocomplex for nucleus-targeted anticancer therapy
Hyun Ji Cho, The catholic university of Korea, Korea, Republic of

P2-120 Delivery of Zwitterion conjuated with Nitric oxide and Dexamethasone acting on Mucus Layer for Enhanced Treatment of ARDS
Hye-Jin Lee, Department of Chemistry, Sungkyunkwan University, Korea, Republic of

P2-121 A preparing method of biodegradable polyester nanoparticles for loading a broad range of chemical drugs
Naehak Park, The Catholic University of Korea, Korea, Republic of

P2-122 Anti-cancer polymeric nanomedicines for inhibiting choline metabolism
Naehak Park, The Catholic University of Korea, Korea, Republic of

P2-123 AI-based Self-Driving Microfluidic Platform for Fast Optimization in the Manufacturing of Drug-loaded Nanoparticles
Amirreza Mottafegh, Pohang University of Science and Technology, Korea, Republic of

P2-124 Effect of ophthalmic hydrogel and carbomer on the cell viability of mesenchymal stem cells through an intravitreal injection
Hyunhee Helen SEO, Seoul National University, Korea, Republic of

P2-125 Amplifying glioblastoma immunotherapy: T Cell shielding through NO/ROS scavenging nanoparticles potentiates anti-PD-1
Jihye Lee, Pohang University of Science and Technology (POSTECH), Korea, Republic of

P2-126 Switchable antibody production and delivering nanoparticles for anti-cancer immunotherapy
Mihyeon Park, POSTECH, Korea, Republic of

P2-127 Nitric Oxide-scavenging Lubricant Nanoparticles for Advanced Osteoarthritis Therapy
Yunyoung Nah, POSTECH, Korea, Republic of

P2-128 Evaluation of in-vitro antibiotic release from bioactive glass-based drug delivery device
SeungHyo Go, CGBio, Korea, Republic of

P2-129 Comparison and Evaluation of Commercial Transfection Agents as an mRNA Vaccine Delivery Carrier
Jungho Kim, Department of Biomedical Science and Engineering, Konkuk University, Korea, Republic of

P2-130 Intravitreal injectable hydrogel rods with highly sustained protein drug delivery to the retina
Dong Hwan OH, Department of Molecular Science and Technology, Ajou University, Suwon, Korea, Republic of

P2-131 Modified SIRPα-Drug Conjugates for CD47-Targeted Cancer Therapy
Seungmi Hue, Korea Institute of Science and Technology, Korea, Republic of

P2-132 Cation-free zwitterionic polymers as mRNA delivery career
Akihisa Otaka, National Cerebral and Cardiovascular Center Research Institute; Okayama-university, Japan

P2-133 Pre-clinical evaluation of miR-145 micelles for atherosclerosis therapy
Eunji Chung, University of Southern California, USA

P2-134 Hepatic delivery of anti-fibrosis drug using hyaluronic acid-coated polymeric micelles
Yuichi Ohya, Kansai University, Japan

P2-135 Consideration of the endothelial glycocalyx in the design of drug delivery systems
Megan Lord, University of New South Wales, Australia

P2-136 Osmosis-driven delayed pulse release from bioresorbable capsules for vaccine booster delivery
Ferry Melchels, University of South Australia, Australia

P2-137 Applicarions of anionic-terminal Phe-modifed dendrimers to delivery into lymph node-resident T cells
Chie Kojima, Osaka Metropolitan University, Japan

P2-138 Glucose-Responsive Biomaterials Design for Improved Diabetes Management
Matthew Webber, University of Notre Dame, USA

P2-139 Subcutaneous temperature-triggered drug delivery for islet transplantation
Larry Unsworth, Department of Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada, Canada

P2-140 Development of hotmelt extruded poly(ε-caprolactone) (pcl) matrices for an oral ultra-long-lasting delivery of galantamine for alzheimer's disease therapy
EDVANI MUNIZ, Chemistry Dept - State University of Maringa, Brazil

P2-141 Nanoparticle Distributed Intravenous Enzyme Replacement Therapy (NanoDIVERT) across the Blood-Brain Barrier
Jessica Larsen, Clemson University, USA

P2-142 Chitosan-Caffeic acid bactericidal coating for PDMS surfaces: A sustained Moxifloxacin release and prolonged coating adhesion
Pascale Chevallier, Laboratory for Biomaterials and Bioengineering (LBB-UL), Canada Research Chair Tier I, Department of Min-Met-Materials Engineering and CHU de Quebec Research Center, Division Regenerative Medicine, Laval University, Quebec, Canada, Canada

P2-143 Imiquimod microneedles for treating warts: a proof of concept study
Min-Hua Chen, Chung Yuan Christian University, Chinese Taipei

P2-144 Hydrophobic and hydrophilic modifications of zein: effect on nanoparticle formation and its applications towards intracellular drug delivery
Rekha Ramesan, Sree Chitra Tirunal Institute for Medical Sciences & Technology, India

P2-145 Iron Oxide Nanorods Delivered miRNA34a for Immunotherapy in Cancer Cells
Li-Fang Wang, Kaohsiung Medical University, Chinese Taipei

P2-146 Protein Absorption Affects Bioactivity of Fructose-based Nanoparticles
Mingxia Lu, Shanghai Institute of Ceramics, Chinese Academy of Sceinces, China

P2-147 Photocatalytic microneedle reactor for transdermal delivery of carbon monoxide to enhance cisplatin chemotherapy
Youxiang Wang, Zhejiang University, China

P2-148 Engineered hierarchical microdevices enable pre-programmed controlled release for postsurgical and unresectable cancer treatment
Hongli Mao, Nanjing Tech University, China

P2-149 Investigating extracellular vesicle profiles using in Vitro tendon models with varying matrix microarchitecture
Brittany Taylor, J. Crayton Pruitt Family Department of Biomedical Engineering, University of Florida, USA

P2-150 Ultrasmall gold nanoparticles (2 nm) carrying small-interfering RNA (siRNA) for gene silencing
Natalie Wolff, Inorganic Chemistry and Centre for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, 45117 Essen, Germany

P2-151 Development of drug-loaded torus-shaped alginate microparticles for its sustained release
Kazuki Matsumiya, The University of Tokyo, Japan

P2-152 Design of a photocleavable amphiphilic conjugate for light-driven engineered platelets
Tsuyoshi Doko, Faculty of Chemistry, Materials and Bioengineering, Kansai University, Japan

P2-153 Intratumoral pH-activated nanocytokines induce tumor-specific immune activation to enhance anticancer immunotherapy
Pengwen Chen, The University of Tokyo, Japan

P2-154 Polyoxazolines conjugated with galectin-3 inhibitors - a novel drug delivery system for the treatment of pulmonary hypertension
Antonín Sedlář, Institute of Physiology CAS, Czech Republic

P2-155 Breaking-down tumoral physical barrier by "on-site" unwrapping metal-polyphenol-packaged hyaluronidase for optimizing photothermal/photodynamic therapy-induced immune response
Quanwei Sun, Anhui University of Chinese Medicine, China

P2-156 Polyplex Nanomicelles and Lipid Nanoparticles: Comprehensive analyses for mRNA Delivery
Xuan Du, Tokyo Medical and Dental University, Japan

P2-157 Synthetic molecular motor activates drug delivery from polymersomes
Ainoa Guinart Planellas, University of Groningen, Netherlands

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P2-158 Immune cell death on catheter surfaces leads to greater biofilm formation on the surface upon infection
Sameer Kumar Jagirdar, Department of Bioengineering, Indian Institute of Science, Bangalore, India

P2-159 Preparation of biodegradable polyion complex sheets for trans pericardial drug delivery
Yamato Fujita, Kansai University, Japan

P2-160 Phosphorous dendrimers co-deliver protein and drug to tackle osteoarthritis via mitochondrial function restoration and synergistic oxygen generation-mediated macrophage reprogrammin
Huxiao Sun, State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, Shanghai Engineering Research Center of Nano-Biomaterials and Regenerative Medicine, College of Biological Science and Medical Engineering, Donghua University, Shanghai 201620, China, China

P2-161 Delivery of CRISPR/Cas9 plasmid DNA using lysine-based cationic lipid nanoparticle
Wenhan Sung, Waseda University, Japan

P2-162 Assessing the ability of dual loaded core-shell microgels to reduce markers of cardiac fibrosis on linear and non-linear elastic cardiac-mimetics
Aryssa Simpson, North Carolina State University/ University of North Carolina - Chapel Hill, USA

P2-163 Effective management of oral cancer pain through GPCR-targeted nanomedicine
Divya Bhansali, Columbia University, USA

P2-164 Liposomes decorated with antifungal peptide penetratin exhibit enhanced antifungal activity against *Candida* spp.
Veronica LaMastro, Brown University, USA

P2-165 Lignin-based nanoparticles with phthalocyanine functionality for photothermal treatment of bacterial biofilm
Giulia Crivello, Politecnico di Torino, Italy

P2-166 Preparation of disulfide bond-crosslinked microparticles derived from a trehalose derivative having two mercapto groups and enzymatically synthesized oligocysteine
Tomohito Tatekawa, Chiba Institute of Technology, Japan

P2-167 Optimizing ionizable lipid tails for liver and non-liver delivery of mRNA lipid nanoparticles
Kaitlin Mrksich, Department of Bioengineering, School of Engineering and Applied Science, University of Pennsylvania, USA

P2-168 Sustained release crystalline anti-tuberculosis drug formulations for patient compliant tuberculosis treatment.
Nisha Barge, Indian Institute of Science, Bangalore, India

P2-169 Growth factor delivery through in-situ crosslinking hydrogel for the treatment of osteoarthritis
Bhagyashree Padhan, Indian Institute of Science Bangalore, India

P2-170 Evaluation of the uptake behavior of anti-inflammatory agents conjugated poly(L-lysine) into platelets.
Rina Yokoi, Faculty of Chemistry, Materials and Bioengineering, Kansai University, Japan

P2-171 Feasibility of cationized gelatin nanospheres in mitochondria transplantation for enhancement of cell functions
WENXUAN YANG, Kyoto University, Japan

P2-172 Development of Bryostatin-1 incorporated liposome-based nasal drug delivery system for hay fever treatment
Jiayue Li, Kyoto University, Japan

P2-173 Combination of platinum-doped $CaCO_3$ and Amylopectin -based gel to synergize with radiotherapy for High-grade Glioma
Jason Lin, Department of Biomedical Engineering, National Taiwan University, Chinese Taipei

P2-174 Chemically triggered conformational change of polymeric nano-assemblies for in situ generation of multivalent ligands of cancer cells
Rentaro Sakamoto, Osaka University, Japan

P2-175 Enhancing the efficacy of anti-scar drug through advanced solid lipid nanoparticle formulation, optimization, and targeted delivery strategies
Farinaz Jonidi Shariatzadeh, Ph.D Candidate, Biomedical Engineering, University of Manitoba, Canada

P2-176 The Enzyme-Responsive Delivery System for Reprogramming Reactive Glia into Neural Progenitors and Neurons
Zahra Eivazi Zadeh, The University of Melbourne, Australia

P2-177 Chitosan-based nanocapsules with hyaluronan synthase for increasing endogenous hyaluronic acid production
Yong-Ji Chen, Department of Biomedical Engineering, I-Shou University, Chinese Taipei

P2-178 Macrophage-Targeted Delivery of Immunomodulatory Drugs to Promote Tissue Repair
Shreya Soni, Drexel University, USA

P2-179 The mechanistic study on platelet pyroptosis delivery system with miR-223 in diabetic vascular complication
Yiqiu Cao, Tongji University School of Medicine, China

P2-180 Microbur: a biomimetic platform for oral delivery of therapeutic
Suwan Ding, Columbia University, USA

P2-181 Evaluating the Impact of Copper Metal Framework Nanoparticles in Macrophage Polarization to Regulate Inflammation after Myocardial Infarction
Maria Lobita, UMCG - University Medical Center Groningen, Netherlands

P2-182 The development of an injectable drug delivery system to achieve controlled exposure of neurons to neurotrophic growth factors
Svenja Meissner, The University of Auckland - School of Pharmacy, New Zealand

P2-183 Targeting drug delivery and efficient lysosomal escape for chemo-photodynamic cancer therapy by a peptide/DNA nanocomplex
Qiusheng Wang, Sichuan University, China

P2-184 Copper(II) bis(diethyldithiocarbamate) loaded nanomedicine induces cuproptosis against cisplatin-resistant
Yao Lu, National Engineering Research Center for Biomaterials, College of Biomedical Engineering, Sichuan University, China

P2-185 Glutamic-Pluronic F127 functionalized zinc oxide nanoparticles for the delivery of anticancer dugs
Ngoc Son Nguyen, Institute of Chemistry and Materials, Vietnam

P2-186 Remodeling of imbalanced extracellular matrix homeostasis for reversal of pancreatic fibrosis
Han Han, China pharmaceutical university, China

P2-187 Pathological barriers normalization strategy for liver fibrosis therapy
Ling-Feng Zhang, China Pharmaceutical University, China

P2-188 Decellularized liver matrix-based nanomedicine for liver regeneration
Yong Heng Lin, National Taiwan University, Chinese Taipei

P2-189 2D and 3D *in vitro* study of novel Pt(IV)-carbohydrate derivatives as targeted anticancer agents against osteosarcoma
Arianna Rossi, Institute of Science, Technology and Sustainability for Ceramics, National Research Council, ISSMC- CNR and Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Studies of Messina, Italy

P2-190 Macrophages-based drug delivery for liver disease and use of fluorescent microparticles for cell tracking
Anastasiia Sapach, Skolkovo Institute of Science and Technology, Moscow 143005, Russia

P2-191 Targeting liposomal resveratrol to neuronal cells in an in-vitro model of blood-brain-barrier-like Caco-2 cellular monolayer
MEI WEN TSENG, Chung Yuan Christian University, Chinese Taipei

P2-192 The impact of nanoparticle shape on parenchymal penetration following intrathecal administration
Kha Uyen Dam, University of Massachusetts Chan Medical School, USA

P2-193 An injectable hyaluronan-based hydrogel for the controlled release of antibodies
Daniela Isaacs-Bernal, Department of Chemical Engineering and Applied Chemistry, University of Toronto, Canada

P2-194 Effect of anti-aging prodrugs that increase intracellular ATP on C. elegans lifespan
Michiharu Kawahara, University of Kyushu, Japan

P2-195 Subcutaneously Injectable, Biodegradable *In Situ* Gelling System for Sustained Release of Insulin to Lower Glucose Level in Diabetic Rats
Hannah Lowe, University of Maryland, USA

P2-196 Development of synthetic ligands targeting bacteria surface
Keita Masuda, Department of Bioengineering, The University of Tokyo, Japan

P2-197 Localized delivery of therapeutic proteins to the central nervous system using thermo-responsive hydrogels
Timothy Hughes, CSIRO Manufacturing, Australia

P2-198 PEG-based hydrogel with hyaluronic acid-dexamethasone improves motor and cognitive function in a rat moderate controlled cortical impact TBI model
Ken Webb, MicroEnvironmental Engineering Laboratory; Clemson University; Clemson, SC, USA

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P2-199 Antibiotic-eluting hemostatic agents for the prevention of surgical site infection
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Shameka Shelby, Florida Southern College, USA

P2-200 Stability of Celecoxib in in vitro release media for drug delivery testing
Thomas Eickner, Insitute for Biomedical Engineering, University Medical Center Rostock, Germany

P2-201 An Ultra-Swelling Microneedle Device for Facile and Efficient Drug Loading and Transdermal Delivery
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Hao Chang, Hangzhou Institute of Medicine, Chinese Academy of Sciences, China

P2-202 Hybrid Nanocarriers based on Liposome-coated Mesoporous Silica Nanoparticles for Efficient Drug Delivery in Cancer Treatment
Tien Dung Nguyen Dinh, Institute of Applied Materials Science - Vietnam Academy of Science and Technology, Vietnam

P2-203 Enhancing Liposome Stability and Targeted Drug Delivery Through Biocompatible Polymer Modification of Soy Lecithin-based iposome
Ngọc Thuy Trang Le, Institute of Applied Materials Science - Vietnam Academy of Science and Technology, Vietnam

P2-204 Cathepsin-B-Sensitive Nanocarriers Selectively Deliver Antibodies inside Target Cancer Cells
Horacio Cabral, The University of Tokyo, Japan

P2-205 Multidrug delivery system based on graphene oxide nanoplatforms as an antitumoral strategy
Silvia Panseri, National Research Council of Italy, Italy

P2-206 SYNTHESIS OF PEI-b-PEGMA-b-PCL COPOLYMER AS A PLATFORM FOR ORAL DRUG RELEASE
Rodrigo Marques, Chemistry Institute, UNESP, Brazil

P2-207 Preparation and Characterization of neuroprotective factor A-loaded Lactic-co-glycolic acid micelle
Ming Hui Yang, Kaohsiung Medical University Hospital, Kaohsiung Medical University, Chinese Taipei

P2-208 Enhancing Breast Cancer (MCF7) Apoptosis: Synergistic Effects of Albumin-targeted Liposomes and Ultrasound for ROS Induction and Tumor Therapy
Ghaleb Husseini, American University of Sharjah, United Arab Emirates

P2-209 Targeted delivery of liposomal curcumin through ultrasound facilitation to a breast cancer cell line
Ghaleb Husseini, Department of Chemical and Biological Engineering, American University of Sharjah, United Arab Emirates

P2-210 Emul-gel formulation for colon-targeted delivery of synbiotics
Shristhi Rawat, TISC IIT Jodhpur, India

P2-211 Drug delivery by degradation of dense hydroxyapatite-based composites
Aliya Sharipova, Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Germany

P2-212 Inducing microscale discretisation to impart sprayability to an inherently antifibrotic biopolysaccharide to inhibit mucosal scarring in epidermolysis bullosa
Thomas Robinson, University of Birmingham, United Kingdom

P2-213 Ciclosporin A-loaded dissolving microarray patches for treating dermatitis condition: efficacy in an oxazolone-triggered in vivo model
Antonio José Guillot, Department of Pharmacy and Pharmaceutical Technology and Parasitology. University of Valencia, Spain

P2-214 Delivery of nanomedicine to CNS through the intrathecal route for treatment of leptomeningeal metastasis
Chung-Fan Kuo, UMass Chan Medical School, USA

P2-215 Optimizing nanostructured lipid carriers loaded with *Curcuma xanthorrhiza* extract for enhanced storage and digestive stability in oral delivery
Haekyung Shin, Department of Biotechnology, Yonsei University, Seoul, 03722, Republic of Korea, Korea, Republic of

P2-216 Development of Oleosin-decorated Nanoemulsion for Enhanced Colloidal Stability in Various pH Conditions
Hyewon Jang, Kookmin university, Korea, Republic of

P2-217 Exosomes derived from graphene hybrid multiple iPSC-vEC spheroids for accelerating vascularization
Woochan Kim, Chonnam National University, Korea, Republic of

P2-218 Electroformation and electrodeformation of giant unilamellar vesicles
Eunhwa Jo, Kyungpook National University, Korea, Republic of

P2-219 Gold Nanoparticle-Carrying T Cells for the Combined Immuno-Photothermal Therapy
Yujin Baek, Seoul National University, Korea, Republic of

P2-220 Development of theranostic nanospheres for targeting cancer-specific epithelial membrane antigen
Somin Lee, Seoul National University, Korea, Republic of

P2-221 A Self-Assembled Virus-like Particles Encapsulating KillerRed protein for Photodynamic therapy
Ji-Yeon Sim, Seoul National University, Korea, Republic of

P2-222 Development of tumor microenvironment targeted albumin-binding ligands for photodynamic therapy: pH-sensitive histidine based fatty acid derivatives
JinYoung Park, Seoul national university, Korea, Republic of

P2-223 Enhancing Solid Tumor Treatment: Targeted Delivery of Gemcitabine-Encapsulated Collagenase Conjugated Liposomes (GECL).
Jee-Eun Hwang, Seoul National University, Korea, Republic of

P2-224 *Pulmonary Surfactant-Based Pirfenidone-Loaded Nanovesicles for Inhalation Therapy of Idiopathic Pulmonary Fibrosis*
Chang Geun Kim, Department of Thoracic and Cardiovascular Surgery, Korea University Guro Hospital, Korea University College of Medicine, Korea, Republic of

P2-225 Market analysis and prospects of nanocellulose for biomedical applications
Sanghun Cho, Korea Institute of Science and Technology Information (KISTI), Korea, Republic of

P2-226 Systematic study of size/surface chemistry tunable polymerized RNA nanoparticles for efficient targeted therapeutics
Kyungjik Yang, Yonsei University, Korea, Republic of

P2-227 Efficient Bio-Engineered Injectable Hydrogel for Enhanced Chemo- and Chemodynamic Therapy
Moein Safarkhani, Inha University, Korea, Republic of

P2-228 Fabrication of a Biomimetic Chitin Polysaccharide Nano-Microfibrous Fungal Scaffold for Skeletal Muscle Tissue Engineering
Chanyoung Park, Department of Biotechnology and Bioinformatics, Korea University, Korea, Republic of

P2-229 Hyaluronic acid hydrogel with gradient mechanical properties for tissue engineering
Mina Kwon, Pusan National University, Korea, Republic of

P2-230 Enhanced functionality of stem cell spheroids via co-encapsulation with rapamycin depots in alginate hydrogel
RABYYA KAUSAR, SUNGKYUNKWAN UNIVERSITY, Korea, Republic of

P2-231 Cytogel: Cell-Crosslinked Thermogel
ZHENGYU PIAO, Pohang University of Science and Technology, Korea, Republic of

P2-232 Chondrocyte-mimicking microspheres for enhanced osteochondral defect repair
Na-Hyun Lee, 1.Institute of Tissue Regeneration Engineering, Dankook University, Cheonan 31116, Republic of Korea 2.Department of Nanobiomedical Science BK21 PLUS NBM Global Research Center for Regenerative Medicine, Dankook University, Cheonan, 31116, Republic of Korea, Korea, Republic of

P2-233 Thiolated chitosan-co-thiolated hyaluronic acid hydrogel promoted mouse ovarian follicle growth and maturation *in vitro*
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Sureerat Khunmanee, Chung-Ang University, Korea, Republic of

P2-234 Enhancing Biomedical Metal Implants with Synthetic Peptides: Improved Bioactivity and In Vitro Safety
Michel BOISSIERE, ERRMECe CY Cergy Paris Université, 95000- Cergy Pontoise, France, France

P2-235 Molecular and biophysical factors for directing the chromatic phase transitions of conjugated peptidic bioscaffolds
Herdeline Ann Ardoña, University of California, Irvine, USA

P2-236 Development of polymeric small-caliber vascular grafts exploiting the synergies between computational modeling and advanced fabrication approaches
Mario Milazzo, Department of Civil and Industrial Engineering, University of Pisa, Italy

P2-237 In situ integrated microsphere-based scaffolds with orchestrated metallic ion release on the minimally invasive treatment of osteoporotic fractures
SHEN DANNI, Zhejiang University, China

P2-238 Functionalized annealed microgels for spatial control of osteogenic and chondrogenic differentiation
Kent Leach, University of California, Davis, USA

P2-239 Spontaneous Orthogonal Alignment of Smooth Muscle Cells and Endothelial Cells Captures Native Blood Vessel Morphology in Tissue-Engineered Vascular Graft
Daniel Heath, Department of Biomedical Engineering, Graeme Clark Institute, The University of Melbourne, Australia

P2-240 Structured Hydrogel Nanofibrous Scaffolds via Reactive Cell Electrospinning for Cell Encapsulation
Elizabeth Cosgriff-Hernandez, The University of Texas at Austin, USA

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P2-241 Tailoring surface and bulk properties of bone tissue-engineered scaffolds through multifunctional nanocomposite layer-by-layer coatings
Nicholas Dunne, Dublin City University, Ireland

P2-242 Injectable and biodegradable piezoelectric hydrogel for medical applications
Thanh Nguyen, University of Connecticut, USA

P2-243 3D-printed, Citrate-based Bioresorbable Vascular Scaffolds for Coronary Artery Angioplasty
Yonghui Ding, Worcester Polytechnic Institute, USA

P2-244 Bioactive glass-based composites and hybrids, toward optimized substitutes to address the challenges of bone bioengineering
Amel Houaoui, CY Cergy Paris Université, France

P2-245 Influence Factors on the High-level Structure of Recombinant Humanized Collagen Type III and Its modulation of cell adhesion
Jing Wang, sichuan university, China

P2-246 Rescuing nucleus pulposus cells from senescence via dual-functional greigite nanozyme to alleviate intervertebral disc degeneration
Zhuobin Xu, Yangzhou University, China

P2-247 'Living' fluid interface elucidates unique cell adhesion behaviors at extremely soft scaffolds.
Jun Nakanishi, National Institute for Materials Science, Japan

P2-248 Bio-orthogonal click reaction-enabled highly specific in situ cellularization of tissue engineering scaffold
Zhihong Wang, Institute of Biomedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College (CAMS&PUMC), China

P2-249 Platelet rich fibrin - from autologous bioactive molecule sustained delivery to antibacterial effect
Arita Dubnika, Riga Technical University, Rudolfs Cimdins Riga Biomaterials Innovation and Development Centre, Baltic Biomaterials Centre of Excellence, Latvia

P2-250 Scaffold with aligned microchannels effectively repairs spinal cord injury
Tongling Zhang, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

P2-251 Ice-templating technique and its application in bioinspired macroporous materials
Hao Bai, Zhejiang University, China

P2-252 Promoting jaw bone regeneration with an injectable hydrogel adaptive to the microenvironment
Lingyan Cao, Shanghai Jiao Tong University, China

P2-253 Biomimetic tendinous scaffolds: replicating microarchitecture and mechanics to support intrinsic repair
Brittany Taylor, J. Pruitt Family Department of Biomedical Engineering, University of Florida, USA

P2-254 Developing decellularised extracellular matrix microgels via micronisation for skin tissue engineering strategies
Alexandre Watigny, University College Dublin, Ireland

P2-255 Porous matrix of hydrogel-based 3D cell culture platform with densely embedded capillary networks created by fibrous porogens
Aruto Hori, Chiba university, Japan

P2-256 Enhanced osteogenic responses of bone cells on hydroxyapatite-modified PL-b-CL electrospun scaffold
Eva Šebová, Institute of Experimental Medicine CAS, Czech Republic

P2-257 GELATIN METHACRYLATE MACROPOROUS CELL SCAFFOLD FABRICATION VIA ONE-POT AQUEOUS TWO-PHASE SEPARATION
Eya Ferchichi, 1Department of Biomedical Engineering, Saint Louis University, St. Louis, MO, USA

P2-258 Design of a composite 3D cell culture system based on a hydrogel-filled collagen scaffold
Xinyuan Song, Department of Materials Science & Metallurgy, University of Cambridge, United Kingdom

P2-259 Facile Fabrication of Anisotropic Porous Collagen Scaffolds
Kenneth Kimmins, University of Toronto, Canada

P2-260 Development of semi-IPN for topical delivery of anti-inflammatory and anti-bacterial drug for chronic wound healing application
MOHIT KAMBOJ, Department of Biomedical Engineering; Indian Institute of Technology Ropar, Rupnagar-140001, Punjab, INDIA, India

P2-261 In-vitro and in-vivo evaluation of a silicate (1393) and borosilicate (13-93B20) robocasted bioactive glass scaffolds
Agata Szczodra, Tampere University, Finland

P2-262 Ultrasound-enhanced cavitation using sub-micron stabilising nuclei for tissue engineering applications
Veronica Lucian, Institute of Biomedical Engineering, University of Oxford, United Kingdom

P2-263 *Porosity Incorporation in Polymer Scaffolds for Tissue Engineering Application: Design Considerations and Porosity Modulation Techniques*
Klaudia Jurczak, University of Groningen, Netherlands

P2-264 Optimising collagen I scaffolds for the promotion of vascularisation within HSkMC and HDMEC co-cultures.
Rosie Lester, Department of Materials Science and Metallurgy, University of Cambridge, United Kingdom

P2-265 Modulation of Bioactive Molecule Release from Platelet-Rich Fibrin and Fucoidan/Chitosan Delivery System
Karina Egle, Rudolfs Cimdins Riga Biomaterials Innovations and Development Centre of RTU, Institute of General Chemical Engineering, Faculty of Materials Science and Applied Chemistry, Riga Technical University, Riga, Latvia Baltic Biomaterials Centre of Excellence, Headquarters at Riga Technical University, Riga, Latvia, Latvia

P2-266 Enhancing medication delivery of eluting stents: a computationally aided parametric approach
Jack Poulton, McGill University, Canada

P2-267 Decellularization of human amniotic membrane and its impact on tensile viscoelasticity and bioscaffolds functionality
GLORIA LETICIA BARRERA PACHECO, UNIVERSITY OF GUANAJUATO, Mexico

P2-268 Autologous constructs for muscle engineering and repair
Peiqi Yang, Deakin University, Australia

P2-269 High dimensional analysis of porosity-mediated biomaterial tissue implant integration by mass cytometry and scRNA-seq
Colleen Roosa, University of Virginia, USA

P2-270 A novel investigation of non-fibrotic biomaterial-tissue interactions in subcutaneous tissue over 12 months
Ethan Nicklow, University of Virginia, USA

P2-271 A double cross-linking cryogel of chitosan and sericin with rapid water absorption for efficient hemostatic and wound healing
Yaqing Zhou, Northwestern Polytechnical University, China

P2-272 Highly efficient coral propagation using isolated soft tissue and titanium nonwoven fabric
Jun Takemasa, Kansai University, Japan

P2-273 A corneal scaffold based on acellular swim bladder
Yue Yin, National Engineering Research Center for Biomaterials, Sichuan University, China

P2-274 Organic matrix in situ inducing functional elements to construct bone scaffolds
Hui Yu, Shandog University, China

P2-275 3D printed Mg alloy TPMS scaffolds with multi-scale functionalities for high-performance bone regeneration
Bo Peng, Tsinghua University, China

P2-276 A detachable coacervate hemostat capable of hierarchical assembly with blood inspired by lizard tail autotomy
Yirong Zeng, The State Key Laboratory of Metal Matrix Composites, School of Materials Science and Engineering, Shanghai Jiao Tong University, Shanghai 200240, P. R. China. Zhangjiang Institute for Advanced Study (ZIAS), Shanghai Jiao Tong University, Shanghai, 201203 China., China

P2-277 The effect of topological design on the degradation behavior of additively manufactured porous zinc alloy
Yixuan Shi, University of Science and Technology Beijing, China

P2-278 An anti-inflammatory chondroitin sulfate-poly(lactic-co-glycolic acid) composite electrospinning membrane for postoperative abdominal adhesion prevention
Rui Gao, Institute of Biomedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College, China

P2-279 3D Printed Reinforced Hydrogel Scaffolds Based on Methacrylate-modified Chitosan for Tissue Engineering Applications
Xiaodie Chen, Department of Mechanical Engineering, The University of Hong Kong, Hong Kong SAR, China

P2-280 Systematic optimisation and scaling-up of cost-effective bacterial cellulose production, for biomedical applications
Soponvit Larpnimitchai, University of Sheffield, United Kingdom

P2-281 Influence of Microparticle parameters on vasculogenesis in granular hydrogels
Emily Ferrarese, University of Virginia, USA

P2-282 Based on collagenase-ROS time-responsive nanoparticle-coated balloon for the treatment of atherosclerosis
Lu Zhang, Southwest jiaotong university, China

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P2-283 Electrospun surface for 3D printed scaffolds for cartilage regeneration
Xinyu Li, Imperial College London, United Kingdom

P2-284 Polyhydroxyalkanoates: Towards Sustainable Material for Kidney Tissue Engineering
Syed Mohammad Daniel Syed Mohamed, University of Sheffield, United Kingdom

P2-285 3D constructs of an adipose stem cell (ASCs) and urothelium (UCs) coculture system with ECM scaffolds: material selection/seeding procedure
Guadalupe Hortensia Luévano-Colmenero, Universidad de Guanajuato, Mexico

P2-286 Multifunctionalized carbon-fiber-reinforced polyetheretherketone implant for rapid osseointegration under infected environment
Lisha Pan, College of Stomatology, Shanghai Jiao Tong University; Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, China

P2-287 Cu/C-dot-Loaded Vascular Stent with Lp-PLA2-Triggered Release for Regulation of inflammation and Preventing In-Stent Restenosis
dai sheng, southwest jiaotong university, China

P2-288 Sustainable polyhydroxyalkanoate-based 3d printed scaffolds for bone tissue engineering applications
Andrea Mele, University of Sheffield, United Kingdom

P2-289 Developing bioactive glasses for diabetic patients: HIF-1α regulation, bone remodelling and ion bioavailability.
Adriana-Monica Radu, University College London, United Kingdom

P2-290 Platelet-derived biomaterial with hyaluronic acid alleviates temporal-mandibular joint osteoarthritis: clinical trial from dist [illegible] Withdrawal
Abhinay Kumar Singh, Abhinay Kumar Singh, Chinese Taipei

P2-291 Hierarchical Scaffold with Durable Immunomodulation for Rotator Cuff Repairing
Liren Wang, Shanghai Sixth People's Hospital Affiliated to Shanghai Jiao Tong University School of Medicine, China

P2-292 Design of a dual therapeutic platform for the delivery of natural bioactive compounds and bacteriophages for topical skin applications
Emmanuel PAUTHE, CY Cergy Paris Université, ERRMECe Laboratory, Biomaterials for Health Group, France, France

P2-294 Organo-Mineral 3D-Printed Scaffolds for Treating Cleft Lip/Palate Deformities: A Clinical Study in Canine Patients
Baptiste Charbonnier, Nantes Université, Oniris, INSERM, Regenerative Medicine and Skeleton, RMeS, UMR 1229, F-44000 Nantes, France, France

P2-295 Polycaprolacton-based patches for the use in chronic tendon defect repair
Nina Angrisani, Hannover Medical School, Germany

P2-296 Melatonin-loaded collagen/chitosan scaffolds targeting re-epithelialization and wound healing
Konrad KLESZCZYNSKI, University of Muenster, Germany

P2-297 Advances in the in vivo evaluation of a tissue-engineered vascular graft made by weaving threads of cell-assembled extracellular matrix.
Nicolas L'Heureux, BioTis / University of Bordeaux / Inserm, France

P2-298 *Ex-vivo*, Post-radiation Evolution of Glioblastoma Extracellular Matrix
Alireza Sohrabi, University of Texas at Austin, USA

P2-299 Gelatin nanofiber membrane for cultured corneal endothelial cell transplantation
Euisun Song, Ophthalmology, Byers Eye Institute at Stanford University, School of Medicine, USA

P2-300 Application of genetically engineered extra cellular matrix binding ligand containing ELP for regenerative medicine
Vijaya Sarangthem, Kyungpook national University, School of Medicine, Korea, Republic of

P2-301 Chemical biology functional research of Polyphosphate (PolyP)
Wei Wei, Nanjing University, China

P2-302 Ultrasound counteracts inflammation by promoting the chondrogenic differentiation of mesenchymal stromal cells in 3D piezoelectric hydrogel
Cristina Manferdini, IRCCS Rizzoli Orthopedic Institute, Laboratory of Immunorheumatology and tissue regeneration, Italy

P2-303 Repair of segmental bone defect using a novel decellularized extracellular matrix and ceramic composite material.
Hesong Sun, Huamai Medical, China

P2-304 Proliferation and differentiation behavior of human dental pulp stem cells using phosphorylated cellulose nanofibers
Akihiro Iwasaki, Kyushu University, Japan

P2-305 Development of a 3D Bioprinted Scaffold for the Chronic Spinal Cord Injuries
Aslihan Akalinli, Acibadem Mehmet Ali Aydinlar University, Graduate Department of Biomedical Engineering; ACU Biomaterials Center, istanbul, Turkey, Türkiye

P2-306 Multifunctional and stable metal-organic cages accelerate wound healing via regulating microenvironment and promoting re-epithelization, collagen deposition and vascularization
Rui Wang, Sichuan University, China

P2-307 Bioactive hydrogel microcapsules for cultivation and differentiation of pluripotent cells into hepatocyte-like cells
Kianna Nguyen, Mayo Clinic, USA

P2-308 Exploring platelet-rich plasma (PRP) and whole ovary laparoscopic incision (WOLI) in ovarian rejuvenation: insights from a pilot study in sheep
Carolina Herranz-Diez, Universitat de Barcelona, Spain

P2-309 Dental pulp stem cell derived neutronal-like cells for spinal muscular atrophy
Congyue Peng, Clemson University, USA

P2-310 Physicochemical analysis of fucoidan nanoparticles synthesized by electron beam irradiation
KYUNGWON KIM, School of Medicine, Kyungpook National University, Korea, Republic of

P2-311 Development of a hydrogel ionic circuit device and its application in chronic wound biofilm treatment
Fan Zhao, Donghua University, China

P2-312 Development of a 2.5D-mucosa model to study the dental implant/soft tissue interface
Cornelia Wolf-Brandstetter, Dresden University of Technology, Institute of Materials Science, Max Bergmann Center of Biomaterials, Germany

P2-313 Elucidation of symbiotic interactions between cells and polymeric biomaterials with different properties
Tomoko Hashimoto, Shinshu University, Japan

P2-314 Designing a Homemade Image Analyzer: A Comparative Study with Commercial Devices
Simon Wang, National Taiwan University of Science and Technology, Chinese Taipei

P2-315 New biomaterial system based on titanium (Ti) and hydroxyapatite (HAp)
Edyta Kosińska, Department of Materials Engineering, Faculty of Materials Engineering and Physics, Cracow University of Technology, 37 Jana Pawła II Av., 31-864 Krakow, Poland, Poland

P2-316 Describing granular hydrogel rheology using a yield stress fluid model
Gunnar Thompson, University of Illinois Urbana-Champaign, USA

P2-317 Consolidation of Ti6Al4V/ hydroxyapatite composites by powder metallurgy
Julia Sadlik, Department of Materials Science, Faculty of Materials Engineering and Physics, Cracow University of Technology, Krakow, Poland, Poland

P2-318 Breast Implants and their effects
Madelief Rous, University Medical Center Groningen, Netherlands

P2-319 Systematic evaluation of non-destructive mechanical testing of tissue-engineered cartilage constructs
Dulani Sooriyaaratchi, Department of Biomedical Engineering, Graeme Clark Institute, The University of Melbourne, VIC 3010, Australia

P2-320 Enhancing cardiac mechanical recovery: insights from mechanical support with adjustable patches
Yuwen Lu, Zhejiang University, China

P2-321 Curcumin inhibits liquid–liquid phase separation of fused in sarcoma and attenuates the sequestration of pyruvate kinase to restore cellular metabolism
Wen-Pu Shi, Northwestern Polytechnical University, China

P2-322 Interfacial analysis of bone-like hydroxyapatite nanoparticles on titanium by atom probe tomography
Gustav Eriksson, Chalmers University of Technology, Sweden

P2-323 Utilizing Cyclic Nucleic Acid-Peptide Conjugates as Protease Sensors
Samuel Rozans, Lehigh University, USA

P2-324 Poly(3-hydroxybutyrate)/Graphene oxide (P(3HB)/GO) composite scaffolds for bone tissue engineering
Soponvit Larpnimitchai, University of Sheffield, United Kingdom

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P2-325 Characterization of Electro-spun Chitosan Nanofibers For Controlled Release of Antibiofilm Dispersal Signaling Molecules
Jermiah Tate, University of Memphis, USA

P2-326 A universal and simple characterization of hyaluronic acid modifications
Christos Leliopoulos, Uppsala University, Sweden

P2-327 Multifunctional ceramic-polymer biomaterials with pullulan as carrier of active substances in regenerative medicine
Agnieszka Sobczak-Kupiec, Cracow University of Technology, Poland

P2-328 Surface Characterization for Combination Products using X-Ray Photoelectron Spectroscopy
Volkmar Senz, Institute for Biomedical Engineering, Rostock University Medical Center, Germany

P2-329 Biocompatibility of Degradable Polymer-Iron Compounds for Biomedical Applications
Jana Markhoff, Rostock University Medical Center, Germany

P2-331 *In-silico* characterization of ultra-low crosslinked (ULC) ionic microgel pastes
E. Daniel Cárdenas-Vásquez, Chapman University, USA

P2-332 Mechanical and biological characterization of hybrid material compounds of Al2O3-toughened ZrO2 ceramics and additively manufactured Ti-35Nb-6Ta
Jan-Oliver Sass, Biomechanics and Implant Technology Research Laboratory, Department of Orthopedics, Rostock University Medical Center, Doberaner Straße 142, D-18057 Rostock, Germany, Germany

P2-333 Utilizing advanced characterization techniques for biomaterial surface analysis
Merve Kübra Aktan, KU Leuven, Department of Materials Engineering (MTM), Belgium

P2-334 *In situ generation of nitric oxide via antifouling metal-phenolic networks facilitates robust antimicrobial and hemocompatible biointerfaces*
Mark Garren, University of Georgia, USA

P2-335 Hemostatic agents made of dialdehyde starch/hyaluronic acid powder with blood clotting factors
Do Kyung Kim, Kumoh National Institute of Technology, Korea, Republic of

P2-336 Development of Long-Circulating Hemoglobin-Based Nano-Oxygen Carriers
Hyemin Cho, Department of Biological Sciences and Bioengineering, Inha University, Incheon, Korea, Republic of

P2-337 Effects of electrolyte concentration on benzalkonium chloride binding and aggregate size in ophthalmic hydrogel
Jihye Ahn, Department of Optometry, College of Energy and Biotechnology, Seoul National University of Science and Technology, Korea, Republic of

P2-338 Clinical Laser-Responsive Shape Memory Device for Patient-Specific Control of Intraocular Pressure in Glaucoma
Kyubae Lee, Department of Biomedical Materials, Konyang University, Korea, Republic of

P2-339 Core-shell structured liquid metal-nanocomposite microfiber for minimally-invasive implantable bioelectronics
Gi Doo Cha, Chung-Ang University, Korea, Republic of

P2-340 Customized 3D artificial grafts with biomimetic flexibility and anticoagulant surface modification: comprehensive feasibility evaluation for practical applications
Chae Hwa Kim, Korea Institute of Industrial Technology, Korea, Republic of

P2-341 Instantly activating hemostatic cellulose sealants application for uncontrollable bleeding
Jeon Jihoon, Yonsei University, Korea, Republic of

P2-342 Novel Stent Coating Utilizing Sustained Drug Release System for Alleviating Long-term Restenosis
Duck Hyun Song, CHA University, Korea, Republic of

P2-343 Long-term oxygenation and ROS scavenging hydrogel for diabetic wound healing
Jiyeon Lee, Korea Institute of Science and Technology, Korea, Republic of

P2-344 On-Demand Modification of Phenolic Adhesive to Prevent Auto-Oxidation of Catecholic Wet-Adhesive
YueJin KIM, Kyungpook National University, Korea, Republic of

P2-345 Versatile Hydrogel Adhesive for Bridging Soft Electronic Materials
Yejin Jo, Lynk Solutec Inc., Korea, Republic of

P2-346 Novel water-soluble phenolic chitosan derivative for a multifunctional biomaterial platform
Eunu Kim, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

P2-347 On-surface coacervation of polyphenolic adhesive and its applications
Han-Yeol Yang, Department of Chemistry, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

P2-348 Advanced Bioadhesive and biodegradable sensor based wireless device with thermoresponsive drug release for prevention in re-excision of Breast cancer
Anusha Ponnusamy, Jeonbuk National University, Korea, Republic of

P2-349 Adhesive and conductive interface based on bio-derived biomaterials
HYUN TACK WOO, Pohang University of Science and Technology, Korea, Republic of

P2-350 Controlling the Balance of Tautomeric States in Oxidized Dopa: Understanding via Thiol-abundant Protein in Interfacial Mussel Foot Proteins
Taehee Yoon, Department of Chemical engineering, Pohang University of Science and Technology (POSTECH), Pohang, 37673, Republic of Korea, Korea, Republic of

P2-351 Tattoo sticker-like freeform cell migration-based cell sheet delivery method
Yejin Youm, Postech, Korea, Republic of

P2-352 An efficacy study of adipose tissue decellularized hydrogel to enhance the healing of acellular dermal matrix in breast-conserving surgery
BYEONG KOOK KIM, Industry 4.0 Convergence Bionics Engineering, Pukyong National University, Korea, Republic of

P2-353 Non-leachable surface-grafted polymer brushes combined with surface-segregating initiator
Seungwon Yang, Center for Biomaterials, Biomedical Research Institute, Korea Institute of Science and Technology, Korea, Republic of

P2-354 Localized biodistribution of Rhodamine B released from a PDMS-based balloon type implantable drug delivery device
Muhammad Tausif, DGIST, Korea, Republic of

P2-355 Wireless optofluidic neural implant with replaceable and refillable electrochemical micropumps for chronic pharmacology and optogenetics
Eun Young Jeong, KAIST, Korea, Republic of

P2-356 Hybrid material based on polyelectrolytes and inorganic nanoparticles for enhancing cell adhesion and growth
Thi Thuy Chau Nguyen, Chungnam National University, Korea, Republic of

P2-357 Precisely localized drug delivering and adhesive coacervate coating for wound regeneration
Young Kim, Seoul National University Hospital, Korea, Republic of

P2-358 Green tea extracts based polymeric glue with high strain tolerance under water human-machine interface through densely packed network
Kyumin Kang, Sungkyunkwan University, Korea, Republic of

P2-359 Shear-responsive, low-viscosity bioadhesive: physicochemical properties of the dilute phase in polyphenolic coacervates
Helen H. Ju, Korea Advanced Institute of Science and Technology, Korea, Republic of

P2-360 Implantable optogenetic deep brain stimulation system for treating Parkinson's disease
Choong Yeon Kim, KAIST, Korea, Republic of

P2-361 A hemostatic hydrogel with strong mechanical property
Fang Geng, Medtronic (Shanghai) Co., Ltd, China

P2-362 A pilot study on degradation behaviors in vivo of Fe, Zn, Mg alloy surgical staples
Fang Geng, Medtronic, China

P2-363 *In Vitro* Evaluation of Nitrogen-Doped Diamond-Like Carbon Coatings for Antimicrobial Efficacy and Biocompatibility
Hisao Haniu, Shinshu University, Japan

P2-364 In vitro validation of electric fields using 2D and 3D systems to decrease cell proliferation in glioblastoma
Monica Echeverry Rendon, IMDEA Materials, Spain

P2-365 Nothing compares 2 U - using your own energy to power smart cardiac devices
Andreia T. Pereira, i3S - Institute for Research and Innovation in Health, University of Porto, Portugal

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P2-366 Mechanism of Remodeling and Local Effects in Vivo of a New Injectable Cosmetic Filler
Likui Sun, National Medical Products Administration Jinan Quality Supervision and Inspection Center for Medical Devices, China

P2-367 Development of an antimicrobial multimodal coating destined for hernia meshes
Cynthia Calligaro, SPARTHA Medical, France

P2-368 Multidrug silk/dopamine composite hydrogels for wound healing study
Tze-Wen Chung, Biomedical center, Colleage of Biomedical Engineering, National Yang-Ming Chiao-Tung University, Chinese Taipei

P2-369 Hydrogen sulfide-releasing bioactive brush for cardiovascular stents
Daihua Fu, Sichuan University, China

P2-370 Nanocomposite Mussel Inspired Bio-Adhesives for Early Treatment of Pelvic Floor Detachment
Yi Hong, University of Texas at Arlington, USA

P2-371 Nonglutaraldehyde crosslinking and modification for bioprosthetic valves
Cheng Zheng, Sichuan University, China

P2-372 3D Fabric-Based Anisotropic Hydrogel Scaffolds for Enhanced Meniscus Substitutes: Matching Mechanical Signals to Protect Joint Cartilage
Fujun Wang, Donghua University, China

P2-373 Diagnostic utility of fluorogenic Au nanoparticle probe corroborated by rabbit model and panel of osteoarthritic patients
Cancan Du, Peking University Third Hospital, China

P2-374 Development of non-bioabsorbable and bioabsorbable metals for biomedical applications - challenges and opportunities
Ana Paula Rosifini Alves, University Estadual Paulista (UNESP), Brazil

P2-375 Anti-swellable supramolecular adhesives for dural closure
Hiyori Komatsu, University of Tsukuba, National Institute for Materials and Science, Japan

P2-376 Design of tissue adhesive gelatin microparticles for robust closure of post-endoscopic submucosal dissection perforation
Shima Ito, University of Tsukuba, Japan

P2-377 Immobilization of chymase inhibitor complex peptide on ePTFE for preventing in graft stenosis.
Yuki Matsui, Faculty of Chemistry, Materials and Bioengineering, Kansai University, Japan

P2-378 Development of wireless light-emitting devices based on polymeric thin films and evaluation of their hyper-localized photosensitization
Masato Saito, Tokyo Institute of Technology, Japan

P2-379 Evaluating Barbed Suture Pull-Out Strength by a Novel *In Vitro* Test Model Using Polydimethylsiloxane (PDMS)
Cheng-Han Wu, Department of Chemical Engineering and Biotechnology, National Taipei University of Technology, Taipei 10608, Taiwan, Chinese Taipei

P2-380 Prolonged bioadhesive on renewing tissue mediated by microtattooing
Tianqin Ning, McGill University, Canada

P2-381 Trimodal US/PA/MR nanosensors enable noninvasive longitudinal tracking of stem cell location and viability
Anamik Jhunjhunwala, Department of Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine, Atlanta, GA, USA

P2-382 Extracellular Matrix-Inspired All Hydrogel Biohybrid Neural Interfaces for Combined Microelectrode Array Technologies, Tissue Scaffolding, and Stem Cell Therapy
WanLou Lei, National Yang Ming Chiao Tung University, Chinese Taipei

P2-383 Facile fabrication of thin-film adhesives containing bio-inspired gallol for enhanced material adhesion
Daiki Sekita, Tokyo Institute of Technology, Japan

P2-384 The interplay between impedance spectroscopy and neural recordings from the spinal cord
Brittany Hazelgrove, School of Pharmacy, Faculty of Medical and Health Sciences, University of Auckland, New Zealand

P2-385 Super elastic adhesive hydrogel inspired by the mussel proteins
Nafiseh Olov, 1. Department of Biomedical Engineering, Faculty of Engineering and Information Technology, The University of Melbourne, Melbourne, Australia 2. The Graeme Clark Institute, The University of Melbourne, Melbourne, Australia, Australia

P2-386 A transcatheter injectable alginate/extra cellular matrix (ECM) hydrogel for heart failure treatment
Yulong Fu, Institute of Biomedical Engineering Chinese Academy of Medical Sciences and Peking Union Medical College (CAMS&PUMC), China

P2-387 Radiopaque Physical Crosslinked Gel Microspheres as Potential Embolic Agent
Li Jing, Sichuan university, China

P2-388 Extra-Cellular Matrix (ECM)-Mimicking Hydrogel Platform to Improve Islet Graft Survival and Functionality in a Macroencapsulation Device
Victoria Sarangova, Leibniz-Institut für Polymerforschung Dresden e. V., Technische Universität Dresden, Germany

P2-389 The interaction of indoxyl sulfate vs. skatole with low-fouling PEO thin films
Ayda Ghahremanzadeh, University of Alberta, Canada

P2-390 Uremic toxin adsorption to low-fouling PEO films: implications for the design of blood-contacting surfaces
Ayda Ghahremanzadeh, University of Alberta, Chemical and Materials Engineering Department, Canada

P2-391 Protein-polyphenol adhesives for bone fracture repair
SHRUTI IYER, Indian Institute of Technology, Bombay, India

P2-392 Water activated bioadhesive based on shelf stable catechol variants
Konrad Kozlowski, NTU - NANYANG TECHNOLOGICAL UNIVERSITY, Singapore

P2-393 CADAVER PILOT STUDY: PHOSPHOSERINE BIOADHESIVE AS RESORBABLE VERTEBRAL SCREW AUGMENTATION AGENT
Philip Procter, Department of Materials Science and Engineering, Uppsala University, France

P2-394 Quercetin loaded Mn-based layered double hydroxide nanosheets for integrated diagnosis and inhibition of atherosclerotic plaques
jiawei cui, Southwest Jiaotong University, China

P2-395 Ultra-fast self-healing toughness-enhancing bioadhesives
Zhanshan Gao, College of biomedical engineering, Sichuan University, China

P2-396 Nitric Oxide-Releasing Surface with Enhanced Albumin Affinity Mitigates Infection and Foreign Body Reaction
Yi Wu, University of Georgia, USA

P2-397 The impact of polyethylene glycol and Tween polymer as surface modifiers on rare-earth-doped nanoparticles as a shortwave infrared agent
Mohd Yaqub Khan, Chung Yuan Christian University, Chinese Taipei

P2-398 Exploring re-osseointegration of mechanically overloaded titanium implants.
Martina Jolic, Department of Biomaterials, University of Gothenburg, Sweden

P2-399 Photo-crosslinking of suckerin-based adhesive hydrogels using a natural polyphenol
Withdrawal
Jayaseelan Rajasekaran, Vellore Institute of Technology, India

P2-400 The role of various salts in the emulsification process of plant-based starch to improve anti-adhesion material efficacies
Tzu-Shan Fang, Taipei Wego Private Senior High School, Chinese Taipei

P2-401 Calcium Anchoring on Globular and Lamellar Microstructures on the Ti6Al4V alloy surface for the Hydroxyapatite Growth
Mercedes Paulina Chávez Díaz, INSTITUTO POLITÉCNICO NACIONAL, Mexico

P2-402 Enhancing Mussel Foot Protein Adhesion with Metal-Infused Nanoparticle
Yang Wei, National Taipei University of Technology, Chinese Taipei

P2-403 Characteristics of polysaccharides-containing care solution on tear film components removal and lubrication for orthokeratology lenses
You-Cheng Chang, NTUT, Chinese Taipei

P2-404 Photoconvertible fluorescent coding systems for individual cell labeling and tracking
Olga Sindeeva, Skolkovo Institute of Science and Technology, Russia

P2-405 Biomimetic electrospun tri-layer tissue engineered heart valve leaflets with low calcification and good regenerative ability
Jing Liu, Institute of Biomedical Engineering, Chinese Academy of Medical Sciences & Peking Union Medical College, China

P2-406 Poly(styrene-*block*-isobutylene-*block*-styrene) (SIBS) triblock copolymer for an implantable glaucoma device
Yongmoon Kwon, Santen, USA

P2-407 Bulk properties of poly(styrene-*block*-isobutylene-*block*-styrene) (SIBS) triblock copolymer for implantable devices
Yasushi Kato, Santen, USA

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P2-408 Porous titanium complex with mimicking amino acid domain as a compound for bioactive bone scaffolds
Pemikar Srifa, Translational Medicine Research Center (TMRC), Department of Biomedical Sciences and Biomedical Engineering, Faculty of Medicine, Prince of Songkla University, Songkhla, 90110, Thailand., Thailand

P2-409 Integration of poly(3,4-ethylenedioxythiophene)/carbon nanotube (PEDOT/CNT) coating on flexible implantable neural devices to achieve multimodality and implant stability
Elisa Castagnola Castagnola, Louisiana Tech University, USA

P2-410 Coil geometry and efficiency of muscle-like actuators
Sinmisola Aloko, School of Mechanical, Materials, Mechatronic and Biomedical Engineering, University of Wollongong, Australia

P2-411 Development of a novel fibrin matrix derived from Platelet-Rich Plasma
Jon Mercader Ruiz, Advanced Biological Therapy Unit, Hospital Vithas Vitoria, 01008 Vitoria-Gasteiz, Spain, Spain

P2-412 Visualizing superfine microvasculature in magnetic resonance images using supramolecular MR contrast agent
RAGHAV SONI, National Cerebral and Cardiovascular Center Research Institute, Osaka, Japan, Japan

P2-413 Water-triggered stiffening of shape-memory polyurethanes composed of hard backbone dangling PEG soft segments
Wenkai Liu, Sichuan University, China

P2-414 Ultra-tiny gelatin nanoparticles-combined hybrid stem cell spheroids for tissue regeneration
Kim Dream, Chonnam National University, Korea, Republic of

P2-415 Development of porous and uniaxially aligned cell-laden 3D constructs for muscle regeneration
Youngwon Koo, SungKyunKwan University, Korea, Republic of

P2-416 Regenix™ kidney: ready-to-use, kidney-specific hydrogel for 3D cell culture research
Seungrok Lee, Cellartgen, Korea, Republic of

P2-417 Regenix™ Heart: Custom hydrogel for advanced 3D cultivation of cardiac cells
Seulbi Lee, Cellartgen, Korea, Republic of

P2-418 Exploring Regenix™ Lung as a tissue-specific matrix for organoid culture studies
Da Hye Song, Cellartgen, Korea, Republic of

P2-419 Tissue-specific extracellular matrix hydrogels as matrigel alternatives for organoid culture: a comparative proteomic analysis
Eun Je Jeon, Cellartgen, Korea, Republic of

P2-420 Regenix™ Intestine: Overcoming challenges in organoid culture matrices.
Dong Gue Lee, Cellartgen, Korea, Republic of

P2-421 Regenix™ Liver: Ready-to-use, liver-specific hydrogel for 3D cell culture research.
Dong Gue Lee, Cellartgen, Korea, Republic of

P2-422 Esophagus-mimicking scaffold for culturing esophageal organoids
Sewon Park, Yonsei University, Department of Biotechnology, Korea, Republic of

P2-423 Cryopreservation of spheroid
Eui Bum Choi, korea university, Korea, Republic of

P2-424 3D in vitro synovial membrane model on polycaprolactone - micropatterned nanofibrous microwells for screening disease-modifying anti-rheumatic drugs
Dongwoo Kim, Department of Applied Bioengineering, Graduate School of Convergence Science and Technology, Seoul National University, Seoul, Korea, Republic of

P2-425 Human tissue-derived ECM as a material for precise colorectal cancer modeling
Hyun Jin Lee, KAIST, Korea, Republic of

P2-426 Drug evaluation of neurodegenerative disease using biohybrid robot-on-a-chip imitating the human motor nervous system
Kim Seewoo, Sogang University, Korea, Republic of

P2-427 Retinal/thalamic Assembloid Encapsulated by Gold Nanomesh to Evaluate the Anti-aging Drug of Retina
Sangeun Lee, Department of Chemical and Biomolecular Engineering, Sogang University, Korea, Republic of, Korea, Republic of

P2-428 An In Vitro Human Gut Model With Enhanced Enteroendocrine Function Using Gut-Specific Biochemical and Biophysical Cues
Hohyeon Han, School of Interdisciplinary Bioscience and Bioengineering, Pohang University of Science and Technology (POSTECH), Korea, Republic of

P2-429 Comparative Analysis of Vascularized Hepatic Microtissue Spheroids Fabricated via Pre-Set Bioprinting for Hepatic Tissue Regeneration
Minji Park, Research Institute, T&R Biofab Co., Ltd., Korea, Republic of

P2-430 Elaboration of a Liver Decellularized Extracellular Matrix -Derived Bioink for Bestowing Microenvironmental Cues in Hepatic Progenitor Differentiation Towards Hepatocyte Lineage Specification
Dayoon Kang, Pohang University of Science and Technology, Korea, Republic of

P2-431 Anisotropic Collagen/Hyaluronan 3D Printed Hydrogels as Novel Model of Annulus Fibrosus
Christophe Helary, Sorbonne University, France

P2-432 Functional cardiac organoids generated in PEG-based synthetic hydrogels
Zhen Ma, Syracuse University, USA

P2-433 Development of new inks for Chronic Lymphatic Leukemia in vitro models
Silvia Fare', Politecnico di Milano - Dept Chemistry, Materials and Chemical Engineering, Italy

P2-434 Application of hair follicle organoids in screening hair growth-promoting drugs
Tatsuto Kageyama, Kanagawa Institute and Industrial Science and Technology, Japan

P2-435 Predictive side of in vitro tissue models: the case of engineered 3D skin
Viktorie Rockova, (1) Institute of Experimental Medicine CAS, Prague, Czech Republic; (2) Department of Physiology, Faculty of Science, Charles University in Prague, Prague, Czech Republic, Czech Republic

P2-436 Microscale Bioreactor Based *In Vitro* Human Biomimetic Liver Acinus Model for Drug Induced Liver Injury Evaluation
Souradeep Dey, Centre for Nanotechnology, Indian Institute of Technology Guwahati, Guwahati-781039, Assam, India., India

P2-437 A platform technology for high-throughput organoid culture in totally defined ECM microcapsules
Junyi Liu, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore

P2-438 Decellularized lung extracellular matrix-methacrylated silk fibroin-based 3D bioprinted mechanically tunable dual crosslinked scaffold supports alveolar cell differentiation at ALI culture
Soham Ghosh, Indian Institute of Technology Hyderabad, India

P2-439 Exploring the Influence of Matrix Mechanics and Shear Stress on Glycocalyx-Mediated Mechanotransduction in Endothelial Cells
Mohammad Hamrangsekachaee, Northeastern University, USA

P2-440 Engineering Pulmonary Microtissues to Investigate Fibroblast Mediated Tissue Remodeling
Elisa Nieves, Georgia Institute of Technology, USA

P2-441 Functional Hepatocyte Expansion in a Novel 3D Microfiber-based Scaffold for Liver Tissue Engineering
Mary Jean Savitsky, Florida Agricultural and Mechanical University, USA

P2-442 Engineering photo-addressable hydrogels to investigate fibroblast plasticity in 3D
Mikala Mueller, University of Colorado Denver, USA

P2-443 A Vascularized platform for organogenesis and ischemia therapy
Zhuangzhuang Yang, Key Laboratory of Bioactive Materials for the Ministry of Education, College of Life Sciences, Nankai University, Tianjin 300071, China, China

P2-444 Advances in patient-derived osteosarcoma organoid culture and personalised medicine – Development and Characterization of Tissue-specific Extracellular Matrices
Minne Dekker, Queensland University of Technology (QUT), Centre for Biomedical Technologies, Australia

P2-445 Engineering metastatic osteosarcoma tumour microenvironments for personalised medicine
Luke Hipwood, Centre for Biomedical Technologies, School of Biomedical Sciences, Queensland University of Technology (QUT), Brisbane, QLD 4059, Australia, Australia

P2-446 The biophysical properties of microporous CEC-OSA/MMT composite hydrogels ignificantly influence the subsequent fate of mesenchymal stem cells cultivation
Wenjing Liu, Zhejiang University of Technology, China

P2-447 3D-prinitng of artificial pancreas with the pancreatic cells via a CRISPR/dCas9asSystem
Hung-Yin Lin, National University of Kaohsiung, Chinese Taipei

P2-448 From White to Brown: Polymers-Based Two-Step Strategies for Dedifferentiation of Mature Adipocytes into DFAT and Subsequent Differentiation into Brown Adipocytes
ASLI SENA KARANFIL, Department of Applied Chemistry, Graduate School of Engineering, Osaka University, Osaka, Japan, Japan

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P2-449 Glycosaminoglycan-based microgels to direct in vitro morphogenesis
Valentina Magno, Leibniz Institute for Polymer Research Dresden, Germany

P2-450 Anthrarufin-containing thermoresponsive hydrogel for inhibiting Porphyromonas gingivalis
Gyu-Yeon Shim, Wonkwang University, College of Dentistry, Department of Dental Biomaterials, Korea, Republic of

P2-451 Flexible nanofibrous membranes coated with polydopamine and nanohydroxyapatite with enhanced antibacterial and dental tissue regenerative properties
Maria Chatzinikolaidou, University of Crete, Greece

P2-452 Effect of electronic cigarettes on fibroblast interaction with dental implants
Mahmoud Rouabhia, Université Laval, Canada

P2-453 Desorption of salivary pellicle and primer adsorption on zirconium dioxide dental ceramics
Hanna Tiainen, University of Oslo, Norway

P2-454 Designing mineralizing primers for two-step self-etching bonding systems to improve dentin bonding.
Thanaporn Mongkolngamcharoen, Faculty of Dentistry, Oral & Craniofacial Sciences, King's College London, United Kingdom

P2-455 Bioinstructive polymeric coatings guide secreted pericellular extracellular matrix for percutaneous device healing
Nicholas Fischer, University of Minnesota, USA

P2-456 Design and properties of composite antibacterial light cured dental adhesive system
Daixing Zhang, Beijing university of chemical and technology, China

P2-457 TITANIUM ion leakage in regard to anodized titanium: a pilot study
Damian Lee, The Ohio State University College of Dentistry, USA

P2-458 CaP nanocomposite-based cfDNA scavenger alleviates periodontitis-related alveolar bone resorption
Yifan Wang, Withdrawal, Stomatology, Tongji Medical College, Huazhong University of Science and Technology, China

P2-459 Concentrates urinary biomarkers and purify urine via the osmosis processor
Gino Lee, National Taiwan University of Science and Technology, Chinese Taipei

P2-460 GOLD AND CERIUM CATALYZED DUAL CHANNEL COLORIMETRIC PAPER STRIPS FOR ULTRASENSITIVE AND QUANTITATIVE DETECTION OF ALZHEIMER'S DISEASE BIOMARKERS Withdrawal
Sarathkumar Elangovan, Sree Chitra Tirunal Institute for Medical Sciences and Technology, India

P2-461 Development of sensitive electrochemical immunosensor as a point-of-care device for detection of soluble CD36 -A plausible biomarker for diabetic nephropathy
Jagannathan Venkatesan, Withdrawal, Renal Research Lab, Centre for Bio-Medical Research, Pearl Research Park, School of Bio Sciences and Technology, Vellore Institute of Technology, Vellore – 632 014, Tamil Nadu, India, India

P2-462 Employing microfluidics to investigate the influence of hydrostatic pressure on VE-cadherin protein dynamics
Pranav Vasanthi Bathrinarayanan, University of Birmingham, United Kingdom

P2-463 A personalized regenerative solution for patients using biomaterials
Dan Jing Wu, TU/e, Netherlands

P2-464 Design and optimization of isothermal gene amplification for generation of high-gain oligonucleotide products by microRNA
Jihee Lee, Incheon National University, Korea, Republic of

P2-465 Catalase-like hydrogel crosslinked with Fe-porphyrin to enhance wound healing in diabetes
Min ji Kim, Seoul National University, Korea, Republic of

P2-466 Biomineralized manganese oxide-based nanoparticle attenuates gouty arthritis symptoms
Padmanaban Sathiyamoorthy, Chonnam National University, Korea, Republic of

P2-467 Education and workforce development strategies in biomaterials sciences and research to enhance global biomedical innovation
Delphine Dean, Department of Bioengineering, Clemson University, USA

P2-468 Infection-Resistant Silicate Membranes for Burn Wound Management
Kausik Mukhopadhyay, Department of Materials Science Engineering, University of Central Florida. Orlando, FL., USA

P2-469 The importance of connectivity in stochastic lattice structures for porous orthopedic implant
Stylianos Kechagias, Imperial College London, United Kingdom

P2-470 Increasing the tissue integration of flexible implants: surface plasma modification and polydopamine deposition for polyurethane co-polymers
Sophie Armstrong, CardioRespiratory Engineering and Technology Laboratory (CREATElab), Department of Mechanical and Aerospace Engineering, Monash University, Australia

P2-471 Preparation of bacterial cellulose modified by graft polymerization of acrylic acid and subsequent calcification for osteoblast proliferation
Haruto Takemura, Chiba Institute of Technology, Japan

P2-472 A holistic approach to addressing healthcare infections using metal organic framework materials
Melissa Reynolds, Colorado State University, USA

P2-473 Engineered living material for light-induced synthesis of lycopene
Laura Sabio Rodriguez, University of Glasgow, United Kingdom

P2-474 Formulation of a lubricating gellan gum eyedrop to prevent corneal scarring in Epidermolysis Bullosa patients
Samuel Moxon, The University of Birmingham, United Kingdom

P2-475 Corrosion in modular dual mobility acetabular components for total hip replacement: a retrieval analysis study
Aarti Shenoy, Hospital for Special Surgery, USA

P2-476 Advancing ICK research: Real-time, label-free imaging of lymphocyte subsets.
Hye-Jin Kim, Tomocube,Inc., Korea, Republic of

P2-477 Recombinant collagen as bioink ingredient for regenerative medicine applications
Eva Loo, Evonik (SEA) Pte Ltd, Singapore

P2-478 Nano-Hybridized Fiber-Integrated Scaffold Promoting Tissue Repair
Xiang FEI, Donghua University, China

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P3-001 Multi-responsive gauge factor of skin-mimicked soft electronic hydrogel sensor
Akhmad Irhas Robby, Korea National University of Transportation, Korea, Republic of

P3-002 Polyphenol derived hydrogel for the inhibition of malignant glioma and regeneration of brain microenvironment
Jungwoo Kim, Sungkyunkwan University, Korea, Republic of

P3-003 A Self-healing, Adhesive, Conductive Wearable Hydrogel Patch for Electrochemical Glucose Sensor
Soo A Kim, School of Electrical and Electronic Engineering, Yonsei University, Korea, Republic of

P3-004 Synthesis and characterization of methacrylated glycol chitosans : a versatile multi-fuctional thermogel platform for enhanced biomedical applications.
Youngju Lee, Chungnam National University, Korea, Republic of

P3-005 Refined control of mechanical and stimuli-responsive properties of hydrogels by hybridization with elastin-like polypeptide
Yeongjin Noh, UNIST, Korea, Republic of

P3-006 INJECTABLE DYNAMIC HYDROGEL SYSTEMS WITH TUNABLE GELATION AND PHYSICOCHEMICAL PROPERTIES
Hoang-Minh Pham, Chungnam National University, Korea, Republic of

P3-007 pH-Responsive Injectable Hydrogel Based on Chitosan-Boronobenzoic acid: A Novel Therapeutic Strategy for Osteomyeliti
Weiqiang Hao, Kyungpook National University, Korea, Republic of

P3-008 Reversibly condensable DNA hydrogel for protecting and releasing cargo molecules
Kyounghwa Jeon, Seoul National University, Korea, Republic of

P3-009 Self-crosslinking 2,4,6-trihydroxybenzaldehyde conjugated chitosan hydrogel for drug delivery
Jeongin Seo, Korea Advanced Institute of Science and Technology, Korea, Republic of

P3-010 Seawater-induced Gallol-conjugated Chitosan Hydrogel for Flexible Sensor
Gyu Ri Park, Department of Organic Materials Engineering, Chungnam National University, Korea, Republic of

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P3-011 Customized multifunctional hydrogel incorporating functionalized carbon nanotube fillers and laponite XLG fillers
Minkyong Kang, School of Electrical and Electronic Engineering, Yonsei University, Korea, Republic of

P3-012 Hydrogel based adhesive film (H-AF) for versatile electrical interfacing in soft electronics
Yurim Lee, School of Electrical and Electronic Engineering, Yonsei University, Korea, Republic of

P3-013 Soft Matrix Regulates Mesenchymal-to-Endothelial Transition of Fibroblasts
Jongbeom Lee, Korea Advanced Institute of Science & Technology, Korea, Republic of

P3-014 Multi-functional Borax Crosslinked PVA Hydrogels for Organ-Motion Monitoring Sensor
Ji woo Nam, Chungnam National University, Korea, Republic of

P3-015 Glutathione based Multi-Functional Hydrogel: A Next-Generation Antioxidant Therapy Platform for ROS-damaged Salivary Glands Repair
Byulhana Kim, Seoul National University, Korea, Republic of

P3-016 Bioactive magnesium ions-releasing hydrogels for in situ tissue regeneration via macrophage polarization
Jeong Min Kim, Department of Bioengineering and Nano-Bioengineering, Incheon National University, Korea, Republic of

P3-017 Substrate stiffness- dependent biomechanical characteristics of brain microglia
Seungseop Kim, KAIST, Korea, Republic of

P3-018 4D Biopolymer-silica hybrid hydrogels for tissue modelling and regenerative medicine.
Gowsihan Poologasundarampillai, University of Birmingham, United Kingdom

P3-019 Heparin-binding domains in elastin-like proteins for improved tissue integration
Geert-Jan Graulus, Hasselt University, Belgium

P3-020 Hybrid hydrogel to control cell response and regenerate dental pulp
Jerome Sohier, CNRS - UMR 5305 - Laboratoire de biologie tissulaire et ingénierie thérapeutique, France

P3-021 Interpenetrating network hydrogels for cartilage modelling
Sophie Lerouge, Laboratoire de Biomatériaux et BioFabrication (BBF), Centre de Recherche du Centre Hospitalier de l'Université de Montréal (CrCHUM), Montréal, QC, Canada

P3-022 Microenvironment-responsive multifunctional hydrogels for cardiac repair after injury
Cheng Hu, Sichuan Univerisity, China

P3-023 Chemical Conjugation of NMN into PVA Hydrogels: The Good, The Bad and The Ugly
Penny Martens, UNSW Sydney, Australia

P3-024 Osteoblastic differentiation of MSCs on octacalcium phosphate modified with glycosaminoglycan regulating adsorption-desorption of cytokine
Ryo Hamai, Division of Craniofacial Function Engineering, Tohoku University Graduate School of Dentistry, Japan

P3-025 Uncovering a novel hydrogel based therapeutic approach for Osteoarthritis
Mário Barbosa, i3s - University of Porto | ICBAS - University of Porto, Portugal

P3-026 A calcium phosphate/alginate hydrogel for application as bone glue
Benedikt Kruse, Inorganic Chemistry and Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Universitätsstr. 5-7, 45141 Essen, Germany, Germany

P3-027 Interplay of autophagy and ER-MITO calcium transport in mitigating soft Substrate-Induced apoptosis and enhancing mitochondrial dynamics in breast cancer cells Withdrawal
甜 赵, University of Electronic Science and Technology of China, China

P3-028 Minimally designed thermo-magnetic dual responsive soft robots for complex applications
Clio Siebenmorgen, Rijksuniversiteit Groningen / University Medical Center Groningen, Netherlands

P3-029 Dynamic covalent cross-linked nanogel-stabilized pickering emulsions for responsive microstructures
Clio Siebenmorgen, Rijksuniversiteit Groningen / University Medical Center Groningen, Netherlands

P3-030 Development of poly(γ-glutamic acid)/starch/hydroxyapatite hydrogels with self-healing ability
Rina Kugimiya, Department of Applied Chemistry, Graduate School of Engineering Osaka University, Japan

P3-031 Deciphering the role of hydrogel network topology in programmably degradable hydrogels
Xinyi Sheng, Georgia Institute of Technology, USA

P3-032 Enhancement of physical strength of biodegradable injectable hydrogel by branching and cross-linking strategy
Yuki Syoda, Kansai University, Japan

P3-033 Construction of a temperature-responsive injectable hydrogel with enhanced tissue adhesive properties
Yuki Miyaji, kansai university, Japan

P3-034 Facile physical gelation of rice straw cellulose without thermal incubation via preferential interchain entanglements
Prabhpreet Kaur, Deakin University, India

P3-035 Synthesis of soluble ultra-high-molecular-weight 3-dimensional network structures of poly(ethylene glycol), Molecular Nets, with various mesh sizes
Daigo Taniguchi, kansai university, Japan

P3-036 Preparation and properties of photocrosslinked hydrogel composite materials consisting of fish collagen peptide and fish collagen microfibers for tissue engineering
Kei Nomoto, Chiba Institute of Technology, Japan

P3-037 Chitosan–siloxane hydrogel stiffness characterization
Rea Okuyama, Kyushu Institute of Technology Univ., Japan

P3-038 Functionalization of cellulose using glycometabolism
Masaki kakisako, Kansai Univ., Japan

P3-039 A multi-functional, highly reactive oxygen species scavenging cardiac patch via 3D bioprinting technology applied in myocardial infarction
Ting Yu Yang, Department of Materials Science and Engineering, Chinese Taipei

P3-041 Characterization of sacchachitin-based diepoxy-crosslinked hydrogel as a biomaterial for wound healing
BANG YU WEN, Department of Biotechnology and Pharmaceutical Technology, Yuanpei University of Medical Technology, Chinese Taipei

P3-042 Enhancing peripheral neural cell activity through the combination of conductive hydrogels and electrical stimulation
Jin-Xiu Yu, Feng Chia University, Chinese Taipei

P3-043 Modeling fibrosis in pro-angiogenic poly(ethylene glycol) diacrylate hydrogels
Sam Agro, University of Virginia, USA

P3-044 Bacteria-laden hydrogels for 3D-printing of functional biomaterials
Amy Gullins, University of New South Wales, Australia

P3-045 Magnetically responsive injectable gellan gum-based hydrogel for aligned tissue regeneration
Arianna Rossi, Institute of Science, Technology and Sustainability for Ceramics, National Research Council of Italy, ISSMC-CNR and University of Messina; Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, Italy

P3-046 Mechanical Enhancement of Injectable Dual-crosslinked Hydrogels with Ultrasound for Biomedical Applications
Chen-Jie Yan, National Taiwan University/ Institute of Polymer Science and Engineering, Chinese Taipei

P3-047 Injectable thermo-responsive hydrogel for the treatment of tendon injuries
Komal Joshi, Indian Institute of Technology Bombay, India
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P3-048 Being a target for glycation by methylglyoxal contributes to therapeutic efficacy of injectable collagen hydrogels post-myocardial infarction
Xixi Guo, University of Ottawa Heart Institute, Canada

P3-049 A novel water-insoluble chitosan hydrogel: Green fabrication method and copper(II) chelation capability
John Rey Romal, Iowa State University/Grand View University, USA

P3-050 Formation of Immobilised Thin Film Hydrogel Layers to Address Issues of Tissue Culture Platform Stiffnesses
Sophia Franklin, School of Biomedical Engineering, University of Sydney, Sydney, Australia, Australia

P3-051 The influence of strontium- and zinc-doped calcium-rich silicate bioactive glasses on the chitosan-based injectable hydrogels
Szymon Salagierski, Department of Glass Technology and Amorphous Coatings, AGH University of Science and Technology, Krakow, Poland, Poland
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P3-052 Electron beam sterilization of polysaccharides: effects on carboxymethyl chitosan and pyraldehyde and their hydrogel properties after irradiation
Yuan Huili, Zhejiang University of Technology, China

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P3-053 Design and fabricate functional hydrogels for tissue engineeringDesign and fabricate functional hydrogels for tissue engineering
Ying Yang, Keele University, United Kingdom

P3-054 Guar gum-based hydrogels as a potential drug carrier for controlling the release of hydrocortisone
Adley Forti Rubira, Maringá State University, Department of Chemistry, Brazil

P3-055 Platelet lysate loaded thermosensitive injectable hydrogels as topical treatment of chronic skin wounds
Simona Bronco, IPCF-CNR (Pisa), Italy

P3-056 Fabrication of Luminescent Polydextran/hydroxyapatite Nanocomposite Hydrogels with Tailorable Metal-ligand Coordination Crosslinking
Yu-Chia Su, National Taiwan University, Chinese Taipei

P3-057 Hydrogels for Immuno-Privileged Transplantation of Therapeutic Cells
Harald Stover, Allarta Life Science Inc., Hamilton, Ontario, Canada, Canada

P3-058 Ionic conductive hydrogels based on deep eutectic solvent and N-acryloylglycinamide
Xinyue Zhang, Harbin Engineering University, China

P3-059 Glucose as a Stimulus for Dynamic Crosslinking of Injectable and Shape-adaptive Hydrogel Scaffolds for Bone Tissue Regeneration
Birzhan Abdikhan, Nazarbayev University, Kazakhstan

P3-060 Strong tough super-structured porous hydrogel for dynamic soft tissue repair
Weiwen Liang, The Sixth Affilicated Hospital, Sun Yat-sen University, China

P3-061 A gelatin-based nanocomposite hydrogel for the sustained delivery of small-molecule therapeutics
Aishik Chakraborty, The University of Western Ontario, Canada

P3-062 Enhancing Adipose Tissue Survival: A Novel Approach Using PRP-Based Bioinks in Regenerative Medicine
Hanan Jamal Mohamed, UNIST | Ulsan National Institute of Science & Technology, Korea, Republic of

P3-063 Development of Aloe Vera-based 3D Bioprinted Cell-Laden Constructs with Antibacterial effects for Wound Healing
Seonghyun Lee, Department of Biotechnology and Bioinformatics, Korea University, Korea, Republic of

P3-064 Development of fibrous tissue scaffolds via 3D printing with jammed microfiber
KOOKIN YOUN, Incheon national univ., Korea, Republic of

P3-065 3D Bioprinting of Biomaterials for Artificial Ovary Fabrication: Strategies for Enhancing Fertility Preservation
Gyubok Lee, Department of Applied Bioengineering, Graduate School of Convergence Science and Technology, Seoul National University, Seoul, Korea, Republic of

P3-066 High-resolution coaxial hydrodynamic spinning for multiscale tissue-engineered scaffolds.
GyeongMi Lee, Industry 4.0 Convergence Bionics Engineering, Pukyong National University, Busan 48513, Republic of Korea, Korea, Republic of

P3-067 Assessment of printability and physical characteristics of polycaprolactone composite bone scaffolds using low-temperature suspended 3D printing
Juhyun Kang, Department of Biomedical Engineering, Pukyong National University, Busan 48513, Republic of Korea, Korea, Republic of

P3-068 Elastography-assisted biofabrication for enhanced control of the elasticity of tissue-engineered constructs
Garin Kim, Industry 4.0 Convergence Bionics Engineering, Pukyong National University, Busan 48513, Republic of Korea, Korea, Republic of

P3-069 Fatigue Behaviors of Bioinspired Auxetic Structures for Biomedical Applications
Masoud Shirzad, Industry 4.0 Convergence Bionics Engineering, Pukyong National University, Busan 48513, Republic of Korea, Korea, Republic of

P3-070 Bioinspired Hierarchical Design of Gradient Tendon-to-Bone Scaffolds
Masoud Shirzad, Industry 4.0 Convergence Bionics Engineering, Pukyong National University, Busan 48513, Republic of Korea, Korea, Republic of

P3-071 Prediction of Printing Resolution using Rheology-Informed Hierarchical Machine Learning
Dageon Oh, Industry 4.0 Convergence Bionics Engineering, Pukyong National University, Busan 48513, Republic of Korea, Korea, Republic of

P3-072 Fabrication of Multiscale Microchannels using Sequential Extrusion-Based Bioprinting for Vascularized Tissue-Engineered Constructs
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P3-073 Modified Bioprinting Process for Efficient Cellular Alignment and Myotube Formation
Gaeun Heo, Sungkyunkwan University School of Medicine, Korea, Republic of

P3-074 Bespoke Bioprinting of Stem Cell-derived Islets and Vascular Network within the Engineered Pancreatic Niche for Studying Diabetic Diseases
Myungji Kim, POSTECH, Korea, Republic of

P3-075 Enhancing the stress durability of 3D bioprinted tissues using sequential crosslinking of bioinks
Minji Kim, Pohang University of Science and Technology (POSTECH), Korea, Republic of

P3-076 3D Bioprinted Vascularized Tubular Bile Duct Conduits
Seon-Jin Kim, School of interdisciplinary bioscience and bioengineering, Pohang University of Science and Technology, Korea, Republic of

P3-077 Development of the hydrogel fiber covered with 3D cell aggregates using 3D bioprinting system assisted with cell-coating technique
SooJung Chae, Department of Precision Medicine, Sungkyunkwan University, Korea, Republic of

P3-078 3D bioprinting of an in vitro blood vessel model with geometrical diversity for cancer metastasis study
Wonbin Park, Pohang University of Science and Technology, Korea, Republic of

P3-079 Colloidal gels for 3D printing application
Rong Wang, Radboudumc, Netherlands

P3-080 Gellan gum-based granular gels as suspension media for biofabrication
Ferry Melchels, University of South Australia, Australia

P3-081 Drug-Coated Microneedle Balloons for Enhanced Delivery of Anti-Proliferative Agents to Vascular Tissue
Mei-Chin Chen, National Cheng Kung University, Chinese Taipei

P3-082 Nano-fiber reinforced hydrogels for 3D bioprinting of anisotropic tissue
Elena Marcello, Politecnico di Torino, Italy

P3-083 Advancing 3D Bioprinting: Development of a Water-Soluble, Photo-cross-linkable Collagen Bioink for Enhanced Tissue Engineering
Wei-Bor Tsai, National Taiwan University, Chinese Taipei

P3-084 A defined methacryloyl modification gelatin hydrogel, the story of gelatin and formulation factors influencing the hydrogel properties
Jos Olijve, Rousselot B.V., Netherlands

P3-085 Investigation of bioink preparation containing decellularized tissue powder for construction of cancer microenvironment
Mako Kobayashi, Department of Materials Processing, Graduate School of Engineering, Tohoku University, Japan

P3-086 Peptide-Dendrimer-Reinforced Bioinks for 3D Bioprinting
Hongli Mao, Nanjing Tech University, China

P3-087 Xeno-free and photocurable nanocellulose-based macroporous-gel bioprinting in service of 3D cell culture
Xiaoju Wang, Laboratory of Natural Materials Technology, Faculty of Science and Engineering, Åbo Akademi University, Henrikinkatu 2, Turku, 20500, Finland, Finland

P3-088 Revolutionizing In Vivo Screening: A High-Throughput 3D-Printed Platform for Investigating Bioink Materials and Cell Formulations
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Fan Zhang, University of Washington, USA

P3-089 Enhancing 3D bioprinting capabilities of hyaluronic acid hydrogels leveraging dynamic and non-dynamic crosslinking
Shima Tavakoli, Uppsala University, Sweden

P3-090 Towards a bionic lobule-like liver tissue
Paula de Dios Andres, Aarhus University, Denmark

P3-091 Optimization of Alginate and Gelatine bioink composition for 3D proliferation, 3D differentiation of myoblast and bioprinting
Thirumaran Thanabalu, Nanyang Technological University, Singapore

P3-092 Methacrylated hyaluronic acid and periosteum-derived cell spheroid bioink towards subchondral bone tissue engineering through the endochondral ossification pathway
Ane Albillos, MERLN Institute for Technology-Inspired Regenerative Medicine, Maastricht University, Complex Tissue Regeneration Department, 6229 ER, Maastricht, The Netherlands, Netherlands

P3-093 Embedded 3D bioprinting of collagen inks into microgel baths to control hydrogel microstructure and cell phenotype
Lucia Brunel, Stanford University, USA

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P3-094 Microfluidic bioprinting of hiPSC-derived progenitors to produce renal organoids
Gabriele Addario, MERLN - Maastricht University, Netherlands

P3-095 Optimizing extrusion bioprinting with decellularized ECM bioinks: a comprehensive rheological approach for bridging material properties to extrusion dynamics and thixotropy
Soham Ghosh, Indian Institute of Technology Hyderabad, India

P3-096 Precision Biofabrication for Meniscal Tissue Engineering: Leveraging MEW and Microvalve Bioprinting to enable tunable Mechanical and Cellular Gradients.
Fraser Shields, Division of Cell Matrix Biology & Regenerative Medicine, University of Manchester, United Kingdom

P3-097 Development of a one-step process for pure collagen scaffold bioprinting
Sara Palladino, Laboratory for Biomaterials and Bioengineering, (CRC-Tier I), Dept Min-Met-Materials Eng and Regenerative Medicine, CHU de Quebec, Laval University, Quebec City, Canada, Canada

P3-098 Tunable GelMA Hydrogel of room-temperature Extrusion Bioprinting of C_2C_{12} cellular scaffolds
Zaimao Peng, Monash University, Australia

P3-099 Development of photo-click alginate hydrogels for tissue engineering and biofabrication
Matthew Mail, The University of Melbourne, Australia

P3-100 Flexink - a new PEG-tyramine-based material for coaxial printing of small-diameter vessels
Julia Siminska-Stanny, Universite Libre de Bruxelles, Belgium

P3-101 Biofabrication and Biophysical Characterization of Printed S. Typhimurium Biofilms
Annie Scutte, FAMU-FSU College of Engineering, USA

P3-102 Unveiling the relation between mechanical properties, cytocompatibility, and printability of decellularized extracellular matrix bioinks
Linglu Hong, Division of Biomedical Engineering, Department of Materials Science and Engineering, Uppsala University, Uppsala, Sweden., Sweden

P3-103 Encouraging vascular network formation in a 3D printed nipple-areola complex for post-mastectomy nipple reconstruction
Amal Shabazz, Fischell Department of Bioengineering, and University of Maryland, College Park, Maryland, USA, USA

P3-104 A volumetric approach to mimic the osteoid niche
Edward Vermeersch, Ghent University, Belgium

P3-105 Visible Light-Based 4D-Bioprinted Tissue Scaffold
Sriram Bharath Gugulothu, Indian Institute of science, India

P3-106 A novel bioink to create vascularized structures harnessing microfluidic bioprinting
Efsun Senturk, 3D Microfluidic Bioprinting Lab, Center for Life Nano- & Neuro-Science (CLN2S), Italian Institute of Technology (IIT), 00161 Rome, Italy, Italy

P3-107 Development of Alginate-Based Bioinks to Model Prostate Cancer in vitro
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P3-108 3D-bioprinted liver tissue model for testing the activity and cytotoxicity of drugs - revolution in preclinical testing of oncological drugs
Marta Klak, Polbionica sp. z o.o., Poland

P3-109 Effect of crosslinking agents in bioinks on corneal cell viability
Li Jiang, Tianjin Eye Hospital, Tianjin Key Lab of Ophthalmology and Visual Science, Nankai University Affiliated Eye Hospital, China

P3-110 Engineering Biointeractive Biomaterials and Therapeutics Technologies for Biomedical Applications
Sohyung Lee, Harvard University, USA

P3-111 RGD and Hep II domains on the surface of MSCs-derived extracellular vesicles for the differentiation of hiPSCs into MSCs
Jiseong Kim, Dongguk University, Korea, Republic of

P3-112 Engineered chemothermal magnetic nanoparticles: Drug release and kinetics models from thermoresponsive polymeric gates coated SPIONs for cancer therapy
Abdelrahman I. Rezk, Department of Physiology, Jeonbuk National University Medical School, Jeonju-si 54907, Republic of Korea., Korea, Republic of

P3-113 Engineered Nanovesicles for Theranostics in Atherosclerosis
Jeong-Kee Yoon, Chung-Ang University, Korea, Republic of

P3-114 Oral delivery of bilirubin nanoparticles ameliorates non-alcoholic steatohepatitis
Afia Tasnim Rahman, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

P3-115 Scaling up the production of functional MSC-derived exosomes to facilitate cartilage tissue regeneration using a 3D culture system with microparticles
Hyoeun Park, Dongguk University, Korea, Republic of

P3-116 Design of PD-L1-targeted lipid nanoparticles to turn on PTEN for efficient cancer immunotherapy
Yelee Kim, Korea Institute of Science and Technology, Korea, Republic of

P3-117 Enhancing Oral Bioavailability of Peptide-Conjugated Antitumor Prodrugs with Milk-Derived Exosomes
Hochung Jang, Korea Institute of Science and Technology (KIST), Korea, Republic of

P3-118 Functionalized extracellular vesicles elevate neuronal differentiation of neural progenitor cell
So-yeon Park, CHA University, Korea University, Korea, Republic of

P3-119 Enhancing the secretion and functionality of extracellular vesicles (EVs) with 3D culture and stimulations of cells in chemically defined media
Jun Yong Kim, CHA university, Korea, Republic of

P3-120 3D modeling-guided cyclization of tagged proteins for efficient delivery into cells and extracellular vesicles
Yeonju Lee, Department of Life Science, Hanyang University, Korea, Republic of

P3-121 항체 결합 융합 단백질 기반 세포 표면 공학 시스템을 이용한 HER2 양성 암 치료 강화
Chaeseon Kim, Department of Smart Health Science and Technology convergence, College of ACE, Kangwon National University, Chuncheon, Korea, Republic of

P3-122 Microneedle-assisted lymphatic delivery of a natural immune modulator toxin for enhanced cancer immunotherapy
Suyeon Lim, Sungkyunkwan University, School of pharmacy, Korea, Republic of

P3-123 Fine-Tuning Liposomal Membrane Elasticity for Improved Biodistribution and Anti-Inflammatory Efficacy in Systemic Rheumatoid Arthritis Treatment
Dahwun Kim, Sungkyunkwan University, Korea, Republic of

P3-124 Application of Microneedle-directed drug delivery in Lymph Nodes for Tumor Chemoimmunotherapy for metastatic cancer
BYUNG DEOK KIM, Sungkyunkwan university, School of pharmacy, Korea, Republic of

P3-125 Healing Patch: Copolymerization of a Regenerative Drug During Microneedle Production for Targeted Tissue Regeneration
Solbi Park, Kyungpook National University, Korea, Republic of

P3-126 Controlling Drug Release Kinetics via Polydopamine Nanocarriers of Different Sizes
Hyeju Han, Department of Chemistry and Green-Nano Materials Research Center, Kyungpook National University, Korea, Republic of

P3-127 Development of an adapter Chimeric Antigen Receptor (CAR) system using recombinant fusion CAR protein with antibody binding domain
Suyeon Lim, Department of Smart Health Science and Technology convergence, College of ACE, Kangwon National University, Chuncheon, 24341, Republic of Korea, Korea, Republic of

P3-128 Nanoparticles capable of combating multidrug-resistant tumor cells
Young A KIM, The Catholic University of Korea, Korea, Republic of

P3-129 Kinetically activating nanoadjuvant that dynamically coordinates innate immune stimuli enhances cancer immunotherapy and reduces immune cell exhaustion
Seung Mo Jin, Sungkyunkwan University, Korea, Republic of

P3-130 Overcoming Gene Payload Limitation of Adeno-Associated Virus: Supra-structured AAVs Constructed by Polyphenols
Yu Ri Nam, KAIST, Korea, Republic of

P3-131 Fe3O4-based magnetic electrospun nanofiber incorporated with ammonium bicarbonate for hyperthermia treatment and tumor-triggered controlled drug release
Quynh Quang Nhat Vo, Jeonbuk National University, Korea, Republic of

P3-132 Patient convenience improved gene therapy to Manage hyperglycemia in Type 2 diabetes
Jeong Man An, Hanyang University, Korea, Republic of

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P3-133 Tumor microenvironment-responsive exosomes for mitochondria-targeted sonodynamic therapy and cellular energy-depleting chemotherapy
Binh T. T. Pham, Department of Nano-Bioengineering, Incheon National University, Korea, Republic of

P3-134 Amplification of production yield and therapeutic efficacy of extracellular vesicles from stem cells via uniformly controlled shear stress
Wu Young Kang, Department of Biomedical & Robotics Engineering, College of Engineering, Incheon National University, Incheon 22012, Republic of Korea, Korea, Republic of

P3-135 Exosomes from epidural fat-derived immortalized MSCs increase osteoblast differentiation
Yoing-Ju Lim, Department of Orthopedic Surgery, Yeungnam University Medical Center, Yeungnam University College of Medicine, Korea, Republic of

P3-136 An Antibody-CRISPR/Cas Conjugates Platform for Target-Specific Delivery and Gene Editing in Cancer
Seungju Yang, Department of Biological Sciences, Korea Advanced Institute of Science and Technology, Korea, Republic of

P3-137 Modeling of ECM-mimicking system using elongated iron-based magnetic nanomaterials for modulating immune response mechanism
Nayeon Kang, Korea University, Korea, Republic of

P3-138 Tumor-draining lymph node-targeted delivery of TLR7/8 agonist via sphingomyelin nanoparticles for improved cancer vaccination
Hyeonjeong Han, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

P3-139 Proteomic profiling of circulating plasma extracellular vesicles unveils novel sarcopenia biomarkers in humans
Jiyeon Kim, Department of Biomedical Sciences, Korea University College of Medicine, Korea, Republic of

P3-140 Development of LNP-Exosome hybrid system for targeted pancreas $KRAS^{G12D}$ oncogene silencing and its application toward gemcitabine chemotherapy
Heewon Park, Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

P3-141 Anti-inflammation effect of polyethylene glycol-phospholipid nanoparticles by regulating macrophage polarization
Sun Woo Um, Seoul National University, Korea, Republic of

P3-142 Dynamic manipulation of submolecular ligand availability for immunoregulation of macrophage
Yuri Kim, Korea University, Korea, Republic of

P3-143 Treatment of severe infectious respiratory diseases via DNase-1 coated 25-hydroxycholesterol nanovesicle mediated sivelestat delivery
Donghyuk Seo, Department of Chemistry, College of Science, Sungkyunkwan University, Korea, Republic of

P3-144 Antifouling mesoporous organosilica nanoparticles for cancer therapy: inhibition of protein corona formation
Gyeongseok Yang, Ulsan National Institute of Science and Technology (UNIST), Korea, Republic of

P3-145 Novel drug development system: Development of an electrical cell viability monitoring device based on drug-loaded cancer cell targeting aptamer
Nayeon Kwon, Kwangwoon University, Korea, Republic of

P3-146 CRISPR-based genome editing and delivery of indoximod on both tumor-cell and tumor-associated macrophage for reversal of cancer immunosuppression
Seungcheol Kim, KAIST, Korea, Republic of

P3-147 Elevating Treatment Response Monitoring in Cancer Immunotherapy: Avidity-Based PD-L1-Exosome Capture with Dendrimer-Peptide Conjugates
Dongjun Shin, Department of Biological Sciences and Bioengineering, Inha University, Korea, Republic of

P3-148 Laser triggered nitric oxide releasing hydrogel strengthens antitumor immune response through tumor collagen depletion during NIR laser assisted photoimmunotherapy
Adityanarayan Mohapatra, Chonnam National University, Korea, Republic of

P3-149 A study on the possibility of drug delivery biomaterials using porous structures of diatom
Daeryul Kwon, Kor./NNIBR, Korea, Republic of

P3-150 Bi-specific Chimeric Antigen Receptor Augments NK-92 Immune Cell Therapy for Ovarian Cancer
Jee Young Chung, CHA Advanced Research Institute, Korea, Republic of

P3-151 Effective Delivery of CRISPR/Cas9 Ribonucleoprotein Using Controlled Ionizable Lipid Nanoparticles for Gene Editing
San Hae Im, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

P3-152 Artificial antigen presenting cell elasticity modulates CD8+ T cell activation, macrophage uptake, and protein corona
Jordan Green, Johns Hopkins University, USA

P3-153 Immune engineered extracellular vesicles to modulate T cell activation in type 1 diabetes
Edward Phelps, University of Florida, USA

P3-154 Inflammation-controlled anti-inflammatory hydrogels
Manfred Maitz, Leibniz Institute of Polymer Research Dresden, Germany

P3-155 A cooling agent delivery hydrogel for adipocyte browning in the treatment of obesity and obesity-related diabetes
Yu-Jung Lin, Academia Sinica, Chinese Taipei

P3-156 IL-10 and BMP-7 enhance the osteoconductivity of collagen-hydroxyapatite scaffolds through immunomodulation of the blood-biomaterial interaction
William Lackington, Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland

P3-157 Whey protein isolate-based microspheres and films used in controlled release
Justyna Kozlowska, Nicolaus Copernicus Univerity in Torun, Poland

P3-158 In situ PEGylation of CAR T cells alleviates cytokine release syndrome and neurotoxicity
Michael Mitchell, University of Pennsylvania, USA

P3-159 CRISPR-based *in vivo* gene therapy for osteoarthritis: utilizing slow-release hybrid exosomes for chondrocyte-targeted FOXO3 gene-editing to activate mitochondrial autophagy
Qiguang Wang, Sichuan University, China

P3-160 Biomimetic Mineralization Materials for Cell Function Regulation in Cancer Therapy
Ruibo Zhao, Institute of Smart Biomedical Materials, School of Materials Science and Engineering, Zhejiang Sci-Tech University, Hangzhou 310018, China, China

P3-161 Bioinspired glycopeptide hydrogel as immunomodulatory niche for tissue repair
Weiwei Wang, Institute of Biomedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College, China

P3-162 Evaluation of proinflammatory response to polymeric materials using a genetically-modified macrophage cell line with luminescent peptide
Tsuyoshi Kimura, Tokyo Medical and Dental University, Japan

P3-163 Exposure to hydroxyapatite nanoparticles enhances the responsiveness of immune cells to TLR agonist and promotes TLR agonist-mediated anti-tumor immunity
Qin Zeng, Sichuan University, China

P3-164 Immunomodulatory effect of SCPC bioactive ceramic promotes wound healing and muscle tissue regeneration
Ahmed El-Ghannam, University of North Carolina at Charlotte, USA

P3-165 Response of Lymphocytes to Biomaterial Treated Skeletal Muscle Injury
Daphna Fertil, National Institute of Health/NIBIB, USA

P3-167 Understanding biomaterial effects on macrophage-based cell therapies for volumetric muscle loss
Samuel Sung, Drexel University, USA

P3-168 Polymeric mRNA Nanoparticles Reprogram Dendritic Cells and Induce Immune Tolerance
Sarah Neshat, Johns Hopkins University, USA

P3-169 Pancreatic Tumor-Derived Extracellular Vesicles Stimulate Schwann Cell Activation and Perineural Invasion via IL-8 Signaling
Emory Gregory, University of Arkansas, USA

P3-170 Hydrogel interference with extracellular vesicle quantification methods - implications for assessing EV release from hydrogels
Hannah Aris, University of Galway, Ireland

P3-171 Coiled-coil peptide nanofibers as a platform for a dual-target active immunotherapy against complement anaphylatoxins.
Helena Freire Haddad, Duke University, USA

P3-172 Endogenous Antiviral Properties of Red Blood Cell-Derived Extracellular Vesicles and Their Augmentation of Antiviral Oligonucleotide Therapy
Chang Gao, National University of Singapore, Singapore

P3-173 Molecular tuned extracellular blebs for improved vaccination and intracellular delivery
Olivia Ritchie, University of California, Irvine, USA

P3-174 Multimodal gene therapy for cancer in combination of targeted therapeutics
Rebecca Lee, University of California Irvine, USA

P3-175 Cellular delivery of mRNA using hyaluronic acid-coated polymeric micelles
Yuichi Kuwano, Kansai University, Japan

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P3-176 Role of extracellular vesicles in advanced negative pressure wound therapy
Lin Yu-Chen, National Cheng Kung University, Chinese Taipei

P3-177 Conjugation of IL-33 to microporous annealed particle scaffolds enhances the type 2 immune response
Colleen Roosa, University of Virginia, USA

P3-178 Injectable microgels with hybrid exosomes of chondrocyte-targeting FGF18 gene-editing and self-renewable lubrication synergistically mitigate osteoarthritis progression
Manyu Chen, Sichuan university of China, China

P3-179 Immunoregulatory hybrid microchannels reinforce endogenous bone regeneration by regulating the CSF-1/CSF-1R pathway of macrophages
Xing Li, Sichuan university, China

P3-180 Microfluidic-based gene delivery to T cells and applications on triple-negative breast cancer therapy
Yi-Hsuan Tung, National Tsing Hua University, Chinese Taipei

P3-181 Profiling heart-specific exosomes to enable research of cardiovascular disease
Rosie Kao, National Taiwan University of Science and Technology, Chinese Taipei

P3-182 Design of cell nuclear nanotransporters by importin mimicry and application in nuclear-targeting DDS
Soma Kawashima, Konan university, Japan

P3-183 Enabling Rapid Extracellular Vesicle Isolation from Cell Culture Media by Osmosis
Casey Huang, National Taiwan University of Science and Technology, Chinese Taipei

P3-184 pH-driven pure dual-drug self-assembly decodes extracellular matrix regulation to repress breast cancer progression and metastasis
Lei Lei, National Engineering Research Center for Biomaterials, College of Biomedical Engineering, Sichuan University., China

P3-185 Mechanical communication between immune cells and artificial cells
Xiaolei Yu, State Key Laboratory of Metal Matrix Composites, School of Materials Science and Engineering, Zhangjiang Institute for Advanced Study (ZIAS), Shanghai Jiao Tong University., China

P3-186 Activation of TLR2 signaling via interfacial structures of chitin nanofiber/TEMPO-oxidized cellulose nanofiber hybrid biomaterials
Risa Hatase, Kyushu University, Japan

P3-187 Engineering and fabrication of immunomodulatory lipid nanoparticles (LNPs) for mRNA delivery to modulate Microglial cell activation
Mehrnoosh Rafiei, HKUST, Hong Kong SAR, China

P3-188 Apoptotic Cell Inspired Immune Modulatory Hydrogels and its Therapeutic Potential in Inflammatory Diseases
Gyeongwoo Lee, National Institute for Materials Science, Japan

P3-190 Harnessing the immmunomicroenvironment of pressure ulcer by an elastin-based hydrogel
Huanhuan Wan, The Seventh Affiliated Hospital, Sun Yat-sen University, China

P3-191 Novel immunomodulatory bladder cell surface engineering approach for the treatment of interstitial cystitis/ bladder pain syndrome
Peyman Malek mohammadi nouri, Department of Pathology and Laboratory Medicine, University of British Columbia, Canada

P3-192 Manipulating nutrient availability to boost functional extracellular vesicle production in immune cells
Yizhuo Wang, West China Hospital of Sichuan University, China

P3-193 Peritoneal macrophage-derived extracellular vesicles: a new multi-target therapy for inflammatory disease
Yizhuo Wang, West China Hospital of Sichuan University, China

P3-194 Development of Multifunctional Gold Nanoparticles for Reprogramming Tumor-associated Macrophages Combined with Photodynamic Immunotherapy
Ting-Yu Cheng, Department of Photonics, National Cheng Kung University, Chinese Taipei

P3-195 Sugar-mediated green synthesis of immunoregulating and imageable nanoparticles facilitating therapeutic efficacy of immune checkpoint inhibitor on aggressive cancer (GBM&pancreatic)
Yu-Cheng Chin, Department of Photonics, National Cheng Kung University, Tainan, Taiwan, Chinese Taipei

P3-196 The Effect of Brain Organoid-Derived sEVs on Migration and Metastatic Adaptation of Breast Cancer Cells through a Microphysiological Model
Hojjatollah Nazari, University of Technology Sydney, Australia

P3-197 pcMSCs-derived biomaterial promoting stem cell reprogramming and suppressing inflammatory condition in LPS-induced ALI/ARDS model
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Kajal Singh, Taipei Medical University, Chinese Taipei

P3-198 Bispecific, exosome-mimetic lipid nanoparticles facilitate dual siRNAs for synergistic therapy against pancreatic cancer
Zhen Zhang, Tsinghua Shenzhen International Graduate School, Tsinghua University, China

P3-199 Magnetic Nanoparticles to Achieve On-demand Drug Release Triggered by Diels-Alder Reaction
Nanami Fujisawa, National Institute for Materials Science, Japan

P3-200 3D-printed scaffold with halloysite nanotubes laden as a sequential drug delivery system regulates vascularized bone tissue healing
Jingyuan Ji, Tsinghua University, China

P3-201 New insights into the therapeutic potentials of extracellular vesicles from red blood cells
Minh Le, National University of Singapore, Singapore

P3-202 Anti-PEG antibodies can induce hypersensitivity reactions against pegylated medicines by activating innate immune cells
Bing Mae Chen, Academia Sinica, Chinese Taipei

P3-203 Subconjunctival injection of DSP-NP for nitrogen mustard induced corneal injury
Qingguo Xu, Virginia Commonwealth University, USA

P3-204 Smart tumour microenvironment-responsive polymeric nanoparticles for combinatorial chemo-immunotherapeutic delivery in head and neck squamous cell carcinoma
Santhosh Kalash Rajendrakumar, University of Warwick, United Kingdom

P3-205 Diblock cationic polymers for gene delivery in colorectal cancer
Ji-inn Song, University of Warwick, United Kingdom

P3-206 Production of functional exosomes released from epigenetically modified cancer cells
Kiyoshi Sato, Department of Applied Chemistry, Graduate School of Urban Environmental Sciences, Tokyo Metropolitan University, Japan

P3-207 Engineering Exosomes For Peripheral Nerve Targeted Delivery
Bin Duan, University of Nebraska Medical Center, USA

P3-208 Bioresponsive and immunotherapeutic nanomaterials to remodel tumor microenvironment for enhanced immune checkpoint blockade
Guojun Chen, McGill University, Canada

P3-209 Injectable cold atmospheric plasma-activated immunotherapeutic hydrogel for enhanced cancer treatment
Guojun Chen, McGill University, Canada

P3-210 Artificial Biosystem for Modulation of Interactions between Antigen-Presenting Cells and T Cells
Jeremy Teo, New York University Abu Dhabi, United Arab Emirates

P3-211 Cell-secreted extracellular matrix nanoparticles restore endothelial barrier function
Jae-Won Shin, University of Illinois at Chicago, USA

P3-212 Transfection Efficacy and Cellular Uptake of Lipid-Modified Polyethyleneimine Derivatives for Anionic Nanoparticles as Gene Delivery Vectors
Amarnath Rajendran, Department of Chemical & Materials Engineering, University of Alberta, Edmonton, Canada, Canada

P3-213 Composite hydrogels of crosslinked collagen doped with Si-O/Si-Si nanoparticles to model the 3D macrophages polarization.
Birzabith Mendoza-Novelo, Universidad de Guanajuato, Mexico

P3-214 Neutrophil-Material Interactions: Exploring Inflammatory Responses and Coating Effects
Ezgi Irem Bektas, AO Research Institute, Switzerland

P3-215 Multifunctional Immunotherapy Nanoparticle for Targeted Therapy of Cancer Patients with Comorbid Atherosclerosis
Lei Zhu, Emory University, USA

P3-216 A surgically optimised intraoperative immunotherapy-releasing hydrogel prevents cancer recurrence
Joost Lesterhuis, Telethon Kids Institute, University of Western Australia, Australia

P3-217 Novel method for preparation of drug-loaded micelles from semi-crystalline block copolymer
Rae Hyung Kang, University of Wisconsin-Madison, USA

P3-218 Co-delivery of capsaicin and immune checkpoint inhibitor for enhancing cancer immunotherapy
Kuan-Lin Wang, Research Center for Applied Sciences, Academia Sinica, Chinese Taipei

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P3-219 Assessing the *in Vivo* Efficacy of Tobramycin EEG Dry Powder Aerosol in Pseudomonas aeruginosa Induced Lung Infection Model
Rudra Pangeni, Virginia Commonwealth University, USA

P3-220 A biology-structure-mechanics investigation of joint cartilage for OA diagnosis and therapy using mRNA medicine
Jun Zhou, Tokyo Medical and Dental University, Japan

P3-221 Intranasal mask for protecting the respiratory tract against viral aerosols
xiaoming hu, Institute of Process Engineering, Chinese Academy of Sciences, China

P3-222 Balancing the Nanoscale Organization in Multivalent Materials for the Functional Inhibition of the Immune Checkpoint PD-1
Kaltrina Paloja, École Polytechnique Fédérale de Lausanne (EPFL), Switzerland

P3-223 Construction of novel microsized adjuvants using polysaccharide nanofibers via Pickering emulsion
Qi Li, Kyushu University, Japan

P3-224 Exosomes Reprogramed Atherosclerotic Plaque Cells and Enhanced the Efferocytosis of Apoptotic Cells
Dan ZOU, XiHua University, China

P3-225 Peptide-mediated Aqueous Synthesis of NIR-II Emitting Ag_2S Quantum Dots for Photocatalytic Applications
Wei Wei, Nanjing University, China

P3-226 Versatile light-actuated silk fibroin biocomposites for tissue-interfacing applications
Vamsi Yadavalli, Virginia Commonwealth University, USA

P3-227 Biomimetic upconversion nanoplatform for NIR-guided thrombolytic therapy of ischemic stroke
Xu Wang, Tianjin Medical University, China

P3-228 A biomimetic upconversion nanomotor driven by near-infrared light/hydrogen peroxide for the inhibition of Alzheimer's disease
Xu Wang, Tianjin Medical University, China

P3-229 Enhancing Immunomodulation by Novel Glycoconjugate -Based Organ Engineering to Prevent Transplant Rejection
Peyman Malek Mohammadi Nouri, Department of Pathology and Laboratory Medicine, The University of British Columbia, Canada

P3-230 Isolation of metastatic breast cancer cell by pH-responsive chitosan
Shin-Yu Shih, Department of Biomedical Engineering, College of Medicine and College of Engineering, National Taiwan University, Chinese Taipei

P3-231 A biodegradable magnesium alloy promotes subperiosteal osteogenesis via interleukin-10-dependent macrophage immunomodulation
Liangwei Chen, Peking Univerisy School and Hospital of Stomatology, China

P3-232 Matrix alignment and density modulate YAP-mediated T-cell immune suppression
Jiranuwat Sapudom, New York University Abu Dhabi, United Arab Emirates

P3-233 Molecular weight of matrix-bound hyaluronic acid as a regulator of dendritic cell immune potency
Jiranuwat Sapudom, New York University Abu Dhabi, United Arab Emirates

P3-234 Backflow reduction in local injection therapy with gelatin formulations
Kazuki Kotani, Development & Sales Team, Biomedical department, R&D Center, Nitta Gelatin Inc., Japan

P3-235 Plasmonic biosensors for Alzheimer's disease diagnosis by using star-shape gold nanoparticles and graphene oxide
Sangho Bok, University of Denver, USA

P3-236 Biodegradable Hybrid Scaffold with Polydeoxyribonucleotide /Bone Morphogenetic Protein-2 Nanocomplex using Human Fetal derived Mesenchymal Stem Cells for Bone Tissue Regeneration
Jun-Kyu Lee, CHA University, Korea, Republic of

P3-237 Improving functionality of biodegradable vascular stent through continuous No dual-generation by ZnO nanoparticle conjugated with α-lipoic acid
Seung Woon Baek, Department of Biomedical Science, CHA University, 335 Pangyo-ro, Bundang-gu, Seongnam-si, Gyenggi 13488, Korea, Korea, Republic of

P3-238 Functional HA filler loaded with PLLA-based microparticles that regulates collagen production and angiogenesis
SEMI LEE, CHA university, Korea, Republic of

P3-239 Functionalized scaffold with renal differentiation factors -incorporated extracellular vesicles and intermediate mesoderm for kidney regeneration
Park jeong min, Cha, Korea, Republic of

P3-240 PLGA microspheres with magnesium hydroxide and vitamin D for calcium sulfate hemihydrate-based bone paste
Ji-Won Jung, cha university, Korea, Republic of

P3-241 Stereocomplex microparticles and surface-modified magnesium hydroxide for improved mechanical properties and anti-inflammatory effects of PLLA composite
Jun Hyuk Kim, CHA university, Korea, Republic of

P3-242 3D-structured multi-functional decellularized extracellular matrix (dECM) for vascularized bone reconstruction
Seung Jae Huh, Hanyang University, Korea, Republic of

P3-243 Development of Polydeoxynucleotide-Loaded and visible light photo-crosslinked Gelatin Methacrylate (GelMA) Hydrogel for Cartilage Tissue Engineering
Sunjae Park, Jeonbuk national university, Korea, Republic of

P3-244 Biomineralized mesenchymal stem cell derived extracellular matrix prompts osteogenesis and bone regeneration
Jae Won Kwon, Korea Institute of Science and Technology (KIST), University of Science and Technology (UST), Korea, Republic of

P3-245 Human mesenchymal stem cell-derived extracellular matrix scaffold supports 3D vasculature development
Byoungha An, Korea Institute of Science and Technology, University of Science and Technology, Korea, Republic of

P3-246 The effect of conventional and gap-electrospinning of PCL/Col/HA on MC3T3 for bone tissue engineering
Seyed Aliakbar Hosseini Toopghara, Department of Medical Engineering Joint Research, Chonnam National University, Korea, Republic of

P3-247 SDF1α-overexpressing tonsillar mesenchymal stem cell-derived exosome and edaravone-loaded scaffolds for kidney regeneration by activating GDNF/RET pathway
Seung Yeon Lee, Department of Biomedical Science, CHA University, Korea, Republic of

P3-248 Optimization of electroactive light-transmitting electrospun nanofiber material for photobiomodulation-mediated tissue engineering approach
Selestin Raja Iruthaya Pandi, BIO-IT Fusion Technology Research Institute, Pusan National University, Korea, Republic of

P3-249 Poly(ethylene glycol)-PS liposomes attenuate irradiation-induced fibrosis by inhibiting the IL-4 signaling pathway
Gyeung Mi Seon, Seoul National University, Korea, Republic of

P3-250 Assessing of osteoclast at porous hydroxyapatite ceramics with well-controlled crystallographic anisotropy and microstructure
Kitaru Suzuki, Meiji University, Japan

P3-251 A composite elastin derivative-based matrix designed for promoting bone formation, vascularization, and innervation in a bone defect model
Joëlle AMEDEE, Tissue Bioengineering Laboratory (BioTis), Inserm U1026, University of Bordeaux, Bordeaux, France, France

P3-252 The biocompatibility study of collagen scaffolds modified by selected phenolic acids
Beata Kaczmarek-Szczepańska, Department of Biomaterials and Cosmetics Chemistry, Faculty of Chemistry, Nicolaus Copernicus University in Torun, Gagarina 7, 87-100 Toruń, Poland, Poland

P3-253 Enhancing catalase-like activity of Prussian blue nanozyme by gadolinium-doping for imaging-guided antitumor amplification via photodynamic therapy and chemotherapy
Huihui Wang, Yangzhou University, China

P3-254 Manipulating bone regeneration processes through the interplay of electric field (EF) stimulation, oxygen tension, and the conductivity of scaffolds
Poh Soo Lee, Technische Universität Dresden, Germany

P3-255 Black phosphorus nanosheet-based hydrogels promotes osteogenesis effect of BMSCs through YAP-regulated metabolic reprogramming.
Fan Liu, Stomatological Hospital of China Medical University, China

P3-256 Effect of oleic acid concentration on colloid stability, mechanic properties, biocompatibility of poly(ε-caprolactone) / hydroxyapatite nanocomposite for bone regeneration applications
Cheng-Ming Tang, Institute of Oral Science, Chung Shan Medical University, Chinese Taipei

P3-257 Sequential dual-biofactor release from a composite scaffold for boosting endogenous bone regeneration
Jidong Li, Sichuan University, China

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P3-258 ~~*In Vitro* Study on the Piezodynamic Therapy with a $BaTiO_3$-Coating Titanium Scaffold under Low-Intensity Pulsed Ultrasound Stimulation~~ Withdrawal
jie chen, Kunming Medical University, China, China

P3-259 Unravelling the role of calcium phosphate topography in orchestrating osteoclastogenic events during biomaterials-driven bone regeneration
Zeinab Niloofar Tahmasebi Birgani, MERLN Institute for Technology-Inspired Regenerative Medicine, Maastricht University, Maastricht, Netherlands

P3-261 Multi-modal Regulation of Peripheral Nerve Regeneration Using Functionalized Aligned Fibrous Hydrogels
Shuhui Yang, Zhejiang Sci-Tech University, China

P3-262 Regulatory mechanisms for the orientation of bone matrix controlled by osteocyte mechanoresponses using a novel anisotropic mechano-coculture device
Tadaaki Matsuzaka, Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, Japan

P3-263 Development of a novel titanium intervertebral device for guiding oriented collagen/apatite bone matrix
Toko Mori, Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, Japan

P3-264 Artificial control of osteoblast orientation using mRNA delivery for activation of intercellular crosstalk with osteoclast
Mitsuka Saito, Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, Japan

P3-265 Microstructural evolution of electrospun microfibers for ligament tissue regeneration
Alana Chandler, University of Oxford, United Kingdom

P3-266 Creating an *in vitro* model of endochondral ossification based on collagen-hyaluronic acid hydrogel
Marina Malić, Institute of Physiology, The Czech Academy of Sciences; First Faculty of Medicine, Charles University, Czech Republic

P3-267 Conjugation of osteogenic growth peptide into plasma clot through fibrinogen-derived A-knob sequence
Hiroo Kobayashi, Kansai university, Japan

P3-268 ~~Structure and properties of 3D printed combeite bioceramic scaffolds with biomimicking leptoria phrygia coral hierarchical porous architecture~~ Withdrawal
Kesheng Zhang, Qingdao University of Technology, China

P3-269 C-176 loaded Ce DNase nanoparticles synergistically inhibit the cGAS-STING pathway for ischemic stroke treatment
ZHIXIN ZHU, Zhejiang University, China

P3-270 Unveiling the Versatility of Elastin-Like Recombinamers in Biomedicine and Nanotechnology
Pablo Rodríguez-Alonso, Technical Proteins Nanobiotechnology, S.L., Spain

P3-271 *In vitro* cell study of calcium phosphate cement-PLLA models for hard-tissue implants
Ana Grzeszczak, Division of Biomedical Engineering, Department of Materials Science and Engineering, Uppsala University, Uppsala, Sweden, Sweden

P3-272 Heterogeneous Melt Electro-Written Scaffolds for Interfacial Tissue Engineering in Dynamic Culture Environments
Finn Snow, RMIT University, Australia

P3-273 Metabolic waste clearance system by co-culture of L-lactate-assimilating cyanobacteria for sustainable cultured meat production
Shanga CHU, Graduate School of Advanced Science and Engineering, Waseda University, Japan

P3-274 Effect of biocompatible polymer coatings on the osteoblast differentiation and bone formation of titanium implants
Yasuki Kurihara, Graduate School of Engineering, Kyushu University, Japan

P3-275 A Biomimetically Inspired Collagen Meniscal Scaffold With Graduated Pore Structure
Yizhuo Wang, University of Leicester, United Kingdom

P3-276 Composite of cell and gel having hierarchical structure for artificial cartilage regeneration
Ryoma Takagi, University of Toyama, Japan

P3-277 Hierarchically interconnected porous polyetheretherketone orthopedic implant constructed by plasma postprocessing
Yuxiang Zhang, Sichuan Univ, Natl Engn Res Ctr Biomat, China

P3-278 Dynamic compression and shear induces morphologic and YAP nuclear/cytoplasmic translocation changes in human bone marrow mesenchymal stem cells (hBMSCs)

Carolina Cordeiro, AO Research Institute, Davos, Switzerland

P3-279 4D printed composite tissue engineering scaffolds for treating bone defects after bone tumor resection

Jizhuo Chen, The University of Hong Kong, Hong Kong SAR, China

P3-280 Waterborne polylactic acid-polyurethane copolymer scaffold promotes nerve regeneration by regulating energy metabolism and vascularization

Yuan Feng, Sichuan University, China

P3-281 Positively Charged Polyurethanes Scaffolds in Central Nerve Repair

Jingjing Lin, sichuan university, China

P3-282 Paracrine-based cardiac tissue protection with microstructured plga/plla scaffolds and stem cell-derived spheroids

Helen Nguyen, Graduate Institute of Biomedical Materials and Tissue Engineering, Taipei Medical University, Chinese Taipei

P3-283 Effect of the structure of an enhanced SF/SS composite scaffold on bone regeneration

Meng Li, Soochow University, China

P3-284 Engineered cell-cell and cell-matrix interactions guide neural maturation within viscoelastic matrices

Michelle Huang, Stanford University, USA

P3-285 Lymphatic Regeneration by PLGA-PEG-PLGA/LAPONITE Nanocomposite Injectable Gels and Application for Lymphedema Treatment

Dode Tatsuya, Konan University Graduate School, Japan

P3-286 Bioreactor technologies for synthetic muscle engineering

Alysha Williamson, RMIT, Australia

P3-287 3D printed gelatin/PCL/hydroxyapatite composite scaffolds: Effect of structural design and material formulation towards new strategies for bone reconstruction

chenxin wang, Sichuan University, China

P3-289 Breaking the Silence: Nano-Engineered Scaffolds for Tympanic Membrane Regeneration

Shivesh Anand, Aarhus University, Denmark

P3-290 Multimodal Hydrogel Delivery of microRNA Suppressing Astrocyte Senescence for Spinal Cord Injury Regeneration

Luo Yuyang, Tsinghua University, China

P3-291 Chitosan-fiber composite electrospinning membranes for bone regeneration

Yanmei He, National Engineering Research Center for Biomaterials, College of Biomedical Engineering, Sichuan University, Chengdu, Sichuan, 610064, China, China

P3-292 Scalable and high-throughput in vitro vibratory platform for vocal fold tissue engineering applications

Ramair Colmon, Joint Department of Biomedical Engineering UNC Chapel Hill & NC State, USA

P3-293 Advanced mimicry of blood vessel haemodynamics *in vitro*

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Timothy Mitchell, The University of Sydney, Australia

P3-294 Effects of micro-arc oxidation and hydrothermal reaction on biological properties of porous titanium alloy scaffolds

Renhua Ni, Peking University Third Hospital, China

P3-295 Nano- and micro-scale topographical regulation of osteogenesis

Shirley Ting, National Taiwan University, Chinese Taipei

P3-296 Multifunctional Fe3O4 incorporated scaffolds by 3D-Printing for eliminating Tumor and Repairing Bone Defects

Jingguang Wang, South China University of Technology, China

P3-297 Primary muscle cell expansion in alginate and dairy protein scaffolds for tissue engineering

Irfan Tahir, The University of Vermont, USA

P3-298 MicroRNAs encapsulated injectable hydrogel promotes nerve regeneration after stroke

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P3-299 Radiopaque devices for nerve repair support primary neuron and glial adhesion and myelination

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P3-300 Magnetic pHEMA-based scaffolds for connective tissue engineering

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P3-301 Bone regeneration in rabbit ulna segmental bone defects with an osteoinductive calcium phosphate ceramic

Huipin Yuan, Kuros Biosciences BV, Netherlands

P3-302 Self - Assembled Type I Collagen with Bivalent Cations proposed to Bioactive Scaffolds for Bone Tissue Engineering in Osteoporosis

Kantida Juncheed, Institute of Biomedical Engineering, Department of Biomedical Sciences and Biomedical Engineering, Faculty of Medicine, Prince of Songkla University, Hat Yai, Songkhla, 90110, Thailand., Thailand

P3-303 Vecollan® - A recombinant collagen-like protein promising for medical sponges.

Eva Loo, Evonik, Singapore

P3-304 Construction of a 3D mammary gland model using collagen microfibe

Mizuho Suzuki, TOPPAN Technical Research Institute, TOPPAN Holdings.INC, Japan

P3-305 Multicomponent biopolymer mimetics of extracellular matrix versus mimetics from decellularized tissues

Victor I. Sevastianov, The Institute of Biomedical Research and Technology, Moscow, Russia

P3-306 Radial scaffold constraint promotes vascularization of human skin equivalents

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P3-307 Hydrogel delivery of dual-therapy antibacterial agents eliminate Staphylococcus aureus infection and heal bone defects

Eunice Chee, Georgia Institute of Technology, USA

P3-308 Smart bioactive shape memory composite scaffold for enhanced bone regeneration

Sreena R, Vellore Institute of Technology (VIT), India

P3-309 Fabrication of programmable and super-bioactive intricate tissue constructs

Amit Nain, Department of Material Engineering, Indian Institute of Science, Bangalore, Karnataka 560012, India, India

P3-310 Development of biomimetic glycosaminoglycans (GAGs)-rich scaffolds

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P3-311 Enhanced dental pulp stem cell osteo/odontogenic differentiation promoted by 3D graphene/silk fibroin scaffolds

SALVADOR D. AZNAR-CERVANTES, Biotechnology Research Group, Murcia Institute for Agricultural and Environmental Research and Development (IMIDA), Spain

P3-312 3D laser texturing of titanium surface and its decoration with sol-gel silica-phosphate bioglass

Tomáš Kovářík, University of West Bohemia, Czech Republic

P3-313 Bioactive graphene oxide-functionalized self-expandable hydrophilic and osteogenic nanocomposites for orthopaedic application

QC TAN, Fourth military medical university, China

P3-314 Understanding scaffold guided bone rgeneration cellular's mechanisms of regenration upon Ca_3Si scaffod implantation through multimodal immunohistological and opticalnalyses

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P3-315 Unraveling the mechanical properties of 3D-printed bovine and synthetic hydroxyapatites bone scaffolds for bone tissue reconstruction

Maria Apriliani Gani, Bandung Institute of Technology, Indonesia

P3-316 Plasma functionalization of decellularized bovine pericardium extracellular matrix-based films for biomedical applications

Maria Elena Lombardo, Laval University, Canada

P3-317 Utilizing pCHMA Substrate for an In Vitro Spheroidal Stroke Model to Elucidate Astrocyte-Microglia Interactions

Uk Jegal, KAIST, Korea, Republic of

P3-318 Bioactive interface toward long-term implants integration to deal with periimplantitis

Michel Boissière, ERRMECe, CY Cergy Paris University, France

P3-319 Plasma bio-engineering: Precision biomimetic surface functionalisation for implantable medical devices
Behnam Akhavan, University of Newcastle, Australia

P3-320 Cell behavior on tunable surfaces of responsive polymer materials with photodimerizable groups
Takashi Miyata, Kansai University, Japan

P3-321 Responsive anticoagulant fitting of hemodialysis membranes by adsorptive binding heparin-functionalized polymer anchors
Manfred Maitz, Leibniz Institute of Polymer Research Dresden, Germany

P3-322 Cryopreservation of Red Blood Cells in Absence of Toxic Cryoprotectants via Ice Templating
Francisco Fernandes, Sorbonne University, France

P3-323 Antithrombotic mechanism of next-generation flow diverter
Akihiro Hiraki, Terumo Corporation, Japan

P3-324 Surface topography of particles modulates macrophage phagocytosis induced by particle-cell interface interactions
Xiao Zhang, Institute of process engineering, Chinese Academy of Sciences, China, China

P3-325 Investigating the influence of intermediate water on the blood compatibility of natural polymers with chitosan derivatives
Iksung Cho, Kyushu University, Japan

P3-326 FXII contact activation products have an inhibitory effect on alphaFXIIa
Christopher Siedlecki, Penn State University, USA

P3-327 Wetting features of butterflies Morpho *peleides* and anti-icing behavior
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Louise Burdin, Ecole Centrale de Lyon, France

P3-328 A Versatile Hydrophilic and Antifouling Coating Based on Dopamine Modified Four-Arm Polyethylene Glycol by One-Step Synthesis Method
Xue-Ting Wang, Key Laboratory for Space Bioscience and Biotechnology, School of Life Science, Northwestern Polytechnical University, Xi'an 710072, China, China

P3-329 Ovalbumin-tannic acid composite coating on medical polymer materials: high stability, superhydrophilicity and efficient bacterial resistance
Xue-Ting Wang, Key Laboratory for Space Bioscience and Biotechnology, School of Life Science, Northwestern Polytechnical University, Xi'an 710072, China, China

P3-330 Nanodiamond functionalized implant surfaces for the formation of a vital oral soft tissue composite
Kedar Mehta, Dresden University of Technology, Institute of Materials Science, Max Bergmann Center of Biomaterials, Dresden, Germany

P3-331 Silanization affects peptide functionalization of silicon surfaces: impact on stem cell adhesion
Melissa Kosovari, Laboratoire d'Ingénierie de Surface, Centre de Recherche sur les Matériaux Avancés, Département de Génie des Mines, de la Métallurgie et des Matériaux, Université Laval, 1065 Avenue de la médecine, Québec G1V 0A6, Canada, Canada

P3-332 A universal plasma-mediated strategy enabling durable zwitterionic surface modifications for antithrombogenic polymeric medical devices
Matthew Crago, School of Chemical and Biomolecular Engineering, The University of Sydney, Sydney, 2006, Australia, Australia

P3-333 Use of nonlinear polyethylene material models for structural numerical simulations of medical implants: application to spherical and cylindrical joints
Leonardo Fanton, Department of Metallurgy and Materials Engineering, Faculty of Engineering, University of Malta, Msida, MSD 2080, Malta, Malta

P3-334 Selective inhibition of tumour cell growth on cerium oxide nanoparticle layers
Tamaki Naganuma, National Institute for Materials Science, Japan

P3-335 A new polyoxazoline-based biocompatible coating for high performance medical devices
Panyue WEN, Kyushu University, Japan

P3-336 Increasing keratinocytes adhesion with reduction of infection risk in Ti6Al4V surface by dual peptide coatings for transepithelial implants for amputees
Daniel Moreno, International University of Catalonia, Spain

P3-337 Western blot analysis of metabolite effect on protein adsorption to PEO gold surfaces
Mehdi Ghaffari Sharaf, Department of Chemical and Materials Engineering, University of Alberta, Edmonton, Alberta, Canada T6G 1H9, Canada

P3-338 Developing a selective zirconium phosphate (ZrP) cation exchanger to adsorb ammonium: Effect of a gas-permeable and hydrophobic coating
Lei Li, University of Pittsburgh, USA

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P3-339 Development and mechanism of action of sheltered positive charged macromolecule coating to prevent bio-interface-induced contact coagulation activation
Haifeng Ji, University of British Columbia, Canada

P3-340 Multiarray peptide formulation for improved endothelialization of devices
Marcelo Munoz, University of Ottawa Heart Institute, Canada

P3-341 Interplay of electrolyte concentration and pH in physical properties and protein deposition in ophthalmic hydrogels
Jihye Ahn, Department of Optometry, College of Energy and Biotechnology, Seoul National University of Science and Technology, Korea, Republic of

P3-342 Spectroscopic and Thermodynamic Study of the Molecular Reaction of Human Serum Albumin with Sodium Chlorite
Hayoung Kim, Department of Optometry, Seoul National University of Science and Technology, Korea, Republic of

P3-343 Antimicrobial synthetic n-carboxyanhydride-derived polypeptide functionalized solid surfaces
Yurong Zhang, The University of Melbourne, Australia

P3-344 Fabrication of exosome surface protein CD9 diagnosing platform consisted of novel aptamer and MXene on the extended-gate field-effect transistor
Taek Lee, Kwangwoon University, Korea, Republic of

P3-345 Imaging microRNA expression in live-cell via Photoinduced Electron Transfer
Jiwoo Lim, Korea Advanced Institute of Science and Technology, Korea, Republic of

P3-346 Electrochemical nanobiosensing system based on Au electrode array with nanoporous structure (Au EANS) for detection of SARS-CoV-2 RNA
YEJIN LEE, The Catholic University of Korea, Korea, Republic of

P3-347 Engineering pre-vascularized 3D tissue and rapid convergence with host blood vessels via co-cultured spheroids-laden hydrogel
Hyunseok Kwon, Hanyang University, Korea, Republic of

P3-348 Promising cancer detection strategy based on electrochemical hydrogel sensor composed of dual-responsive network
Hayeon Jo, Korea National University of Transportation, Korea, Republic of

P3-349 Iodine-carbon formulations with high contrast performance and safety
Minyoung Jin, The Catholic university of Korea, Korea, Republic of

P3-350 One-step cell spheroid sheets fabrication using fibrinogen for manipulating and delivery at mouse hindlimb ischemia
Sun Hong Lee, Dankook University, Korea, Republic of

P3-351 Bioactive casein-based thermo-sensitive hydrogel combined with electrospun fiber conduits for Achilles tendon repair
Min Sik Kim, Dankook university, Korea, Republic of

P3-352 Advancement of multi-layered decellularized ECM for skin regeneration
Youngdoo Chung, Dankook University, Korea, Republic of

P3-353 Dual-functionalized pullulan-based photocurable and bioadhesive hydrogels for sutureless repair of corneal injuries
Mohsen Taghizadeh, 1) Institute of Tissue Regeneration Engineering, Dankook University, Cheonan 31116, Republic of Korea, 2) Department of Nanobiomedical Science BK21 PLUS NBM Global Research Center for Regenerative Medicine, Dankook University, Cheonan, 31116, Republic of Korea, Korea, Republic of

P3-354 PKCα and δ Regulation in Beating Cardiomyocyte Differentiation of P19CL6 Cells with Suppressed Apoptotic Cell Populations
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P3-355 Matrix stiffness-induced nuclear softening drives the invasiveness of keloid fibroblast
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P3-356 Identifying differential mechanical markers for in vitro regenerative muscle models
Tae Yoon Kwon, KAIST, Korea, Republic of

P3-357 Electrochemical biosensors based on M13 bacteriophage for detection of influenza viruses
Sang Hyun Lee, Sungkyunkwan University, Korea, Republic of

P3-358 Diagnosis of multiple nucleic acid targets through fluorescent ring patterns and deep learning application
Juhee Lee, KAIST, Korea, Republic of

P3-359 Preoperative localization and dual image-guided surgery of pulmonary nodules via an injectable fluorescent and iodinated hydrogel
Woojin BACK, Korea Advanced Institute of Science and Technology, Korea, Republic of

P3-360 Cell-derived ECM incorporated bioactive hydrogels for *in situ* tissue regeneration
Yeonjeong Kim, Department of Bioengineering and Nano-Bioengineering, Incheon National University, Korea, Republic of

P3-361 Analysis of extracellular vesicle-derived oncogenic protein-drug interaction for EGFR mutations in NSCLC diagnosis
Junhee Han, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

P3-362 Colorimetric and fluorescence dual-mode lateral flow immunoassay incorporating metal-enhanced fluorescence for respiratory infectious disease
Myeong Jin Jeon, Korea University, Korea, Republic of

P3-363 Development of SERS-based biosensor utilizing vertex-enhanced gold nanoparticles for diagnosing the severity of sepsis
Seungjong Baek, Korea University, Korea, Republic of

P3-364 Predicting response to cetuximab therapy by monitoring EGFR internalization and degradation
Yejin Sung, Korea Institute of Science and Technology (KIST), Korea, Republic of

P3-365 Fabrication of bioink containing omega-3 polyunsaturated fatty acids for muscle regeneration
Francis Nacionales, Department of Precision Medicine, Sungkyunkwan University School of Medicine (SKKU-SOM) Suwon 16419, Republic of Korea., Korea, Republic of
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P3-366 A one-step fabrication method for cell-spheroid-containing microfibers using thermosensitive hydrogel
Juyeon Kim, Sungkyunkwan university, Korea, Republic of

P3-367 Ex vivo culture method for Bioluminescence imaging in large animal
MINA KIM, Hulux, Korea, Republic of

P3-368 Unveiling the focal adhesion-lysyl oxidase axis: Exploring inhibition of chondrocyte dedifferentiation through traction force microscopy
Min-Kyu Kim, Soonchunghyang Institute of Medi-Bio Science (SIMS), Soonchunhyang University, Korea, Republic of

P3-369 Effects of Cyclic Stretching and Growth Factor on the Chondrogenesis of Adipose-derived Stem Cells
Ming-Fa Hsieh, Chung Yuan Christian University, Chinese Taipei

P3-370 Widely distributable boronic acid-based adhesive hydrogel for treating vascular graft stenosis and myocardial infarction
Hue Le, National Cerebral and Cardiovascular Center Research Institute, Japan

P3-371 Manganese Amplifies Photoinduced ROS in Toluidine Blue Carbon Dots to Boost MRI Guided Chemo/Photodynamic Therapy
Huihui Wang, Yangzhou University, China

P3-372 Multimodal spectral photon-counting computed tomography (SPCCT)-Magnetic resonance imaging contrast agents for cancer theranostic application
Dong-Hyun Kim, Northwestern University, USA

P3-373 Effect of luminal surface structure of decellularized aorta on endothelial cell behavior and hemodynamics
Mako Kobayashi, Department of Materials Processing, Graduate School of Engineering, Tohoku University, Japan

P3-374 Solid-state adhesive of porous hydroxyapatite with on-demand attachment and detachment abilities
Masahiro Okada, Okayama University, Japan

P3-375 Macrophage membrane-camouflaged nanoparticles for selenoprotein-mediated immunotherapy and NIR-II photoacoustic diagnostics of atherosclerotic plaques
Gaocan Li, Sichuan University, China

P3-376 Combination of dental pulp stem cells and photo-sensitive hydrogels encapsulating silver nanoparticles for dental pulp regeneration
Lihua Luo, School and Hospital of Stomatology, Wenzhou Medical University, Wenzhou, Zhejiang, China, China

P3-378 Super-sustainable bioimaging using protein-sized graphene quantum dots with unprecedented photostability
Hao Yan, Shenzhen International Graduate School, Tsinghua University, China

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P3-379 Hybrid Liposomal Hydrogel as a Lipid Mediator Delivery Platform for Tissue Immunomodulation
Edward Botchwey, Georgia Tech/Emory, USA

P3-380 Integrating Nanobeacons with Dynamic Microfluidics for Circulating Tumor Cell Identification
Wei-Han Weng, National Tsing Hua University, Chinese Taipei

P3-381 Implantable SERS-based, multiplexed nanotags for in-vivo tissue-state tracking
Connie Wang, Massachusetts Institute of Technology, USA

P3-382 Protein-engineered microcapsules for targeted spheroid delivery as a novel treatment for diffuse cartilage lesions
Desiré Venegas Bustos, University of Valladolid, Spain

P3-383 Injectable MSC Spheroid and Microgel Granular Composites for Engineering Cartilage Tissue
Nikolas Di Caprio, University of Pennsylvania, USA

P3-384 Structured polymers as suspending media for lightsheet fluorescent microscopy.
Joseph Weightman, University of Birmingham, United Kingdom

P3-385 Bioink Formulation for 3D Bioprinting of Skin Tissue Equivalents: Achieving Mechanical Similarity to Human Skin
Hilal METE GUNAYDIN, University of Birmingham, United Kingdom

P3-386 Polysaccharide-based antibacterial nanocomposite hydrogels with Janus structure for treatment of infected extraction socket
Tailong Shi, Beijing University of Chemical Technology, China

P3-387 *In situ* ligand-directed RAFT polymerization induced turn-on fluorescence: a target-selective protein detection approach
Chun-Yi Wu, Graduate School of Engineering, Osaka University, Japan

P3-388 Compliance of silk fibroin/polyester small-diameter artificial blood vessels and its effect on patency
Mengnan Dai, Soochow University, China

P3-389 Biomimetic Multilayer Gradient Tissue Scaffolds for Improved Articular Cartilage Regeneration with a Focus on Clinical Use
Hatice Kubra Bilgili, Hokkaido University, Japan

P3-390 Machine-learning-assisted single-cell diagnosis of cancer drug resistance to EGFR TKIs using EGFR receptor-targeted functionalized nanoparticles
Daikun Wu, 1 The State Key Laboratory of Metal Matrix Composites, School of Materials Science and Engineering, Shanghai Jiao Tong University, 800 Dongchuan Road, Shanghai 200240, China. 2 Zhangjiang Institute for Advanced Study (ZIAS), Shanghai Jiao Tong University, 429 Zhangheng Road, Shanghai 201203, China., China

P3-391 Polymer fiber skeleton reinforced decellularized in vivo engineered biotubes enable recellularization and vascular regeneration
Quhan Cheng, Nankai University, China

P3-392 Characterization and *in vivo* evaluation of biodegradable polyurethane scaffolds for bone regeneration
Xiaoyu Lei, Sichuan University, China

P3-393 Mechanism of bone-like formation on enzyme-loaded fibrous polyurethane membrane
Qing Zhao, Sichuan university, China

P3-394 A composite scaffold immobilized with HB-EGF for 3D culture of mesenchymal stem cells
Bowu Peng, National Institute for Materials Science, University of Tsukuba, Japan

P3-395 Glycopeptide hydrogel-mediated macrophage-T cell crosstalk to activate regenerative type 2 immune response for tissue repair
Jingrong Wang, Institute of Biomedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College, China

P3-396 Hepatic Patch for Liver Regeneration after CCl_4 Poisoning
Ting Yi Wu, National Taiwan University, Chinese Taipei

P3-397 Composite Hydrogel-based Scaffolds Made by 3D Printing: Towards Physicochemical Liver Extracellular Matrix Mimicry and Enhanced Tissue Regeneration
Xinyang Zhang, The University of Hong Kong, China

P3-398 Optimization of biological matrix for esophageal substitution and its cellularization with immunoprivileged cells of Wharton Jelly
Romane LESIEUR, BioTis U1026 - CIC-IT - Université de Bordeaux, France

P3-399 Injectable, cellulose-reinforced osteoinductive chitosan hydrogels for osteoporotic vertebral compression fracture repair
August Hemmerla, Chemical and Biomedical Engineering, University of Missouri - Columbia, USA

P3-400 Effect of antioxidants on Elastin Deposition by Human Dermal Fibroblasts
Jada Stutts, Marshall university, USA

P3-401 Effect of metal doping on the antibacterial efficiency of titania nanosheets against *Streptococcus mutans*
Mengtian Jiang, Tokyo Medical and Dental University, Japan

P3-402 Assessment of novel surgical procedures using decellularised muscle and bioactive ceramic: a histological analysis
RANDA ALFOTAWI, King Saud University, Saudi Arabia

P3-403 Biomimetic scaffolds for rotator-cuff repair
Younan Xia, Georgia Institute of Technology, USA

P3-404 A Dual Network Aerogel Based on decellularized Wharton's Jelly matrix /Tannic Acid Demonstrates Excellent Osteogenic Capabilities
Withdrawal
Halima KERDJOUDJ, University of Reims, France

P3-405 Revolutionize cartilage regeneration with an innovative tissue manufacturing solution
Le Quang Bach, Bioprocessing Technology Institute (BTI), Agency for Science Technology and Research (A*STAR), Singapore

P3-406 Engineering viscoelastic and tissue-adhesive decellularized extracellular matrix hydrogels for tissue regeneration
Debabrata Palai, 1. Research Center for Macromolecules and Biomaterials,National Institute for Materials Science, Japan

P3-407 A near-infrared lysosomal probe for dynamic sulfur dioxide monitoring in inflammation
Withdrawal
Ziqiang Wang, Southern University of Science and Technology, China

P3-408 Cross-conjugated polymers as fluorescent probes for intracellular potassium ion detection
Withdrawal
Ziqiang Wang, Southern University of Science and Technology, China

P3-409 Osteogenic differentiated human bone marrow stem cells inhibited sprouting angiogenesis of human umbilical vein endothelial cells via paracrine excreted IGFBP
Shiyu Sun, Peking University School and Hospital of Stomatology, China

P3-410 High-performance magnetic imaging probes
Qiyue Wang, Shanghai Jiao Tong University, China

P3-411 Antiadhesive Hyaluronic Acid-Based Wound Dressings Promote Wound Healing by Preventing Re-Injury: An In Vivo Investigation
Sangsoo Jang, Pusan National University, SNvia, Korea, Republic of

P3-412 *The Novel Design of Cerebral Aneurysm Flow Disruptor: 'Metal-Polymer Hybrid'*
Miri Kim, Hansbiomed Corp., Korea, Republic of

P3-413 Theragnostic Nanosomes for Precision Diagnosis and Therapy in Early Osteoarthritis Management
Hongsik Cho, University of Tennessee Health Science Center, USA

P3-414 ADVANCED DRESSINGS FOR THE TREATMENT OF CHRONIC WOUNDS
RODRIGO SILVEIRA VIEIRA, Universidade Federal do Ceará, Brazil

P3-415 Nanoimprinting sulfated chitin and chitosan via layer-by-layer self-assembly for guiding neural regeneration
Yi-Hsuan Wu, Institute of Biomedical Engineering, College of Medicine and College of Engineering, National Taiwan University, Taipei, Taiwan, Chinese Taipei

P3-416 Engineered slicon nitride-infiltrated fabrics demonstrate antimicrobial activity
Ryan Bock, SINTX Technologies, Inc., USA

P3-417 Preparation and application of angelica dahurica/keratin microneedles patches for oral soft tissue wound healing
Minhua Teng, Affiliated Hospital of Qingdao University, China

P3-418 Understanding cells friction against contact lens
Sam Davison, University of Sheffield, United Kingdom

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P3-419 Biodegradable scaffold-guided tissue regeneration - Principia of the histological and immunohistochemical analyses of the foreign body reaction
Flavia Medeiros Savi, 1. School of Mechanical, Medical and Process Engineering, Faculty of Engineering, Queensland University of Technology, Brisbane, QLD, Australia. 2. ARC Industrial Transformation Training Centre for Multiscale 3D Imaging, Modelling and Manufacturing (M3D), Brisbane, QLD, Australia. 3. Max Planck Queensland Centre for the Materials Science of Extracellular Matrices., Australia

P3-420 Chronic wounds management: a tailored approach through medicated bi-layered and hybrid patches
Sara Bernardoni, Institute of Science Technology and Sustainability for Ceramics (ISSMC), National Research Council (CNR), Italy

P3-421 Electrical stimulation mediates cellular mechanotransduction and epigenetic alterations
Shanika Karunasagara, (1) Institute of Tissue Regeneration Engineering, Dankook University, Cheonan 31116, Republic of Korea (2) Department of Nanobiomedical Science BK21 PLUS NBM Global Research Center for Regenerative Medicine, Dankook University, Cheonan, 31116, Republic of Korea, Korea, Republic of

P3-422 Fabrication of vascularized cell spheroid block for artificial tissue
Jin Jeon, Center for Biomaterials, Biomedical Research Institute, Korea Institute of Science and Technology (KIST), Korea, Republic of

P3-423 Biofabrication of 3D tumor models surrounded by capillaries and arteries
Jihyeon Song, Pohang University of Science and Technology (POSTECH), Korea, Republic of

P3-424 3D-Printed In Vitro Lung Cancer Invasion Model
GwangMyeong Kim, Pohang University of Science and Technology (Postech), Korea, Republic of

P3-425 Differential Durotactic Responses of Cancer-Associated and Normal Fibroblasts in Stiffness Gradients
Dila Naz Bozkaya, Department of Mechanical Engineering, Korea Advanced Institute of Science and Technology, Republic of Korea, Korea, Republic of

P3-426 Role of Matrix Mechanics in Cancer-Associated Fibroblast Activation: Insights from a 3D Biomimetic Tumor Model
Somayadineshraj Devarasou, KAIST, Korea, Republic of

P3-427 Deciphering the Role of Microenvironmental Stiffness on the heterogeneity of FAP+ Cancer-Associated Fibroblast in Breast Cancer
Somayadineshraj Devarasou, KAIST, Korea, Republic of

P3-428 Tissue-specific extracellular matrix-based 3D explant platform for heterotypic isolation of cancer-associated fibroblast
Siwon Mun, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

P3-429 Reconstruction of the gastric tumor microenvironment to evaluate T cell fitness in 3D matrix
SEUNG WON OH, KAIST, Korea, Republic of

P3-430 High throughput cell-embedded ECM floating model for safety testing of nano- and biomaterials
Withdrawal
Soojin Kim, Korea Advanced Institute of Science and Technology, Korea Institute of Toxicology, Korea, Republic of

P3-431 3D *In-vitro* Modeling for Myeloid Sarcoma with Brain Decellularized ECM Recapitulating Brain-Adaptive Phenotypic Changes
Heejeong Yoon, UNIST, Korea, Republic of

P3-432 Gold nanostructure-integrated conductive microwell arrays for uniform cancer spheroid formation and electrochemical drug screenin
Fu-Nan Ju, School of Integrative Engineering, Chung-Ang University, China

P3-433 Design of Microenvironment Modulation for Neuron to Glioblastoma Interactive Response via Electrical Stimulation
Ji Yeon Lee, KAIST, Korea, Republic of

P3-434 Engineered hydrogel elucidates contributions of matrix mechanics to pathobiology of adenocarcinoma and identify matrix-activated therapeutic targets
Ricardo Cruz-Acuna, Columbia University Irving Medical Center, USA

P3-435 Large-size spheroid formation based on silk fibroin hydrogel particles
Yusuke Kambe, Institute of Agrobiological Sciences, National Agriculture and Food Research Organization, Japan

P3-436 Viscoelastic stiffening of gelatin hydrogels for dynamic culture of pancreatic cancer spheroids
Chien-Chi Lin, Purdue University, USA

P3-437 A versatile fiber composite hydrogel as a biomimetic 3D tumor model for drug screening
Chaojing Li, Donghua University, China

P3-438 Notch-1 regulates collective cancer cell migration by controlling intercellular junction and cytoskeletal organization
Yixi Zhang, University of Electronic Science and Technology of China, China

P3-439 Nesprin-1/2 facilitates breast cancer cell pore migration via nucleus deformatio Withdrawal
Meng Wang, University of Electronic Science and Technology of China, China

P3-440 Decellularized tissue as a 3D scaffold for Dupuytren´s disease model
Jarmila Knitlova, Czech Academy of Sciences, Insitute of Physiology, Czech Republic

P3-441 A Compartmentalized Bioengineered 3D *In Vitro* Model of Triple-Negative Breast Cancer for High Throughput Anti-Cancer Drug Screening Applications
Chitra Jaiswal, Biomaterials and Tissue Engineering Laboratory, Department of Biosciences and Bioengineering, Indian Institute of Technology Guwahati, Guwahati-781039, Assam, India., India

P3-442 Cancer Metastasis on Chip; integrating microvessels in the tumor microenvironment with round luminal channels
Mohammad Jouybar, Technical University of Eindhoven, Netherlands

P3-443 A tumour-engineered platform of pancreatic cancer
Verena Kast, Leibniz Institute of Polymer Research Dresden e.V., Institute of Biofunctional Polymer Materials, Hohe Straße 6, 01069 Dresden, Germany, Germany

P3-444 BREAST Cancer Spheroid Mechanosensation in 3D Linear Gradient Hydrogels
Danielle Vahala, University of Western Australia, Australia

P3-445 Gelatin maleimide microparticles as a rapid *in vitro* drug-screening platform for glioblastoma
Brittany Payan, University of Illinois Urbana Champaign, USA

P3-446 Microfluidic stiffness gradient hydrogels reveal distinct roles of matrix in breast cancer cell invasion
Martin Kiwanuka, Mechanobiology Institute, National University of Singapore, Singapore

P3-447 Direct electron transfer biosensing platform for glucose monitoring
Liyuan Wang, College of Materials Sciences and Opto-Electronic Technology, University of Chinese Academy of Sciences, China

P3-448 Glioblastoma tumour cells injected into brain organoid to assess cytotoxic camptothecin derivative effects in a realistic environment model
Pierre Schembri-Wismayer, University of Malta, Malta

P3-449 Effect of exogenous pH on cell growth of MDA-MB-231 breast cancer cell lines
Sung Mun Lee, Khalifa University, United Arab Emirates

P3-450 Evaluating biophysical pattern of glioblastoma-mediated microglia invasion using tissue-engineered cancer models
Chia-Wen Chang, University of Illinois Urbana-Champaign, USA

P3-451 Personalized 3D osteosarcoma models for recapitulating interpatient heterogeneity
Jeehee Lee, Stanford University, USA

P3-452 Developing 3D *in vitro* lymphatic vessel model for studying dendritic cell migration under inflammatory conditions
Hyeonsu Jo, Seoul national university, Korea, Republic of

P3-453 Vascularized bone tissue analysis in a 3D microfluidic chip for avascular necrosis modeling
Subeen Lee, Division of Bioengineering, Incheon National University, Incheon, Republic of Korea, Korea, Republic of

P3-454 Effect of silica coating by sol-gel process on zirconia-porcelain bonding
Jae Hoon Sim, Department of Dental Biomaterials and Research Institute of Oral Science, College of Dentistry, Gangneung-Wonju National University, Korea, Republic of

P3-455 Chemical bonding of nanorod hydroxyapatite to the surface of calciumfluoroaluminosilicate particles for improvement of histocompatibility of glass ionomer cement
Sohee Kang, Department of Dentistry, Yeungnam University College of Medicine, Daegu 42415, South Korea, Korea, Republic of

P3-456 Evaluation of bone healing using soft-type xenogenic and particulate graft materials after sinus augmentation in rabbits with perforated sinus membrane
Baek-Sun Choi, Bone Science R&D center, Osstem Implant Co., Ltd, Korea, Republic of

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P3-457 Study on the multi-functional biomaterials with biomimetic structure for inflammatory bone defect
Lun Yuan, Stomatology Department, Sichuan Provincial People's Hospital, School of Medicine, University of Electronic Science and Technology of China, Chengdu 611731, PR China, China Withdrawal

P3-458 Injectable Dynamic Hydrogel with Antioxidant Nanoparticles for Periodontitis Treatmen
Shanyu Zhang, The University of Hong Kong, Hong Kong SAR, China

P3-459 A dynamic Kalman filtering calibration algorithm for continuous glucose monitoring
Tianyi Sun, School of Electronic, Electrical and Communication Engineering, University of Chinese Academy of Sciences, Beijing, China, China

P3-460 Nitric oxide-releasing nanomatrix gel and hydroxyapatite on angiogenesis and dentinogenesis
Kyounga Cheon, University of Alabama at Birmingham, USA

P3-461 Bone regenerative therapy by a matrix loaded with chemically-modified RNAs designed for promoting bone formation, vascularization, and innervation
Micaela ROQUE, BioIngenierie Tissulaire (BioTis), Inserm U1026, University of Bordeaux, Bordeaux, France, France

P3-462 ReGum™, a next-generation natural scaffold for periodontal repair
Ishay Attar, BioChange ltd, Israel

P3-463 Ultrafast Flow-Dialysis of Lipid-based Nanoparticle Drug Delivery Systems via Microfluidic-Multiple Buffer Injector
JeongUn Joo, Pohang University of Science and Technology (POSTECH), Korea, Republic of

P3-464 Shear flow activates sirtuins in endothelial cells through PIEZO1
Vadym Kopych, UST, KIST, Korea, Republic of

P3-465 Full-cycle study on developing a novel structured micromixer and evaluating the nanoparticle products as drug delivery carriers
Gisu Na, POSTECH, Korea, Republic of

P3-466 Flow-based laccase extraction by aqueous two-phase system with intelligent phase separation
Vikas Sharma, CIMPS, Department of Chemical Engineering, Pohang University of Science and Technology (POSTECH), Korea, Republic of

P3-467 Development of a liposome-based infectious disease detection platform using hairpin DNA
Khulan Nyamzaya, Incheon National University, Korea, Republic of

P3-468 Characterization of Cetirizine-Releasing Contact Lenses: A Case Study with Commercial Contact Lenses
Hayoung Kim, Department of Optometry, Seoul National University of Science and Technology, Korea, Republic of

P3-469 Hemostatic Comparison of Starch-based Powder
HyunKyoon Kim, Theracion Biomedical Co., Korea, Republic of

P3-470 Instantaneously responsive continuous glucose monitoring microneedle patches for diabetic monitoring
Inhoo Choi, POSTECH, Korea, Republic of

P3-471 Seaweed polysaccharide-based microneedles for transdermal drug delivery
SuHyun Jeong, Department of biomedical engineering, Chonnam National University, Korea, Republic of

P3-472 Sustainable bone-substituting biocomposite scaffolds: towards a greener future
Aksha Dhawan, TERI-Deakin Nanobiotechnology Center, TERI Gram, India

P3-474 Modular supramolecular nanofibers enable sublingual immunization with a variety of peptide epitopes
Emily Roe, Duke University, USA

P3-475 Rapid dissolvable protein microneedles for instant delivery and long-term storage of biomolecules for biomedical application
Jayakumar Rajendran, PhD student, Indian Institute of Technology, Hyderabad, India

P3-476 Temperature Responsive Polymer-based Topical Formulation to Enhance the Regeneration of Impaired Epithelium Barrier Associated with Inflammatory Bowel Disease
Ayushi Mairal, Department of Biological Sciences and Bioengineering, Indian Institute of Technology Kanpur, Kanpur-208016, UP, India, India

P3-477 Multifunctional Hemostatic Biomaterials for Partial Liver Resection Withdrawal
Gongyan Liu, sichuan university, China

P3-478 Harnessing the potential of tissue-derived extracellular vesicle therapy for precision regenerative medicine
Peng Lou, West China Hospital of Sichuan University, China

P3-479 Injectable self-assembling peptide nanofiber hydrogel as a bioactive dressing material to promote diabetic wound healing
Peng Lou, West China Hospital of Sichuan University, China

P3-480 3D printing of anti-fouling implants based on alginate-zwitterionic interpenetrating network hydrogel bioinks
Norma Garza Flores, McMaster University, Canada

P3-481 Long-term hydrophilic and anti-thrombogenic dynamic covalent silicone-based biomaterials
Norma Garza Flores, McMaster University, Canada

May 30 (Thu) 18:00~19:00

P4-001 Hierarchical protein-based hydrogel using intrinsically disordered protein
Wonkyung Ahn, Korea University, Korea, Republic of

P4-002 ROS-Generative Hyaluronic Acid Hydrogel and LED Irradiation for Targeted Wound Healing Strategies
Seung Hee Hong, Yonsei University, Korea, Republic of

P4-003 Fabrication of Long-Lasting Multilayers of Diacetylene@ silica Nanoparticles Patterned on Solids for Sensory Figures
Tae Kyung Won, Korea University, Korea, Republic of

P4-004 Engineering of ligand spacing and connectivity on supra-particle and supramolecular assembly to regulate stem cell differentiation
Sungkyu Lee, Korea University, Korea, Republic of

P4-005 Supramolecular Lysosome-Targeting Chimeras for Targeted Protein Degradation
Dohyun Kim, UNIST, Korea, Republic of

P4-006 Organelle Localization-Induced Bioorthogonal Polymerization for Spatially Controlled Nanomaterial Construction
Gaeun Park, UNIST, Korea, Republic of

P4-007 Interfacial Behavior of Gelatin Microspheres And Their Biomedical Applications
Yeongjin Lee, KAIST, Korea, Republic of

P4-008 Different mechanical properties of the gamma-irradiated gelatin gels using the different cooling processes
Masayuki Hara, Osaka Metropolitan University, Japan

P4-009 UV-crosslinking of Type I collagen gels changed the morphology of brain capillary endothelial cells on them
Masayuki Hara, Osaka Metropolitan University, Japan

P4-010 From Multicomponent Self-Assembly to Osteo-Promoting Hydrogels
Babatunde Okesola, School of Life Sciences, Faculty of Medicine and Health Sciences, University of Nottingham, United Kingdom

P4-011 Bioresorbable Devices for Neural Applications
Huinan Liu, University of California, Riverside, USA

P4-012 Evolution of multivalent DNA-based supramolecular assemblies for selective targeting
Maartje Bastings, EPFL, Switzerland

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P4-013 Co-culturing hBMSCs and monocytes/macrophages in vitro to mimic bone regeneration
Jua Kim, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

P4-014 Reduction reactions of Mg corrosion dominating the cellular responses: Importance of extracellular reactive oxygen species and pH
Jua Kim, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

P4-015 Supramolecular ultrasound-assisted polyelectrolyte multilayer coatings with antimicrobial activity
Chloé Guilbaud-Chéreau, SPARTHA Medical, France

P4-016 Evaluation of properties and biocompatibility of degradable high strength and toughness Zn-Mn-Li alloys
Xinglong Zhu, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China

P4-017 Biodegradation behaviour of resorbable PLA-coated Zn-1.5Mg scaffolds
Adele CARRADO, CNRS IPCMS Université de Strasbourg, France

P4-018 Anti-infection mechanism of a novel dental implant made of titanium-copper (TiCu) alloy and its mechanism associated with oral microbiology
Ling Ren, Institute of Metal Research Chinese Academy of Sciences, China

P4-019 Cell and organelle mimics based on supramolecular assembly
Hongjing Dou, Shanghai jiao Tong University, China

P4-020 Peptide stereocomplexation orchestrates supramolecular assembly of hydrogel biomaterials
Kyle Lampe, University of Virginia, USA

P4-021 Tailoring hydrogel mechanics and architecture for effective vocal fold regeneration
Luc Mongeau, McGill University, Canada

P4-022 In vitro and in vivo studies on the corrosion and biological behavior of Mg-Zn-Mn alloys in the biliary microenvironment
Withdrawal
Ling Liu, Xiangya Hospital,Central South University, China

P4-023 300 MPa grade biodegradable high-strength ductile low-alloy (BHSDLA) Zn-Mn-Mg alloys: an *in vitro* study
Xiang-Min Li, University of Science and Technology Beijing, China

P4-024 Biodegradable Zn-0.5Li alloy rib plate: Processing procedure development and in vitro performance evaluation
Jin-Ling Sun, University of Science and Technology Beijing, China

P4-026 Dual-responsive hydrogel with temperature-sensitive self-adaptive shape and controlled drug release accelerates diabetic wound healing
Withdrawal
Wanyi Zhou, University of Electronic Science and Technology of China, China

P4-027 Surface modification of pure magnesium to inhibit early corrosion and to improve the compatibility of osteoblasts
Kotomi Kitada, Faculty of Chemistry, Materials and Bioengineering, Kansai University, Japan

P4-028 Tuning hydrogels through host-guest chemistry for cardiac tissue engineering
Nataliya Debera, MESA+ Institute and Techmed Centre of University of Twente, Netherlands

P4-029 Phase Transiion of Self-Assemblies Composed of Diblock Peptoids Involving Crystalline Aliphatic Side Chains
Renya Fukuda, Graduate School of Science and Engineering, Kansai University, Japan

P4-030 Development of a water-free and deep eutectic solvent-based process for electroforming biodegradable Fe-based alloys
Sara Palladino, Laval University, Canada

P4-031 Biomimetic hydrogel-based platform for high-yield and high-throughput engineered organoid culture
Hyunsu Jeon, University of Notre Dame, USA

P4-032 Biodegradability analysis for different Mg-based alloys used in orthopedic surgery
Veronica Paltanea, National University of Science and Technology POLITEHNICA Bucharest, Romania

P4-033 Development of biomaterial bone substitute-based injectable hydrogels for the treatment of bone defect
Premchirakorn Phewchan, Department of Pharmaceutical Technology, Faculty of Pharmaceutical Sciences, Naresuan University, Phitsanulok, 65000, Thailand, Thailand

P4-034 Additive manufacturing of biodegradable MgZnCa alloys using laser powder bed fusion
Giulio Cavaliere, Uppsala University, Sweden

P4-035 Near-Infrared-Responsive Injectable Photothermal Hydrogel for Synergistic Photothermal Biomaterial Application
Hsi-Erh Chen, National Taiwan University, Chinese Taipei

P4-036 pH-induced self-polymerisation of tannic acid
Motaharesadat Hosseini, School of Mechanical, Medical and Process Engineering, Faculty of Engineering, Queensland University of Technology, Brisbane, QLD, Australia; ARC Industrial Transformation Training Centre for Multiscale 3D Imaging, Modelling and Manufacturing (M3D), Queensland University of Technology, Brisbane, QLD, Australia., Australia

P4-037 Enhancing Titanium Surface Functionality with Immobilized Hydrogel for Biomedical Engineering Applications
Ghazal Shineh, School of Biomedical Engineering, University of Sydney, Sydney, New South Wales 2006, Australia, Australia

P4-038 The Effect of Cobalt Ion on HIF-1a Activation of Pre-osteoblast
Hwaran Lee, Clemson University, USA

P4-039 Luminescent europium-containing nanocomposite double-network hydrogels for sensing applications
Pin-Han Zeng, Institute of Polymer Science and Engineering, National Taiwan University, Chinese Taipei

P4-040 Galvanic coupling of tin-silver alloy to 316L stainless steel at varying surface area ratios
Charley Goodwin, Clemson University, USA

P4-041 CoCrMo femoral knee retrievals show severe wear, electrocautery damage, and material transfer
Peter Kurtz, Clemson University, USA

P4-042 Fibroin-based film-forming gels for facial skin protection
Aphiradee Boonkham, Naresuan University, Thailand

P4-043 A digital twin for degradable Mg-implants
Regine Willumeit Roemer, Helmholtz Center Hereon, Institute for Metallic Biomaterials, Germany

P4-044 Significantly performance improvement of biodegradable Zn alloys by refining second phase through a novel technology
Zhang-Zhi Shi, University of Science and Technology Beijing, China

P4-045 Implantation of magnesium cylinders to influence pain in an *in vivo* rabbit model of osteoarthritis.
Nina Angrisani, Hannover Medical School, Germany

P4-046 Studying dynamic magnesium-based implant biodegradation using *in situ* synchrotron radiation-based tomography and transmission electron microscopy
Berit Zeller-Plumhoff, Helmholtz-Zentrum Hereon, Germany

P4-047 Corrosion behaviour of the TiNbTaSn titanium beta alloy
Jaroslav Fojt, University of chemistry and technology Prague, Czech Republic

P4-048 Semi-automated system for fabrication and optimization of customized hydrogel templates for tissue biomanufacturing
Deepak Choudhury, BTI A*STAR, Singapore, Singapore

P4-049 Additively manufactured and laser surface textured Ti-13Nb-13Zr for bone implant application
Annett Gebert, Leibniz IFW Dresden, Germany

P4-050 Co-assembling living material as an in vitro lung epithelial infection model
Yuanhao Wu, Wuhan Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, China

P4-051 Systematic oxide film degradation precedes titanium alloy corrosion
Michael Kurtz, Clemson University, USA

P4-052 Change in Mechanical Properties of β-type Ti-29Nb-13Ta-4.6Zr with various oxygen contents for Biomedical Applications
Takaaki Maruyama, Meijo University, Japan

P4-053 Electrochemical preparation of biomimetic coatings on biodegradable zinc alloy
Vojtech Hybasek, University of Chemistry and Technology, Prague, Czech Republic

P4-054 Mechanical and biological properties of an additively manufactured Ti-20Nb-6Ta implant material with open porous structure
Jan-Oliver Sass, Biomechanics and Implant Technology Research Laboratory, Department of Orthopedics, Rostock University Medical Center, Doberaner Straße 142, D-18057 Rostock, Germany, Germany

P4-055 Photocrosslinkable and biodegradable hydrogels for the controlled delivery of exosomes
Sergio Ayala-Mar, School of Engineering and Science, Tecnologico de Monterrey, Mexico

P4-056 Investigating the effect of thickener concentrations on the corrosion behaviour of Pure Mg
Manas Ranjan Sahu, National Institute of Materials Science, Japan

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P4-057 Bioactive biodegradable magnesium alloys for orthopedic applications
Shazia Shaikh, Indian Institute of Technology Kanpur, India

P4-058 Spontaneous cellular assembly in artificial small diameter blood vessels produced using a novel extrusion-based 3D printing technique
Hyoryung Nam, POSTECH, Korea, Republic of

P4-059 Engineered hydrogel nerve guidance conduit with draw-spun high-aligned piezoelectric fibrous membrane.
Sung-Won Ko, Department of Bionanotechnology and Bioconvergence Engineering, Graduate School, Jeonbuk National University, Korea, Republic of

P4-060 Effect of fibrous hydrogels containg bioink on fabricating artificial skeletal muscle constructs
Kyoungryong Kim, SungKyunKwan University, Korea, Republic of

P4-061 Highly conductive transparent electrode with silver nanowire and graphene oxide for ubiquitous healthcare
DongChul Cho, Postech, Korea, Republic of

P4-062 Fibronectin-Imprinted Polymer Films with Lithographically Patterned Array for Sensitive and Selective Cell Migration
MIN SEOK KANG, School of Chemical Engineering, Pusan National University, Korea, Republic of

P4-063 Development of multi-stepwise preset bioprinting technique for biomimicking microstructure of native tissue
Jae-Hun Kim, Tech University of Korea, Korea, Republic of

P4-064 Injectable electrospun nanofibrous hydrogels for angiogenesis of brain tissue following stroke
Ji Woo Lee, Department of Nano-Bioengineering, Incheon National University, Incheon, 22012, Korea, Republic of

P4-065 Development of electrospun fiber-based platforms for trabecular meshwork cell culture
MINJI KIM, Department of Nano-Bioengineering, Incheon National University, 119, Academy-ro, Yeonsu-gu, Incheon, 22012, Republic of Korea, Korea, Republic of

P4-066 Wearable and flexible glucose sensor based on heterostructure ZnO nanosheets decorated PU/Chitosan-PANI hybrid nano-fiber
Devendra Shrestha, Jeonbuk National University, Korea, Republic of

P4-067 $(CoNi)_2O_4$/fMWCNTs-hybrid nanocomposite based self-adhesive wearable non-enzymatic electrochemical sensor for continuous glucose monitoring in sweat
Devendra Shrestha, Jeonbuk National University, Korea, Republic of

P4-068 Hyper-oxygenerating of chloroplast in microcapsule composed of alginate-peptide conjugate for the xenogeneic pancreatic islet transplantation
Seonmi Jang, Hanyang University, Korea, Republic of

P4-069 Detachable microneedle for the treatment of diabetic foot ulcers
SuHyang Lee, Department of biomedical engineering, Chonnam National University, Korea, Republic of

P4-070 Drug delivery via pH-responsive core-shell structured microspheres-landen contact lens for dry eye treatment
SEUNG HEE PYEN, POSTECH, Korea, Republic of

P4-071 Anchoring effects of microneedle stent placement using interventional procedures
GeonA Kim, Department of biomedical engineering, Chonnam National University, Korea, Republic of

P4-072 Conductive microneedle electrodes for vital sign monitoring and brain treatment Withdrawal
Byeori Kim, Department of biomedical engineering, Chonnam National University, Korea, Republic of

P4-073 Development of collagen-based hemostatic microneedle patch incorporated with laponite
DoHun Kim, Department of biomedical engineering, Chonnam National University, Korea, Republic of

P4-074 3D Concave Electrode for Drug Evaluation of Parkinson's Disease Patient-derived Midbrain Organoids
Hyun Seo Kim, Department of Chemical and Biomolecular Engineering, Sogang University, Korea, Republic of

P4-075 Development of Cardiac Chamber-Shaped 4D-Printed Structure Mimicking Myocardial Fiber Orientation Using Magnetic Polarity Patterning
Hwanyong Choi, Postech, Korea, Republic of

P4-076 Ensuring bioink uniformity in 3D bioprinting of multi-component micro/nanocomposite hydrogel for even tissue regeneration via an innovative twin-screw extrusion system

Hongkyun Kim, Department of Chemical and Biomolecular Engineering, Seoul National University of Science and Technology, Seoul 01811, Republic of Korea, Korea, Republic of

P4-077 3D Bioprinting of complex tissue scaffolds with in situ homogeneously mixed alginate-chitosan-kaolin bioink with an advanced biopen

SALEHA AKTER, Seoul National University of Science & Technology, Korea, Republic of

P4-078 Transformation of Polystyrene Nanoplastics Conjugated with Copper Ions and its Toxicity Modulations

Maruthupandy Muthuchamy, Lab of Toxicology, Department of Health Sciences, The Graduate School of Dong-A University, 37, Nakdong-daero 550 Beon-gil, Saha-gu, Busan, 49315, Republic of Korea, Korea, Republic of

Withdrawal

P4-079 Production of macroscale myelinated 3D ALS model using 3D bioprinting technology that utilizes 3D hydrogel shapes to control axon growth

Jeong Sik Kong, POSTECH, Korea, Republic of

P4-080 Surface nanotopography and cell shape modulate tumor cell susceptibility to NK cell cytotoxicity

Yongbum Cho, Research Institute of Advanced Materials (RIAM), Institute of Engineering Research, Seoul National University, Korea, Republic of

P4-081 Electrospinnable, neutral coacervates for facile preparation of solid phenolic bioadhesives

Jun Sung Kim, Department of Chemistry KAIST, Korea, Republic of

P4-082 New forms of electrospun nanofiber materials for wound healing and tissue regeneration

Jingwei Xie, University of Nerbaska Medical Center, USA

P4-083 Unlocking the Potential of Human Placental Membrane-Derived Bioinks: Characterization and Applications in Bioprinting and Vasculogenesis

Hugo Oliveira, Inserm U1026, BioTis, Universite de Bordeaux, France

P4-084 Granular hydrogels for body-on-chip applications

Christine Gering, Faculty of Medicine and Health Technology, Tampere University, Finland

P4-085 High speed production of stretched collagen microfibers comprised of aligned collagen fibrils for creating artificial tendons

Shunji Yunoki, Hokkaido University, Japan

P4-086 Laser-assisted carbonization and hydrophobidization for fabrication of highly-sensitive skin patches

Yi-Chang Chung, Department of Chemical and Materials Engineering, National University of Kaohsiung, Chinese Taipei

P4-087 Regulation of cell function using microfabricated polystyrene surface and development of specific cell culture plate.

Moe Kato, University of Toyama, Japan

P4-088 4D Granular Composites to Program the Shaping of Cartilage Tissue

Nikolas Di Caprio, University of Pennsylvania, USA

P4-089 Nanopatterned culturing surfaces to investigate the biophysics of stem cell adhesion

Andrea Presutti, University of Melbourne, Australia

P4-090 Fabrication of collagen conduits for coronary artery bypass vein grafts

Swarnapriya Kasi, University of Leicester, United Kingdom

P4-091 Fabrication of 3D printable hydrogels composed of carboxymethyl chitosan and tannic acid for proten collection and release

Tasuku Yamada, Tokyo Institute of Technology, Japan

P4-092 Engineering the living brain-machine interface

Nethmini Walliwala Gamage, RMIT Univeristy, Australia

P4-093 Harnessing HfO_2 Nanoparticles for Wearable Tumor Monitoring and Sonodynamic Therapy in Advancing Cancer Care

Putry Yosefa Siboro, National Tsing Hua University, Chinese Taipei

P4-094 Silica-stabilized membrane proteins in separation membranes for highly precise resource recovery from water mixtures

Elin Posch, Chalmers University of Technology, Sweden

P4-095 Specific detection of biomolecules on zwitterionic hydrogel thin-film arrays with incorporated enzymes

Kazuho Maeda, Kansai univ., Japan

P4-096 Development of a perfusable microfluidic device for jammed granular hydrogel

Emily Ferrarese, University of Virginia, USA

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P4-097 Focused ultrasound-responsive in vitro scaffolds for wound regeneration

Natasha Claxton, University of Virginia, USA

P4-098 Transmembrane hydrostatic pressure differentials as a biophysical basis for air-liquid interface differentiation

Chen Li, McGill University, Canada

P4-099 Dental pulp tissue regeneration using protein delivery from injectable antimicrobial sub-micron gel particles

Jiankun Yang, The University of Queensland, Australia

P4-100 Mechanical memory in cells migrating through confining microchannels

Jia Wen Nicole Lee, Mechanobiology Institute, National University of Singapore, Singapore

P4-101 Engineered-Skin of Single Dermal Layer Containing Printed Hybrid Gelatin-Polyvinyl Alcohol Bioink via 3D-Bioprinting: Submerged vs. Air-Lifting Models(in vitro assessment)

Raniya Adiba Mohd Razif, Universiti Kebangsaan Malaysia, Malaysia

P4-102 Biocompatible Hybrid Bioink for Chronic Wounds: Gelatin-PVA Crosslinked with Genipin

Nurul Ain Ahmad Zawawi, National University of Malaysia, Malaysia

P4-103 Bioprinted Nature-derived Conductive Hydrogels for Cardiac Bioengineering

Henrique Vazão de Almeida, CENIMAT|i3N; UNL FCT, Portugal

P4-104 Adaptive core-shell assembly for sustained release of particles or drugs from nanofibrous scaffolds

Sabine Illner, Institute for Biomedical Engineering, University Medical Center Rostock, Germany

P4-105 Chemical vapor sublimation and deposition fabricated multi-hierarchical scaffold of poly(para-xylylene)/gelatin for morphological mimicry alveoli

Fang-Yu Chou, Department of Chemical Engineering, National Taiwan University, Chinese Taipei

P4-106 3D Bioprinted reproducible tissue models for translational research using the medical grade bioink CELLINK Vivoink

Itedale Namro, CELLINK Bioprinting AB, Sweden

P4-108 Optimizing cell deposition during inkjet-based bioprinting

Wei Long Ng, Nanyang Technological University, Singapore

P4-109 Acoustic patterning of microtissues for high throughput sectioning and analysis

Dhananjay Deshmukh, ETH Zürich, Switzerland

P4-110 Development of a femtosecond near-infrared laser-based cutting device for a new generation of tissue-engineered vascular grafts

Julien Vitry, BioTis, UMR 1026, INSERM, university of Bordeaux, France

P4-111 Biofabrication of engineered cartilage tissue and multilayer constructs based on Faraday wave bioassembly

Jing Zhu, Sun Yat-sen University, China

Withdrawal

P4-112 Increasing the Hydrophobicity of Polymer-Based Nanoparticles Enhances the Rate of mRNA Release and the Duration of Protein Expression

Seo-yeon Cho, Division of Biotechnology, Korea University, Korea, Republic of

P4-113 Bacteriophage-Combined Multi-modal Biomaterials for Synergetically Effective Regenerative Therapeutics

Chuntae Kim, Korea Institute of Science and Technology (KIST), Korea, Republic of

P4-114 Nucleic acid delivery potential of ε-poly(L-lysine)-based bioreducible nanogels

Hana Cho, The Catholic University of Korea, Korea, Republic of

P4-115 Highly robust multilamellar lipid vesicles fabricated by intervesicular self-assembly mediated by hydrolyzed collagen peptides

RAFIA TASNIM RAHMAN, KAIST, Korea, Republic of

P4-116 Oral Delivery of Mucoadhesive Mesalamine Prodrug Nanoassemblies to Target Intestinal Macrophages for the Treatment of Inflammatory Bowel Disease

Byeongmin Park, Biomaterials Research Center, Biomedical Research Division, Korea Institute of Science and Technology (KIST), Seoul, 02792, Republic of Korea, Korea, Republic of

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P4-117 Antifouling and nonimmunogenic ultrathin polymer coatings on neural probes for long-term monitoring of neural activity

Yunyoung Choi, KAIST/KIST, Korea, Republic of

P4-118 Modeling pulmonary fibrosis using magnetic nanoparticlces

Yu Heun Kim, Yonsei University, Korea, Republic of

P4-119 Stretchable Perovskite Quantum Dots Light Emitting Diodes for Wearable Biophotonic Applications
Kwanghyeon Park, POSTECH, Korea, Republic of

P4-120 Photostable polymeric nanoparticle containing hydrophobic Lumogen dye as cellular biomarkers
Mingyeong Kang, Pukyong National University, Korea, Republic of

P4-121 Lipid-modified DNA self-assembly and interaction with bilayer membrane using coarse-grained molecular dynamics
Eunryul Jeon, Pukyong National University, Korea, Republic of

P4-122 Selective cleavage of a covalent bond via mechanical force transmission in DNA diblock structures
Gyurin Kim, Pukyong National University, Korea, Republic of

P4-123 Prediction of DNA absorption spectrum using three-base nearest-neighbor model
Banyu Firdaus Soeriawidjaja, Pukyong National University, Korea, Republic of

P4-124 Quantum Mechanical Computations of Rylene-based Organic Fluorophores in Various Dielectric Environments
LARISSA KUPRIYANOVA, Pukyong National University, Korea, Republic of

P4-125 Type I antifreeze protein-DNA hybrid nanostructures for ice recrystallization inhibition
Jio Kang, Pukyong National University, Korea, Republic of

P4-126 Nucleic acid-based micelle incorporated with USE1-silencing siRNA for lung cancer therapy
Daeho Kwon, Pukyong National University, Korea, Republic of

P4-127 Development of immune-enhancing cell surface anchoring biologics material capable of transforming to chemoimmunotherap
Kim Hongbin, Department of Smart Health Science and Technology convergence, College of ACE, Kangwon National University, Korea, Republic of

P4-128 Development of immune cell surface engineering system using antibody-binding recombinant fusion proteins for the treatment of solid tumors
Yihyeon Kim, Department of Smart Health Science and Technology convergence, College of ACE, Kangwon National University, Chuncheon, 24341, Republic of Korea, Korea, Republic of

P4-129 GSH-responsive copper ion nanoparticles loaded mineralized injectable hydrogel sensor
A Hyeon KIM, Korea National University of Transportation, Korea, Republic of

P4-130 A Nano-Adjuvant to Engineer Lymphatic Microenvironments for Anticancer Immunotherapy
Soo-Hyang Chi, Yonsei university Mirae, Korea, Republic of

P4-131 A Carbon Monoxide Platform for Anti-Inflammation
Chae yeon Han, Chung-Ang University, Korea, Republic of

P4-132 Biofunctional inorganic-based convergence nanocarrier for atopic dermatitis treatment
Min Ji Byun, Sungsungkyunkwan university, Korea, Republic of

P4-133 Polymeric Nanozymes Targeting Neutrophil Extracellular Traps for the Treatment of Murine Colitis
Chi-Pin James Wang, Department of Biomedical Engineering, Sungkyunkwan University; Department of Intelligent Precision Healthcare Convergence, Sungkyunkwan University, Korea, Republic of

P4-134 Nasal vaccines introduce an innovative approach for treating infectious diseas
HANI CHOI, The Catholic University of Korea, Korea, Republic of

P4-135 Bioactive Nanofiber Sheets of Polylactic acid/*Sargassum horneri* for Wound Cover Patch
Yoon Seong Choi, Department of Carbon Hybrid Fiber Science, Kyungpook National University, Daegu 41566, Korea, Republic of

P4-136 FA modified PEGylated biogenic SiO2 nanoparticles with MnO2 gatekeeper for pH-triggered doxorubicin release into tumor cells overexpressing folate receptor
Tulsi Nayaju, Jeonbuk National University, Korea, Republic of

P4-137 Comprehensive study on the interactions between gold nanoparticles and cystine for ocular treatment via contact lenses
Eunbe Ha, Department of Optometry, Seoul National University of Science and Technology, Korea, Republic of

P4-138 Self-deliverable and self-immolative boronate-bridged retinoic acid dimeric prodrug nanoassemblies as a clot-targeted antithrombotic nanomedicine
Nanhee Song, Jeonbuk National University, Korea, Republic of

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P4-139 Reversible manipulation of the hierarchical ligand anisotropy for macrophage regulation
kanghyeon kim, Korea university, Korea, Republic of

P4-140 Modulation of regenerative cells via the bridging of ligands for tissue regeneration
Seong Yeol Kim, Department of Materials Science and Engineering, Korea University, Korea, Republic of

P4-141 Engineering Surface Structure of Nanomaterials Enable Ligand Trapping for Macrophage Modulation
Chowon KIM, Korea Univ., Korea, Republic of

P4-142 An inhalable mRNA nanoparticle with enhanced nebulization stability and pulmonary microenvironment infiltration
Mincheol Jang, KAIST, Korea, Republic of

P4-143 Designing Affine Poly(A) tails for Vector Stabilization and Protein Expression
Jin Kim, College of Pharmacy and Research Institute of Pharmaceutical Sciences, Gyeongsang National University, Korea, Republic of

P4-144 Combined hybrid structure of siRNA tailed IVT mRNA (ChriST mRNA) for enhancing mRNA influenza virus vaccine efficacy.
Hye Seung Song, College of Pharmacy, Gyeongsang National University, Korea, Republic of

P4-145 ACE mRNA (Additional Chimeric Element incorporated IVT mRNA) for Enhancing Protein Expression by Modulating Immunogenicity
SORA SON, Gyeongsang National University, Korea, Republic of

P4-146 Theranostic nanomaterials for rapid and enhanced separation of target molecule from the complex solution using superparamagnetic nanoclusters
Suhyun Kim, Ulsan National Institute of Science and Technology (UNIST), Korea, Republic of

P4-147 Enhancing peripheral nerve regeneration: DNA origami nanostructures as vehicles for growth factor delivery
Bo Kyung Cho, KIST (Korea Institute of Science and Technology), Korea, Republic of

P4-148 Customizable ophthalmic wearable device for color vision deficiency using Au/Ag bimetallic nanoparticles
Yejin Park, Department of Optometry, Seoul National University of Science and Technology, Korea, Republic of

P4-149 Photoactivatable Nanoparticle Elicits Anti-Immune Response by Inhibiting BRD4-cMYC-PDL1 Axis to Intensify Photo-Immunotherapy.
Ayeskanta Mohanty, Chonnam National University Medical School, Korea, Republic of

P4-150 *Escherichia coli* Adhesin Protein-Conjugated Thermal Responsive Hybrid Nanoparticles for Photothermal and Immunotherapy against Cancer and Metastasis
Juyoung Hwang, Pukyong National University, Korea, Republic of

P4-151 Nanoceria-decorated titanium supports soft tissue integration via ROS modulation and nanotopography sensing
Amal George Kurian, (1) Institute of Tissue Regeneration Engineering (ITREN), Dankook University, Cheonan 31116, Republic of Korea, (2) Department of Nanobiomedical Science & BK21 PLUS NBM Global Research Center for Regenerative Medicine, Dankook University, Cheonan 31116, Republic of Korea, Korea, Republic of

P4-152 A single base-resolution RNA purification via MOPSS for therapeutics
Eunjin Choi, Gwangju Institute of Science and Technology (GIST), Korea, Republic of

P4-153 *In situ* hypoxia modulating nano-catalase for amplifying DNA damage in radiation resistive colon tumors
Vasvani Shyam Hareshkumar, DR Cure Inc., Hwasun 58128, Republic of Korea. Department of Biomedical Sciences and BioMedical Sciences Graduate Program (BMSGP), Chonnam National University Medical School, Gwangju 61469, Republic of Korea., Korea, Republic of

P4-154 Ultrasmall gold nanoparticles (2 nm) as efficient carriers of drugs and biomolecules into cells, organoids, and bacteria
Matthias Epple, University of Duisburg-Essen, Germany

P4-155 Aptamer-immobilized bone-targeting nanoparticles in situ reduce sclerostin for osteoporosis treatment
Yuting Niu, Peking University, China

P4-156 Inorganic nanoparticles and nanocomposites for bone tissue engineering applications
Sabine van Rijt, Maastricht University, Netherlands

P4-157 Chitin nanofibril-coated bacterial cellulose electrospun mesh for tympanic membrane restoration
Bahareh Azimi, Department of Civil and Industrial Engineering, University of Pisa, Pisa, Italy

P4-158 Exploring a missing-link of immunogenicity of PEG: what we should learn for beyond biocompatibility
Koichi Shiraishi, Jikei University School of Medicine, Japan

P4-159 Nanotextured Surfaces Modulate Interfacial Water Interactions to Control Initial Protein Interactions Important for Promoting Implant Function in Humans
Thomas Webster, Interstellar Therapeutics, USA

P4-160 Potential applications of antioxidant polydopamine nanoparticles in human healthcare
Matteo Battaglini, Istituto Italiano di Tecnologia, Smart Bio-Interfaces, Viale Rinaldo Piaggio 34, 56025 Pontedera, Italy

P4-161 Therapeutic nanocapsules as smart drug delivery systems for the treatment of acute glaucoma
Jui-Yang Lai, Department of Biomedical Engineering, Chang Gung University, Chinese Taipei

P4-162 Targeted delivery of therapeutic RNA by polyvinylamine series carriers: in vitro and in vivo behaviors
Xudong Deng, Northwestern Polytechnical University, China

P4-163 Lubricin-inspired nanozymes reconstruct cartilage lubrication with an "internal-external" strategy
Yiting Lei, The First Affiliated Hospital of Chongqing Medical University, China

P4-164 Bioinspired, anticoagulative, 19F MRI-visualizable bilayer hydrogel tubes as high patency small-diameter vascular grafts
Pingsheng Huang, Institute of Biomedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College, China

P4-165 Tissue microenvironment-responsive peptide nanoshells facilitate localised drug release to ameliorate liver fibrosis
Adam Midgley, Nankai University, China

P4-166 Impact of Carbon Black nanoparticles (CBNP) on bacterial virulence and host immune system
A. Maya Nandkumar, Sree Chitra Thirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, Kerala, India., India

P4-167 Manganese dioxide nanozymes for targeting oxiditive stress in osteoarthritic joints
Blanka Sharma, University of Florida, USA

P4-169 Sensitive detection and capture of tumor cells using protein nanoparticles with multiple display of DNA aptamers and bioluminescent reporters
Kei Nishida, Tokyo Institute of Technology, Japan

P4-170 Preparation of targeting polydopamine-based carbon nanoparticles and their applications on labelling and oncolytic effects toward cancer cells
Yi-Chang Chung, Department of Chemical and Materials Engineering, National University of Kaohsiung, Chinese Taipei

P4-171 Influence of drying method and argon plasma modification of bacterial nanocellulose material on cell types involved in skin wound healing
Martina Doubkova, Laboratory of Biomaterials and Tissue Engineering, Institute of Physiology, The Czech Academy of Sciences, Czech Republic

P4-172 Poly (lactic-co-glycolic acid) (PLGA) - Based Biocompatible Nanoparticles for Solid Cancer Treatment
Mingchao Li, Department of Chemistry, The University of Warwick, Coventry, CV4 7AL UK, United Kingdom

P4-173 Biogenic and antimicrobial nanofibrous mats incorporated with polyphenols to accelerate bone repair
Aksha Dhawan, TERI-Deakin Nanobiotechnology Center, TERI Gram, India

P4-174 Glutathione-responsive nanogels for intracellular drug delivery
Stéphane Bernhard, ETH Zürich, Switzerland

P4-175 Engineering and characterization of biomimetic liposomes to study and treat acute myeloid leukemia.
Sander de Weerd, Rijksuniversiteit Groningen, Netherlands

P4-176 Multidimensional design of ionizable lipids for high-performing and organ-selective mRNA delivery
Zepeng He, Sun Yat-Sen University, China

P4-177 A coronavirus-mimic mesoporous silica nanosystem enables efficient targeted delivery of siRNA for anti-SARS-CoV-2
Jiajie Chen, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

P4-178 Understanding the biomolecular corona formation at the nano-bio interface
Vaidehi Londhe, Leibniz-Institut für Polymerforschung e.V., Dresden, Germany

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P4-179 Dynamics of artificial molecular motors in lipid membranes: insights into shape transitions and membrane modulation
Ainoa Guinart Planellas, University of Groningen, Netherlands

P4-180 Sweet Corn Phytoglycogen Dendrimers as a Lyoprotectant for Dry-State Protein Storage
Junha Park, University of Florida, USA

P4-181 Development of a P(NIPMAM) nanogel library for drug delivery
Ginevra Mariani, University Medical Center Groningen (UMCG), Netherlands

P4-182 Bioactive Phosphorus Dendrimers as a Universal Protein Delivery System for Enhanced Anti-inflammation Therapy
Huxiao Sun, Donghua University, China

P4-183 Tunable mucoadhesion and mucopenetration using self-assembled brush-block copolymer-based nanoparticles
Nate Dowdall, McMaster University, Canada

P4-184 Predictive high-throughput platform for dual screening of mRNA lipid nanoparticle blood-brain barrier transfection and crossing
Emily Han, University of Pennsylvania, Bioengineering, USA

P4-185 Biomass-derived activated biochar and nanoflake MXenes for permselective removal of saltwater via capacitive deionization
Joemer Adorna, National Tsing Hua University, Chinese Taipei

P4-186 Development of temperature response fiber thin film for biosample filtering efficiency study
JOU-HSUAN HUANG, Department of Biomedical Engineering Chung Yuan Christian University, Taoyuan, Taiwan, Chinese Taipei

P4-187 Development of magnetic temperature fiber materials for drug releasing
JOU-HSUAN HUANG, Department of Biomedical Engineering Chung Yuan Christian University, Taoyuan, Taiwan, Chinese Taipei

P4-188 Harnessing Charged-Based Phase Separation for Reactive Oxygen Species (ROS)-Responsive Messenger RNA (mRNA) Delivery Enhancement
Chloe Forenzo, Department of Chemical and Biomolecular Engineering, Clemson University, Clemson, SC, USA, USA

P4-189 Lipid nanoparticle-mediated gene editing in the mouse brain
Shuting Sarah Cai, Columbia University, USA

P4-190 Synergistic effect of eco-friendly synthesized silver nanoparticles and chitosan amplifies the response of the electrochemical sensor
Anjuman Nesa Anju, Yamagata University, Japan

P4-191 Stability of mRNA-LNP using different types of lipids before and after lyophilization
Wanqi Li, State Key Laboratory of Ophthalmology, Optometry and Visual Science, Eye Hospital, Wenzhou Medical University, No. 270, Xueyuan Road, Wenzhou, Zhejiang, 325027, China, China

P4-192 Function and protease tolerance of protein via poly (sarcosine) conjugation
Tsuda Noritomo, Kansai university, Japan

P4-193 Magnetic nanoparticle functionalization with hyaluronic acid for targeted drug delivery into a viscoelastic solution
Veronica Paltanea, National University of Science and Technology POLITEHNICA Bucharest, Romania

P4-194 Tunable marine mussel inspired nanocarrier and nanonized amniotic membrane particles laden composite formulation for ocular drug delivery and wound healing
Raja Rajeshwari Thada, 1.Department of Leather Technology, (Housed at CSIR-Central Leather Research Institute), Alagappa College of Technology, Anna University, Chennai, India 2. Biological Materials Laboratory, CSIR-Central Leather Research Institute, Chennai, India

P4-195 Ligand Installation to Polymeric Micelles for the Targeting of Pediatric Medulloblastoma
Takayoshi Watanabe, The University of Tokyo, Japan

P4-196 Temperature-responsive polymer-antibody conjugate for biomarker separation
Maggie Shen, National Taiwan University of Science and Technology, Chinese Taipei

P4-197 Enabling DNA synthesis via polymer-oligonucleotide conjugates
Karol Mai, National Taiwan University of Science and Technology, Chinese Taipei

P4-198 Synthesis of NIR-II responsive carbon nanotube-based nanocomposite hydrogels for photothermal therapy and controlled drug delivery
Yi-Jhen Lai, National Taiwan University, Chinese Taipei

P4-199 Research on Synthesis Mechanism and Drug-Carrying of Multimorphology Mesoporous Carbon@Silicon Composite Nanoparticles
Yajuan Zhao, Sichuan University, China

P4-200 Loaded Controllable Hydrogen-Producing Nanoplatform Electrospun Membrane Regulating Diabetes Wound Healing
zhaoyu xu, Sichuan university, China

P4-201 Biomimetic endothelium-like artificial nanocells with NO-releasing function for vascular antithrombotic and endothelialization
Yueyue Yang, State Key Laboratory of Medicinal Chemical Biology, The Key Laboratory of Bioactive Materials, Ministry of Education, College of Life Science, Nankai University, Tianjin, China, China

P4-202 Multifunctional layer-by-layer assembled nanoparticle gene carriers target and transform the kidney mesangium into an antifibrotic factory to mitigate renal fibrosis
Yifan Tai, State Key Laboratory of Medicinal Chemical Biology, Nankai University, China

P4-203 Integrated cascade high-entropy oxide nanozyme for enhanced ROS scavenging in neuroprotection
Chun-Yi Yang, Tsinghua University, China

P4-204 Encapsulation of βGlus/mRNA complexes in lipid nanoparticle as an oral vaccine for enhancing cancer immunotherapy
Po-Kai Luo, Department of Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan, Chinese Taipei

P4-205 Targeted Delivered Functionalized Grape-Derived Cyanidin-Loaded Mesoporous Silica Nanoparticles for Intervertebral Disc Degeneration Therapy
Juehan Wang, West China Hospital of Sichuan University, China

P4-206 Self-assembling HA-peptide Nanoparticle as Eye Drops for Treating Choroidal Neovascularization
Yu-Yi (Teresa) Wu, Taipei Medical University, Chinese Taipei

P4-207 Single-step conjugation of plasma-polymerized nanoparticles with a novel peptide-drug conjugate for cancer therapy
Elmer Jr. Austria, School of Biomedical Engineering, Faculty of Engineering, University of Sydney, Sydney, NSW 2006, Australia, Australia

P4-208 Recyclable horseradish peroxidase-mimicking nanomaterials based magnetic hematin-conjugated gelatin for preparing polyresveratrol
Anh-Quan Hoang, Institute of Applied Materials Science - Vietnam Academy of Science and Technology, Vietnam

P4-209 Amino Acid Functionalized Titanium Implants for Biofilm Elimination, Angiogenesis, and Osseointegration by Near Infrared-Driven Gas Therapy
Zheng Liu, Analytical & Testing Center, Sichuan University, China

P4-210 Nanozyme-engineered bioartificial microorganisms enabling efficient scavenging of waterborne viruses
Yuemin Zhou, Department of Chemistry, Zhejiang University, Hangzhou, 310027, China, China

P4-211 A Selective Nano Cell Cycle Checkpoint Inhibitor Overcomes Leukemia Chemoresistance
pengpeng xue, zhejiang university, China

P4-212 Structural Impacts of Cationic Polymers on Improving RNA Stability for Effective RNA Therapeutics
Heemin CHANG, Department of Materials Engineering, Graduate School of Engineering, The University of Tokyo, Japan

P4-213 Development of osmolyte-bearing polymers for protein stabilization
Enas Sakkaamini, Kyushu University, Japan

P4-214 Controlling Nanoparticle-Cell Membrane Interaction via Tuning the Structure of Janus Particles
He Xia, Shandong university, China

P4-215 Functionalization of silk fibroin nanofibers by surface immobilization of biological molecules
Ayari Miyawaki, Osaka University, Japan

P4-216 Nanoporous silica nanoparticles as potential drug delivery tool in orthopedic implant associated infections
Janin Reifenrath, Hannover Medical School, Clinic for Orthopedic Surgery, Germany

P4-217 Quantitative Assessment of the Comparative NP-Uptake Efficiency in a range of biological fluids
Tiago dos Santos, I3S, Portugal

P4-218 Exploring Keratin-Based Nanofiber Films from Human Hair for Enhanced Particle Filtration
Yang Wei, National Taipei University of Technology, Chinese Taipei

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P4-219 Harnessing intrinsically disordered protein polymers for fabricating synthetic protein condensates
Sergio Acosta, Bioforge Lab, University of Valladolid, Spain

P4-220 Self-assembled α-Ketoglutarate-loaded hyaluronic acid nanoparticles for osteoarthritis treatment
Xinli Wang, the Fourth Military Medical University, China

P4-221 MXenes-based innovative nanoarchitectonics for therapeutic and tissue regeneration abilities
Ranjith Kumar Kankala, Huaqiao University, China

P4-222 Biotemplated Flagellar Colloids for Nanoscale Actuation
Jamel Ali, FAMU-FSU College of Engineering, USA

P4-223 Structure-adjustable Fabrication of Hollow Mesoporous Silica Nanoparticles and Its Surface Modification for Anti-cancer Drug Delivery
Ngoc Hoi Nguyen, Institute of Chemical Technology - Vietnam Academy of Science and Technology, Vietnam

P4-224 Application of lanthanide metal-organic frameworks combined with bacteriophages for bacterial detection
Reuben Wang, Institute of Food Safety and Health, National Taiwan University, Taipei, Taiwan, Chinese Taipei

P4-225 Immunization against Zika by virus-entrapping self-adjuvanting hydrogel
Xiaoyu Wang, Zhejiang University, China

P4-226 Functional lignin nanoparticle fabrication and use
Pedram Fatehi, Lakehead University, Canada

P4-227 Generation and use of novel cellulose nanocrystal with charged hairy structure
Pedram Fatehi, Lakehead University, Canada

P4-228 Nanodiamond-functionalized stable suspension for the development of oral implants surfaces
Aidee Itandehui Garcia-Zintzun, Technische Universität Dresden, Dresden, Germany

P4-229 Geometric and electronic structure-matched superoxide dismutase-like and catalase-like sequential single-atom nanozymes for periodontitis recession
Withdrawal
Jingping Zhong, Guangxi Medical University, China

P4-230 Nanocharacterization of liposome-loading *Cordyceps militaris* extract: Synthesis and Bioactivity
Withdrawal
Quang Hieu Tran, Saigon Technology University, Vietnam

P4-231 Pancreatic cancer *rrsp*-mRNA therapy via a dendritic peptide-conjugated polymeric nanovector
Withdrawal
Simseok A. Yuk, Northwestern University, USA

P4-232 Phagocytosis-Enhancing Polypeptide for Cancer Immunotherapy
Seong Dong Jeong, The University of Texas MD Anderson Cancer Center, USA

P4-233 Tuning muscular and neuronal cells functions through organic smart nanomaterials
Alessio Carmignani, Istituto Italiano di Tecnologia, Viale Rinaldo Piaggio 34, 56025 Pontedera, Italy, Italy

P4-234 An Artificial Protein Modulator Reprogramming Neuronal Protein Function
Peihua Lin, Shanghai Jiao Tong University, China

P4-235 Synthesis and characterization of a piezoelectric and biodegradable nanomaterial made of Potassium Sodium Niobate
Diego Trucco, Scuola Superiore Sant'Anna, Italy

P4-236 Cobalt-based artificial nanozymes for ROS elimination and periodontitis treatment
Yimin Sun, Sichuan University, China

P4-237 Immunostimulatory nanocrystalline alloy formulated with viral peptide cocktail with broad epitope coverage.
Hongyu Wang, Westlake University, China

P4-238 Establishment of Optimal Three-Dimensional Endometrium System Using Alginate
Yoon Young Kim, Seoul National University Hospital, Korea, Republic of

P4-239 Angiogenesis and Anti-Inflammation Effect of Cardiac stem cell derived cell sheet
Mi Hee Lee, Department of Medical Engineering, Yonsei University College of Medicine, Korea, Republic of

P4-240 Development of photo-crosslinked anti-adhesion agents for nerve regeneration using dexamethasone loaded gelatin methacrylate hydrogel
Ji-Woo Park, Department of Chemical Engineering, Wonkwang University, Korea, Republic of

P4-241 Development of adipo-inductive nanofibers for engineering macro-sized adipose tissue by uniform adipogenesis of stem cell spheroids
Seong Heon Bae, Hanyang University, Korea, Republic of

P4-242 Biodegradable piezoelectric nerve conduit for enhanced neural differentiation: synergistic effects of ultrasound-driven electrical stimulation and drug release
Kavitha Gopal, Jeonbuk National University, Korea, Republic of

P4-243 Elucidating the role of cell surface free thiol groups in myogenic differentiation of skeletal muscle progenitor cells
Kim juyeon, Soonchunhyang Institute of Medi-bio Science, Korea, Republic of

P4-244 Emulating artificial physiological events using cell laden N-carboxyethyl chitosan and oxidized dextran based self-healing hydrogel modules
JaeWook Park, Department of Chemical and Biomolecular Engineering, Yonsei University, Korea, Republic of

P4-245 Application of injectable tissue putty for tendon regeneration in rat model
Seon-Hwa Kim, Industry 4.0 Convergence Bionics Engineering, Pukyong National University, Republic of Korea, Korea, Republic of

P4-246 Gene expression-based study of anti-inflammatory mechanism of decellularized cartilage extracellular matrix
Hye Yun Jeong, Industry 4.0 Convergence Bionics Engineering, Pukyong National University, Republic of Korea, Korea, Republic of

P4-247 Frequency-Dependent Responses To Electrical Stimulation In A 3D In Vitro Stroke Model
Eunmin ko, KAIST, Korea, Republic of

P4-248 Nitrosylation of β2-tubulin improved differentiated cardiomyocyte beating in ischemic mice
Jeong Eun Kim, Chungbuk National University, Korea, Republic of

P4-249 Delivery of axon guidance gene-targeted siRNA nanoparticles via dual-degradable hydrogels improves neural stem cell transplantation therapy after spinal cord injury
Seong Jun Kim, CHA university, Korea, Republic of

P4-250 Small molecules-mediated cellular rejuvenation for the restoration of youthful characteristics
Rishabh Deo Singh, Sungkyunkwan University, Korea, Republic of

P4-251 Mesenchymal stem cells with high antioxidant capacity have enhanced cartilage regenerative capacity in a rabbit chondral defect model
Gun Hee Cho, Seoul National University College of Medicine, Korea, Republic of

P4-252 Transplanting External Mitochondria Enhances Blood-Brain Barrier Integrity
So-Young Kim, UNIST, Korea, Republic of

P4-253 A new prevention and treatment method using mesenchymal stem cell spheroids with enhanced tissue regeneration capabilities for refractory osteoradionecrosis (ORN)
Guk Yeon Jo, Department of Medicine, Seoul National University College of Medicine, Seoul 03080, Republic of Korea, Korea, Republic of

P4-254 Effects of GnRH on the proliferation and functionalization of endometrial cells
JaeWan Bae, Seoul National University Hospital, Korea, Republic of

P4-255 Optimizing Flap Survival and Tissue Regeneration: Self-Oxygenating Biomaterials with Catalase-Laden Hydrogel
Sungmi Jeon, Division of Pediatric Plastic Surgery, Seoul National University Children's Hospital; Department of Plastic and Reconstructive Surgery, Seoul Metropolitan Government-Seoul National University Boramae Medical Center, Korea, Republic of

P4-256 Enhancing spinal regeneration and vertebral fusion with CF-M801 osteoblastic cells in A Goat Spine Defect Model
Hyun Sook Park, CEFO Co., Ltd., Korea, Republic of

P4-257 Amyloid nanofilm-Induced Surface Mineralization of 3D Printed Polyetheretherketone Scaffolds for In Situ Regeneration and Repair of Orbital Bones
Min Li, TianJin Medical University, China

P4-258 A degradable nanofibrous scaffold of poly(ε-caprolactone-co-lactide) for intervertebral disc regeneration
Catherine Le Visage, Nantes Université, Oniris, INSERM, Regenerative Medicine and Skeleton, RMeS, UMR 1229, F-44000, France, France

P4-259 Bioenergetic hydrogel promotes neuronal differentiation by enhancing cellular energy metabolism for spinal cord injury
Jing He, Sichuan University, China

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P4-260 Functional Recovery and Regenerative Engineering of Composite Tissue Injury in Lower Extremity Trauma
Karina Nakayama, Oregon Health & Science University, USA

P4-261 PI3K/AKT signaling pathway; a critical regulator of zinc in submandibular salivary gland development
Gulsan ara sathi Kazi, Yamagata University, Japan

P4-262 A dual-network nerve adhesive with enhanced adhesion strength promotes transected peripheral nerve repair
Wen Xue, Donghua University, China

P4-263 Cell-aggregate Inducing by Periodic Peptide-immobilized Substrate
Yoshiaki Hirano, Kansai University, Japan

P4-264 Hyaluronan coated nanoparticle gene carriers and hyaluronan-peptide hydrogels as biocompatible strategies to mitigate fibrosis
Adam Midgley, Nankai University, China

P4-265 Local SDF-1α release of cardiac-derived nanocomposites promotes cardiac repair
Yi Hong, The University of Texas at Arlington, USA

P4-266 Hydrogel-based cell mechanical microenvironment and mechano-regenerative medicine for myogenesis
Yufei Ma, Xi'an Jiaotong University, China

P4-267 Cellular response to therapeutic ions leached from organically modified layered calcium silicate
Jin Nakamura, Kyushu Institute of Technology, Japan

P4-268 Tunable Extracellular Matrix-Based Multiphasic Systems for Enhanced Rotator Cuff Repair
Zizhao Li, McKay Orthopaedic Research Laboratory, Department of Orthopaedic Surgery, Perelman School of Medicine, University of Pennsylvania, USA

P4-269 Developing patterned biofunctionalised surfaces using an atmospheric pressure plasma jet (APPJ) as a dry, cost-effective, eco-friendly, and reagent-free technique
Masoud Zhianmanesh, School of Biomedical Engineering, The University of Sydney, Australia

P4-270 Development of therapeutic agents for spinal cord injury using bioactive substances derived from porcine liver decomposition product
Ueno Rintaro, Biomedical Engineering Division, Graduate School of Science and Technology, Shinshu University, Japan

P4-271 Efficacy of physiologically active lipids derived from porcine liver decomposition products in the treatment of alzheimer's-type dementia
Masaki Mimura, Biomedical Engineering Division, Graduate School of Science and Technology, Shinshu University, Japan

P4-272 Hybrid polymer-inorganic composites with fibrillar protein in bone tissue regeneration
Dagmara Słota, Faculty of Materials Engineering and Physics, Cracow University of Technology, Poland

P4-273 Understanding of the effects of gravity-control on the proliferation and differentiation of human mesenchymal stem cells.
Kenshin Hirota, University of Toyama, Japan

P4-274 3D bioprinting and adhesive hydrogel for rotator cuff tendon-to-bone interface repair
Xiping Jiang, Shanghai Sixth People's Hospital affiliated to Shanghai Jiao Tong University School of Medicine, China

P4-275 Selenium nanoparticles as catalysts for nitric oxide generation
Shu Geng, School of Chemical Engineering and Australian Centre for Nanomedicine (ACN), The University of New South Wales (UNSW Sydney), Sydney, NSW 2052, Australia, Australia

P4-276 Microenvironment activated nanozyme-armed bacteriophages efficiently combat bacterial infection
Lulu Jin, Zhejiang University, China

P4-277 Soft tissue regeneration promoted by hydroxyapatite *via* regulation of calcium homeostasis
Shuo Liu, National Engineering Research Center for Biomaterials, Sichuan University, Chengdu, 610064, People's Republic of China; College of Biomedical Engineering, Sichuan University, Chengdu, 610064, People's Republic of China, China

P4-278 Tailoring the production technology and utilization of octacalcium phosphate for precise patient-centred applications in musculoskeletal field
Ilijana Kovrlija, Rudolfs Cimdins Riga Biomaterials Innovation and Development Centre, Institute of General Chemical Engineering, Faculty of Materials Science and Applied Chemistry, Riga Technical University, Pulka 3, Riga, LV-1007, Latvia., Latvia

P4-279 Comparison of immunogenicity of RPE and MSC cells differentiated from Universal hiPSCs on animal modal
Ling Ling, Wenzhou Medical Univercity, China

P4-280 Biomimicking grafts for vasculature repair
Jizhuo Chen, The University of Hong Kong, Hong Kong SAR, China

P4-281 Promotion of peripheral nerve system remyelination by cell sheet therapy
Pei-Yi Ou Yang, Institute of Cell Biology and Anatomy, College of Medicine, National Cheng Kung University, Chinese Taipei

P4-282 *In Vivo* Cartilage Regeneration Using Microporous Annealed Particle Scaffolds to Treat Osteoarthritis
Clare Flanagan, University of Virginia, USA

P4-283 Synthetic hydrogels promote muscle stem cell engraftment to dystrophic diaphragms
Nia Myrie, Georgia Institute of Technology & Emory University, USA

P4-284 Adipose-derived stem cells-encapsulating PLGA-PEG-PLGA/LAPONITE nanocomposite injectable hydrogels which prevent fibrosis and induce complete regeneration in skin tissue.
Hinano NISHIDA, Konan University, Japan

P4-285 Polydopamine-based double-membrane scaffolds combined with photothermal therapy for nerve repair and vascular regeneration
Jiaying Li, Sichuan University, China

P4-286 Polycaprolactone/gelatin/nano hydroxyapatite gradient multilayer fiber membrane for guided bone regeneration
Jing Wen, Sichuan University, China

P4-287 A Double-targeted Liposomal Composite Hydrogel Integrating for promoting nerve function recovery after Spinal Cord Injury
Yaosai Liu, Tsinghua University, China

P4-288 Multimodal neural sieve in preventing the traumatic neuromas and mechanical allodynia
Xiaobin Luo, Department of Orthopedics, Beijing Tsinghua Changgung Hospital, School of Clinical Medicine, Tsinghua University, Beijing, 100084, China, China
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P4-289 3D Printed Natural Polymer-based Tissue Engineering Scaffolds with Anticancer Drug Release for Liver Cancer Patients
Xinyang Zhang, The University of Hong Kong, China

P4-290 Digital Light Processing Based 3D Bioprinted Off-The-Shelf Exosome Encapsulated Scaffolds to Attenuate Non-Alcoholic Fatty Liver Disease in Animals
Triya Saha, Department of Biological Sciences and Bioengineering (BSBE), Indian Institute of Technology Kanpur, Kanpur-208016, UP, India, India

P4-291 Electric field stimulation combined with conductive fibrin hydrogel scaffolds for the treatment of spinal cord injury
Chao Ma, Tsinghua University, China

P4-292 Effect of mechanical underloading on human mesenchymal stem cell-derived tenocytes
Sepideh Shemshad, School of Chemistry and Molecular Biosciences, University of Queensland, St. Lucia, Queensland, Australia, Australia

P4-293 Preparation and osteogenesis of porous scaffolds with hierarchical structure
Huan Liu, Sichuan University, China

P4-294 Self-healing hydrogel containing decellularized liver matrix and endothelial cell-covered hepatocyte spheroids for rescue of injured hepatocytes
Xin-Yu Chou, Department of Biomechatronics Engineering, National Taiwan University, Chinese Taipei

P4-295 Altered epigenetic status and cellular mechanosensitivity in human chondrocytes during in vitro expansion
Yujia Zhang, University of Pennsylvania, USA

P4-296 Construction of neural organoids for spinal cord injury repair by remodeling a mechanics-controlled dynamic niche for neural stem cells
Jia Yang, State Key Laboratory of New Ceramics and Fine Processing, Key Laboratory of Advanced Materials, School of Materials Science and Engineering, Tsinghua University, Beijing, 100084, China

P4-297 High-throughput screening of natural compounds for bone regeneration in a molecular docking approach
Yulan Liu, Shanghai Jiao Tong University, China

P4-298 Increasing Peripheral Nerve Tissue Vascularization with Natural Polymer Based Nerve Guide Conduit Design with VEGF Surface Immobilization
Dila Hatun Sal, Department of Materials Science & Engineering, Kroto Research Institute, The University of Sheffield, Broad Lane, Sheffield, S3 7HQ, UK, United Kingdom

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P4-299 Design and evaluation of a thermoresponsive hydrogel to improve nose-to-brain stem cell therapy
Doddy Denise Ojeda-Hernandez, Neurobiology Laboratory. IdISSC. Hospital Clinico San Carlos. Universidad Complutense de Madrid, Spain

P4-300 Development of dECM-enriched microspheres mimicking pancreatic islets for clinical application
Marta Klak, Polbionica sp. z o.o., Poland

P4-301 Modification of calcium phosphate bioceramics with manganese
Bożena Tyliszczak, Cracow University of Technology, Poland

P4-302 Bioactive laser surface textured Ti/HAp/MXene biomaterials.
Agnieszka Tomala, Cracow University of Technology, Poland

P4-303 An unconventional biomaterial featuring “invite and bind” approach for cell-driven mechanical activation of growth factors for bone regeneration
Udesh Dhawan, Centre for the Cellular Microenvironment, Division of Biomedical Engineering, James Watt School of Engineering, Mazumdar-Shaw Advanced Research Centre, University of Glasgow, Glasgow, G116EW, UK, United Kingdom

P4-304 Advanced alginate-based hydrogel films for biomedical applications
Ángel Serrano-Aroca, Biomaterials and Bioengineering Lab. Centro de Investigación Traslacional San Alberto Magno. Universidad Católica de Valencia San Vicente Mártir, Spain

P4-305 Rolipram loaded PgP nanoparticles reduces secondary injury and improves motor and cognitive function after traumatic brain injury
Jeoung Soo Lee, Clemson University, USA

P4-306 Preservation Of Denervated Muscles In Long-Gap Peripheral Nerve Injury With A High Intensity Electrical Stimulation Using Hydrogel Ionic Circuit
Bin Duan, University of Nebraska Medical Center, USA

P4-307 *In vivo* generation of functional neurons with focally defined hydrogel factories
Negar Mahmoudi, University of Melbourne, Australia

P4-308 Comparison of retinal degeneration treatment with several types of stem cells and RPE cells in a rat retinal degeneration model
Qian Liu, State Key Laboratory of Ophthalmology, Optometry and Visual Science, Eye Hospital, Wenzhou Medical University, No. 270, Xueyuan Road, Wenzhou, Zhejiang, 325027, China, China

P4-309 Examining the effects of subdural electrical stimulation on axonal tract and motor function recovery following contusion spinal cord injury
Salvador Lopez, University of Auckland, New Zealand

P4-310 Living Cell Intracellular polymerization for immunotherapy, tissue engineering, synthetic biology, and drug delivery
Che-Ming Hu, Academia Sinica, Chinese Taipei

P4-311 The regulatory effect of braided silk fiber skeletons with differential porosities on in vivo vascular tissue regeneration
Xili Ding, Beihang University, China

P4-312 Developing Scaffolds with Antimicrobial Properties for Tissue Regeneration Using Low Temperature Plasma (LTP)
KOMAL VIG, Alabama State University, USA

P4-313 Evaluation of the morphological properties of organic waste
Sindor Pardaev, University Putra Malaysia/Samarkand State University, Malaysia
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P4-314 Single-Cell RNASeq of Human Dermal Microvascular Arterial and Venous Blood Endothelial Cells and Their Use in Bioengineered Dermo-Epidermal Skin Substitutes
Dominic Ruetsche, Tissue Biology Research Unit, Department of Surgery, University Children’s Hospital Zurich, Switzerland

P4-315 New Formulation of Platelet-Rich Plasma Enriched in Platelet and Extraplatelet Biomolecules Using Hydrogels
Jon Mercader Ruiz, Advanced Biological Therapy Unit, Hospital Vithas Vitoria, 01008 Vitoria-Gasteiz, Spain, Spain

P4-316 Sulfated polymer microgels for topical treatment of ulcerative colitis
Sebastian Kühn, Leibniz-Institute for Polymer Research Dresden, Germany

P4-317 Development of innovative bioabsorbable implants with de novo adipogenesis
Qiannan Zhao, Department of Plastic and Reconstructive Surgery, Graduate School of Medicine, Kyoto University, Japan

P4-318 Injectable bioactive hydrogel with multiscale structure for asynchronous dual drug release toward treating Parkinson's disease
Junpeng Xu, School of Pharmaceutical Science, Wenzhou Medical University, Wenzhou, Zhejiang, China, China

P4-319 Construction of a mineralized collagen nerve conduit for peripheral nerve injury repair
Guman Duan, Beijing Tsinghua Changgung Hospital, School of Clinical Medicine, Tsinghua University, China

P4-320 Three-dimensional liver tissue model with branched vascular networks by multi-materials bioprinting
Xin Liu, institute of zoology, chinese academy of science, China

P4-321 Cancer microenviroment-responsive MXene-carbon dots coated electrochemical biosensor for cancer cell detection
Tae Min Kim, Korea National University of Transportation, Korea, Republic of

P4-322 Facile Polyacrylate Coating for Universal Boronic Acid Functionalization
Jumi Kang, Department of Chemistry and Green-Nano Materials Research Center, Kyungpook National University, Korea, Republic of

P4-323 Phosphorylated focal adhesion kinase by mild reduction of cell surface proteins inhibits a RhoA/ROCK2-dependent adipogenic differentiation
Jihoon Jeong, Soonchunhyang Institute of Medi-bio Science (SIMS), Korea, Republic of

P4-324 Polymeric surface modification methods using surface-segregating polymeric additives with anti-fouling effect
Seungmin Kang, Center for Biomaterials, Biomedical Research Institute, Korea Institute of Science and Technology (KIST), Seoul 02792; Department of Chemical and Biomolecular Engineering, Yonsei University, 50 Yonsei-ro, Seodaemun-gu, Seoul 03722, Korea, Republic of

P4-325 In situ nitric oxide-generating heparin functionalized surfaces for highly enhanced blood-compatibility of cardiovascular devices
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P4-326 Evaluation of the biocompatibility of interface-free polymer-ceramic fusion technology using laser-driven penetration synthesis
Minseong Chae, Asan Institute For Life Sciences, Asan Medical Center, College Of Medicine, University Of Ulsan, seoul, Korea, Republic of

P4-327 Construction strategy for the functional surface of medical-enhanced MXenes@Ti long-lasting, antibacterial, and corrosion-resistant bone implants
Zhengquan Wang, Northwest Institute for Non-Ferrous Metal Research, China

P4-328 Visible light-induced covalent immobilization of poly(*N*-isopropylacrylamide) on polymeric substrate for thermoresponsive cell culture
Jun Kobayashi, Tokyo Women's Medical University, Japan

P4-329 The application of alternating-current electrophoresis to the deposition of ceramic/polymer-nanofiber composites on metallic materials for orthodontics
Tomohiko Yoshioka, Okayama University, Japan

P4-330 Smart Implant with Bacteria Monitoring and Killing Ability for Orthopedic Applications
Donghui Wang, Hebei University of Technology, China

P4-331 Surface modification of biomedical polymers with a novel compound containing both zwitterionic carboxybetaine and catechol configuration
Jui-Che Lin, Department of Chemical Engineering, National Cheng Kung University, Chinese Taipei

P4-332 Preparation and cell compatibility of vacuum-deposited tantalum coatings on TC4 alloys
Zhenlun Song, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China

P4-333 Dressing Blood-Contacting Materials by a Stable Hydrogel Coating with Embedded Antimicrobial Peptides for Robust Antibacterial and Antithrombus Properties
Fanjun Zhang, Sichuan University, China

P4-334 The role of fetuin-A on cellular attachment and proliferation of osteoblast-like cells on pristine and functionalized gold surfaces
Kyla Nicole Sask, McMaster University, Canada

P4-335 Mechanisms of hierarchical topographies tuning bacteria and cell biological responses to the surfaces of pure titanium and cu-bearing titanium alloy
Hui Liu, Institute of metal reaserch, Chinese academy of sciences, China

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P4-336 Responsive and Multifunctional Antimicrobial Surface Coatings for Combating Biomaterial-Associated Infections
Peng Li, Northwestern Polytechnical University, China

P4-337 Co-immobilization of heparin and ligand peptide on ePTFE to enhance MSCs adhesion and blood compatibility
Tsumugi Kawaguchi, Faculty of Chemistry, Materials and Bioengineering, Kansai University, Japan

P4-338 Spontaneous membrane fusion of liposomes driven by surface modification
Yuya Sato, The Univ. of Tokyo, Japan

P4-339 Functionalisation of plasma activated cell culture plates optimised by modifying substrate geometry
Xuege Feng, School of Biomedical Engineering and School of Physics, The University of Sydney, Australia

P4-340 Surface Modification of Polymers with Diazirine Molecules for Protein Immobilization
Siyuan Li, School of Biomedical Engineering, McMaster University, Canada

P4-341 Antibacterial and Anti-Inflammatory Properties of Plasma Nanotextured Silk and Chitosan Polymers
Jordan Nashed, Penn State University, USA

P4-342 Simple and green fabrication of a novel phosphate-functionalized chitosan hydrogel for dysprosium(III) recovery
John Rey Romal, Iowa State University/Grand View University, USA

P4-343 Surface modification of porcine pericardium using plasma enhanced chemical vapour deposition
Stefan Oschatz, Institute for Biomedical Engineering, Rostock University Medical Center, Germany

P4-344 Effects of surface regular and reproducible microstructure of PEEK on osseointegration
Chengli Li, School of Clinical medicine, Tsinghua University, China

P4-345 Obtaining hyaluronic acid from poultry waste and its application in regenerative medicine
Lerma Hanaiy Chan-Chan, CONAHCYT-Universidad de Sonora, Mexico

P4-346 Harnessing water binding characteristics of the ECM to detect alterations in swelling and mechanics using MRI
Matthias Kollert, Berlin Institute of Health at Charité – Universitätsmedizin Berlin, Julius Wolff Institute & BIH Center for Regenerative Therapies, Berlin, Germany; Laboratory of Applied Mechanobiology, Department of Health Sciences and Technology, ETH Zurich, Zurich, Switzerland, Germany

P4-347 Enhanced Endothelial Differentiation and Angiogenesis Induction by Mesenchymal Stem Cell Spheroids
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P4-348 Self-crosslinking cellulose hydrogel for the vocal fold rejuvenation
Jeon Jihoon, Yonsei University, Korea, Republic of

P4-349 Controlled afterglow luminescent particles for photochemical tissue bonding
Seong-Jong Kim, Pohang University of Science and Technology, Korea, Republic of

P4-350 A multi-functional film consisting of bioactive layer and anti-adhesion layer for sound tendon regeneration
Ho Yong Kim, Dankook University, Korea, Republic of

P4-351 Development of a cell/microparticle spheroid system for the treatment of osteoarthritis
Min Ji Kim, Dankook University, Korea, Republic of

P4-352 Exosome-encapsulating hydrogel for regeneration of diabetic skin wound
Seung Yeop Han, Yonsei University, Korea, Republic of

P4-353 Topological cues regulate mechanotransduction and maturation of muscle cells
Yeji Lee, Pohang University of Science and Technology (POSTECH), Korea, Republic of

P4-354 Cyclic mechanical stimulus regulates mechanotransduction of smooth-muscle cells
Geonwoo Kim, POSTECH, Korea, Republic of

P4-355 Composite hydrogels guiding cell homing to orchestrate macrophage polarization and vascularization for effective wound healing
Yujin Han, Hanyang university, Korea, Republic of

P4-356 Triethanolamine-containing Poly(Vinyl Alcohol)/Borax Hydrogel for Burn Wound Healing
Jeong Jin Park, Chungnam national university, Korea, Republic of

P4-357 Quantum Dot-Enhanced Photodynamic Antimicrobial Patch Reinforced with Mussel Adhesive Protein to Counter Multidrug-Resistant Bacteria

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P4-358 Facile PDMS Surface Modification: Dual Layer Coating To Prevent Biofouling For The Potential Use Of Urinary Tract Biomaterial

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P4-359 In situ photo-crosslinkable hydrogel incorporating bioactive self-assembled peptide nanofibers for enhanced wound healing

Sang Min Lee, Department of Integrative Biotechnology, Sunkyunkwan University, Korea, Republic of

P4-360 3D bioprinted patch with placenta-based ECM and adjustable drug release for holistic diabetic wound healing

Hye Jin Kim, Department of Convergence IT Engineering, Pohang University of Science and Technology (POSTECH), Korea, Republic of

P4-361 Strategies for Spheroids Assembly in Large-Scale Hepatic Tissue Engineering: Vascularization and Dynamic Cultivation

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P4-362 Humoral and cellular response at the wound/dressing interface and related to the patients' wound healing process: A clinical study

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P4-363 Comparisons of the effects of silk elastin and collagen sponges on wound healing in a murine model

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P4-364 Turning sublimed sulfur and bFGF into a nanocomposite to accelerate wound healing via co-activate FGFR and Hippo signaling pathway

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P4-365 Design of novel moisture-retentive, porous dressings for deep wound heeling

Andrada Serafim, National University of Science and Technology Politehnica Bucharest, Romania

P4-366 A multifunctional treatment platform containing nanodiamonds for post-tumor wound recovery

Xianglin Luo, Sichuan University, China

P4-367 Development of dermal paste using engineered biomaterial for the treatment of chronic non-healing wounds

Prasad Sawadkar, Northwick Park Institute for Medical Research /UCL, United Kingdom

P4-368 Low-dose trypsin enhances tissue repair through protease-activated receptor 2

Lei Lu, Wenzhou Medical University, China

P4-369 In vivo revascularization induced by a fibroin-based small-caliber vascular prosthesis after transplantation

Jiannan Wang, Soochow University, China

P4-370 Controlled release of decorin and decorin-derived peptides promote scarless wound healing after vocal fold injury

Riccardo Gottardi, University of Pennsylvania & Children's Hospital of Philadelphia, USA

P4-371 A drug-laden bimetallic metal organic framework incorporated hydrogel for wound healing

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Lili Yao, Wenzhou Medical University, China

P4-372 Drug-eluting bioabsorbable surgical suture potential for wound healing

Azam Ali, University, New Zealand

P4-373 Polymorphic polysaccharide bioactive hydrogel with synergistic effect through multifunctional groups to promote endometrial repair

Yudong Zheng, University of Science and Technology Beijing, China

P4-374 Evaluations of the silk fibroin properties to achieve effective wound healing

Kaho Kobayashi, Shinshu University, Japan

P4-375 A Wearable Electrotherapeutic Modality: Application of Pulsed Electric-field Generating Bandage in Combination with Antimicrobial Silk-Based Ionogel for Chronic Wound Treatment

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P4-376 Rod-shape microgel assembled scaffolds with connected pore structures for skin wound healing and reducing scars

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P4-377 Performance evaluation of modified starch as hemostatic material

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P4-378 In-situ self-oxygen supply, carrier, and sustained reactive oxygen species scavenging functionalized hyaluronic acid composite hydrogel

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P4-379 Functionalized Aligned Fibrous Hydrogels Promotes a Whole-Course-Reconstruction in Diabetic Wound Microenvironment

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P4-380 A tough, antibacterial and antioxidant hydrogel dressing for suppression of hypertrophic scars formation in infected wounds

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P4-381 Fibroblast alignment and matrix remodeling induced by a stiffness gradient in skin-derived extracellular matrix hydrogel

Fenghua Zhao, Univercity of Groningen/ University Medical Center Groningen, Netherlands

P4-382 The antimicrobial potential of cinnamon and basil essential oils in wound dressings

Alina Robu, National University of Science and Technology Politehnica Bucharest, Romania

P4-383 Poly(ethylene glycol)-hyaluronic acid composite hydrogels as a vitreous substitute

Ting Wang, Department of Ophthalmology, West China Hospital of Sichuan University, China

P4-385 Degradable Immune Instructive Microparticles for Chronic Wound Healing

Zeynep Imir, School of Pharmacy, University of Nottingham, United Kingdom

P4-386 A multi-functional self-powered biocompatible system with synergistic harvesting mechanical/electromagnetic energy and modulating reactive oxygen species for accelerating wound healing

Syun Hong Chou, National Yang Ming Chiao Tung University, Chinese Taipei

P4-387 Injectable Siloxane-based foams for in-situ rapid action hemostatic treatment

Pritha Sarkar, University of Central Florida, USA

P4-388 Copper loaded all-natural hydrogel encapsulating drug-loaded micelles for on-demand promoting angiogenesis and infected wound healing by regulating macrophage heterogeneity.

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P4-389 Aligned PCL Fibers with In-situ Generated Nanogrooves Accompanied by Nano-CuO2 Releasing Accelerates Diabetic Wound Healing

Lin Qi, Sichuan University, China

P4-390 Mixed hyaluronic acid / lysine hydrogel combined with poly-L-lactic acid / hydroxyapatite porous scaffold as injectable nasal filler

Shuhua Chang, National Engineering Research Center for Biomaterials, College of Biomedical Engineering, Sichuan University, China

P4-391 Bioactive elastin/therapeutic deep eutectic solvents composite hydrogel for diabetic wound healing and its immunomodulation mechanism

Chen Jiajia, The Seventh Affiliated Hospital, Sun Yat-sen University, China

P4-392 Treating Diabetic Fibroblasts through Therapeutic Hyaluronan-Binding Silk Fibroin Hydrogels

Amelia Huffer, South Dakota School of Mines and Technology, USA

P4-393 Blow-spun collagen/silicon nitride nanofibrous fabric with antibacterial, anti-inflammatory, and angiogenic activities for chronic wound treatment

Pengchao Ma, tsinghua university, China

P4-394 Metal-phenolic self-assembly shielded probiotics in hydrogel reinforced wound healing with antibiotic treatment

Chen Zhou, National Engineering Research Center for Biomaterials, Sichuan University, China

P4-396 Proangiogenic cyclic peptide nanotubes for diabetic wound healing
Vatan Chawla, Indian Institute of Technology Ropar, India

P4-397 3D Printed Bacterial Cellulose Based Hydrogel Patches for Wound Healing
Syed Mohammad Daniel Syed Mohamed, University of Sheffield, United Kingdom

P4-398 Antioxidant, anticancer and antibacterial type I collagen /Tannic Acid Aerogel : application in tissue engineering
Lorinne ADAM, URCA/ Laboratoire BIOS EA4691, France

P4-399 Develop an implantable medical device based on a dehydrated, sterile, viro-inactivated membrane derived from perinatal tissue
Lorinne ADAM, URCA/ Laboratoire BIOS EA4691, France

P4-400 Chitosan-Based Natural Antimicrobial for Preventing Hospital-Acquired Infections
Sushant Sawant, Clemson University, USA

P4-401 Polyelectrolyte Complexation for Quick Hemostasis
Sajjad Fanaee, School of Biomedical Engineering, Dalhousie University, Canada, Canada

P4-402 High-performance hydrogel-encapsulated engineered exosomes for supporting endoplasmic reticulum homeostasis and boosting diabetic bone regeneration
Yulan Liu, Shanghai JiaoTong University, China

P4-403 Multifunctional zinc-based carbon dot nanocomposite hydrogels for chronic refractory wounds treatment and real-time imaging
dai sheng, southwest jiaotong university, China

P4-404 ROS-scavenging hydrogel to accelerate wound healing and reduce scar formation
Xuedong Shu, Sichuan University, China

P4-405 Highly Active Frozen Nanovesicles microneedles for senile wound healing via antibacteria, immunotherapy and skin regeneration
Jingyi Xu, Shanghai Ninth People's Hospital, China

P4-406 BRD9-mediated chromatin remodeling suppresses osteoclastogenesis through negative feedback mechanism
Yili Liu, Shanghai Jiao Tong University, China

P4-407 Injectable and Adhesive Hydrogel Formulation for Exosome Delivery: A Minimally Invasive Therapeutic Strategy for the Treatment of Myocardial Infarction
Ubaid Tariq, Department of Biological Sciences and Bioengineering, Indian Institute of Technology Kanpur, Kanpur-208016, UP, India, India

P4-408 A Self-Assembling Anionic Peptide-Based Biocompatible, Antibacterial Hydrogel Platform for Mesenchymal Stem Cell Encapsulation and Delivery to Repair Diabetic Wound
Nabanita Mukherjee, INDIAN INSTITUTE OF TECHNOLOGY JODHPUR, India

P4-409 Stratifying the secretome collected within tissue-mimetic Bio-Block™ system identifies key role of extracellular vesicles in native wound healing
Jacob Hodge, University of Kansas Medical Center, USA

P4-410 Towards biomanufacturing of an innovative collagen hydrogel-based dermal template for enhanced wound healing
Le Quang Bach, Bioprocessing Technology Institute (BTI), Agency for Science Technology and Research (A*STAR), Singapore

P4-411 Incorporation of curcumin nanoparticles into hybrid polymer hydrogel for effective chronic wound treatment
SUYEON KIM, Pontificia Universidad Católica del Perú, Peru

P4-412 A thermosensitive, pH responsive injectable self-healing hydrogel for chronic wound healing
Dongdong Wan, Department of Orthopedic Surgery, Tianjin First Central Hospital, Nankai University, China

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Serena Danti, University of Pisa, Italy

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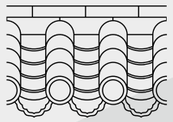

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Zeus is a global leader in advanced polymer solutions, helping customers overcome complex design and engineering challenges since 1966. Our polymer solutions include tubing, heat shrinks, and a range of specialty products such as biomaterials, monofilaments, and many more. A range of long-term implantables, including both absorbable and non-absorbable products, allow customers to push the boundaries of advanced patient care. Additionally, Zeus services for the medical device industry extend to contract design and manufacturing, allowing customers a single source for catheter design, rapid prototyping, and manufacturing. For more than 50 years, customers have depended on our best-in-class quality and technical support, global reach, and high-volume manufacturing capabilities to gain a critical competitive advantage in the market. From concept to commercialization, we are present every step of the way, providing products, services, and solutions that fuel product innovation.

Metatissue

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Metatissue® is focused on designing and manufacturing human protein-based products that find application in cell culture, tissue engineering and regeneration and disease modelling.

WONBIOGEN Co., Ltd

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WONBIOGEN is a company that specializes in medical bio new substance development and promotes national welfare and health by researching and developing highly biocompatible medical macromolecules.

ICURE PHARMACEUTICAL INC

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ICURE is biopharmaceutical company that researches, develops, and produces high-tech new drug products based on Transdermal Drug Delivery Technology which delivers drugs to the body through the skin. Our Transdermal Drug Delivery System provides novel approaches and devices to enable successful drug delivery as a form of transdermal patch. Our focused strategy is to use science-based innovation to support patients better compliance in growing areas of healthcare. We invest in the most promising frontier of transdermal drug penetration and diverse patch structure design technology. In addition, we support the most exciting innovations in the business of drug release control technology, and the manufacturing processes. Under strict processes and quality controls at the KGMP production facilities, we produce and supply products to domestics and international partners. ICURE Pharmaceutical continuously invests in the most significant healthcare needs, and contributes to improve quality of life based on an Innovative Cure Technology.

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CG Bio Inc. is a total healthcare provider with a goal of enhancing the quality of life by offering range of innovative solutions for the spectrum of spinal disorders and wound management. Through extensive research activity, CG Bio is a leading manufacturer and distributor of comprehensive portfolio of allograft and synthetic bone grafts, spinal implants, GMP grade growth factors and total wound care solution. CG Bio has state of the art facility with class 100 clean rooms, purified water system fit for human injection and qualified technicians.

OSSTEM IMPLANT

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We are the first enterprise to develop and produce dental implants in Korea. A country that once learned about dental implant technology has been spreading its advanced implant technology to other nations. Today, dental implant surgery is popular in Korea. Osstem Implant is a leading implant company in Korea that makes some of the most popular implant products both in Korea and abroad. It has developed into a total dental solution company that offers not only the physical equipment required in dentistry, but also the IT services dental clinics need. "Digital Dentistry" identifies risk factors of implant surgery in advance to help plan comprehensive and systematic surgery procedures, which is why it has become a major point of interest to everyone in the dental industry. In order to provide comprehensive solutions designed to help build an industry environment suited to digital dentistry, Osstem Implant will continue its R&D and innovation with passion and relentless determination to take on new challenges in the pursuit of new technologies.

SAMYANG HOLDINGS

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Samyang Holdings Corporation Biopharm division is a subsidiary specializing in biopharmaceutical business of Samyang Group, which was established in 1924, and is constantly tapping into the global market with a great emphasis on research and development activities, focusing on drug delivery system technology as well as biodegradable medical devices. With more than 20 years of experience in suture manufacturing and polymer technology, Samyang Holding's medical devices unit intends to further expand its portfolio of wound management products, devices for minimally invasive surgery, and medical aesthetics products.

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NovaMatrix® is at the forefront of biopolymer technology, offering ultrapure, biocompatible, and bioabsorbable alginates and methylcellulose for the pharmaceutical, biotechnology, and biomedical industries. Our products are integral to a variety of applications, including drug delivery, tissue engineering, bone putty, 3D bioprinting inks, cell encapsulation, and medical devices. With a commitment to best-in-class quality assurance, our biopolymers have been safely utilized in human applications for decades, underscoring our dedication to advancing health and science.

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NANOBIOSYSTEM is a bio-healthcare company that regenerates damaged human tissues to its original state. Our company has the world's first and the best Nano-Stem Cell convergence technology for manufacturing novel medical devices for skin, bone, eardrum, cartilage, and tendon tissue regeneration. Our company aims to be a global company that leads the intractable and aging treatment industry by replacing current collagen-based medical devices and drugs, establishing a new tissue regeneration treatment industry.

RAPHAS.Co.,Ltd

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Raphas is global leader in microneedle technology. Raphas is a microneedle patch developer and manufacturer established in 2006. We are a company that developed our own original DEN (Droplet Extension) manufacturing technology. We have commercialized a microneedle cosmetic patch based on about 74 DEN original technology patents, and in 2023, we succeeded in commercializing the world's first microneedle OTC medicine and are exporting it to the US market. Raphas is expanding own transdermal delivery drug pipeline by applying microneedle manufacturing technology to not only cosmetics but also ETC and vaccines.

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Endovision leads the medical device industry with innovative products spanning bio products, spine, orthopedics, gynecology, veterinary medicine, 3D printing, and more. We are a medical device company dedicated to researching, developing, and manufacturing a diverse range of products across the medical field.

NEXTBIOMEDICAL CO., LTD

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NEXTBIOMEDICAL CO., LTD. is a company that develops and globally exports innovative medical device. Since its establishment in 2014, the company has developed products reflecting the clinical unmet needs, such as endoscopic hemostatic system and vascular embolization microspheres. Our company has been recognized for its technology and innovative aspects of its products through KFMDS, as well as certifications including CE-MDR in Europe and FDA in the United States, incorporating novel medical technologies.

JBKLAB

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JBKLAB is a biotechnology company dedicated to researching and developing natural materials. Through innovative technology and diverse research, JBKLAB has achieved remarkable success in the fields of health functional foods and pharmaceuticals. JBKLAB has developed Nano Complex technology by combining Aronia's anthocyanins and negatively charged polysaccharides. This technology demonstrates superior stability and bioavailability compared to single ingredients, exhibiting excellent antioxidant efficacy by enhancing bioactivity within the body. JBKLAB is developing health functional foods suited to age, gender, and preference based on natural ingredients. We also aim to increase convenience and compliance through differentiated formulation research. Our research extends beyond health foods. With expertise in evaluating over 20 new drug candidates and disease-specific assessment technologies in areas such as the central nervous system, tumors, autoimmune diseases, and cardiovascular treatments, JBKLAB is pursuing an innovative anticancer drug program that combines novel and differentiated targeting strategies with immunotherapies. Furthermore, we possess a diverse pipeline for developing low molecular weight synthetic drugs targeting breast cancer, collaborating with hospitals for development. JBKLAB is actively engaged in research and development across various fields including natural materials, anticancer agents, and more. We are committed to continuing our efforts in innovative technology and research to deliver health and happiness to even more people in the future.

EVONIK Health Care

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Evonik Health Care is in charege of the biomedical division of Evonik Industires AG in Germany and provides a wide range of products and services applied to pharmactueicals and medical devices. In particular, we provide functional polymers and C(D)MO services used in Oral drugs, Parenteral drugs, Biologics and Medical Devices to customers around the world.

CleCell Co., Ltd.

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Clecell is a company that specializes in producing and commercializing 3D Bioprinters and produces 3D human tissues for regenerative medicine and precision medicine.

Dotter, Inc.

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DOTTER is a globally patented technology-based healthcare company that provides solutions for diagnosing and treating lesions that cause ischemic heart disease. As a company established by a combination of cardiovascular specialists and the best experts in Korea and the world in the field of optical coherence tomography (OCT), we are designing and producing sophisticated biodegradable stents (BRS) that are 1/3 the thickness of competitors. In addition, we are mainly developing next-generation OCT equipment, which is optical imaging equipment that can create a synergistic effect for stent insertion.

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QuadMedicine is a microneedle company developing pharmaceutical microneedle products based on various microneedle platform technologies. Microneedles are micro-structures with several hundred micrometers in height and can deliver APIs into the skin in a minimally invasive manner. QuadMedicine provides a wide range of services, including formulation development, MAP prototyping, and MAP production for preclinical and clinical trials. We envision improving the quality of life for all through advanced MAP technologies and are committed to addressing global health disparities by continuous innovation.

SNVIA

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SNVIA is a subsidiary of Pusan National University Technology Holding Company, established based on embedded microneedle and biopolymer technology for transdermal drug delivery.
Based on the "transdermal drug delivery source technology" owned by Pusan National University, SNVIA is developing therapeutic polymer products such as various medical microneedles, surgical glue, and anticancer agents. We'll put effort and enthusiasm into research and development so as to develop high value medical devices and medicines that can contribute to improving the life of patients by cooperating with pharmaceuticals. With the PNU's outstanding technology, SNVIA will continue the research and development to be a global venture business.

META BIOMED CO., LTD

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Since its foundation in 1990 as a manufacturer of medical devices to contribute to the development of health & medical industry, META-BIOMED CO., LTD., has manufactured excellent products such as not only biodegradable surgical sutures but also dental products through sustained R&D and are exporting such products to over 80 countries including the USA and Europe creativity and challenge. As a result of positively focusing on R&D investment as a technology-intensive small/medium enterprise since its foundation, the company could be positioned as an enterprise that is capable of manufacturing superior products being acknowledged at home and abroad including world best products and localized products being selected as the products of new technology. In addition, in order to grow one step further as an enterprise specialized in high-tech bio-engineering, a research on bone restoration materials for orthopedics has been progressed as a new technology project of next generation and this project is currently under the stage to get permission for mass production. As a result of this sustained R&D effort, META-BIOMED will grow as a creative enterprise in the field of bio-engineering and in order to achieve this objective, all our staff members are pursuing a new value creation. To fulfil social responsibility towards human life and health, all the staff members of META-BIOMED will do their respective best in order to make our company that may provide satisfaction to the society and customers while contributing to the development of medical industry under the spirit of creativity and challenge.

Hudens-bio

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Hudens Bio Co.,Ltd. is the ONLY company in Korea that manufactures all 3 major fields of dental material components (polymeric resins, dental porcelain and ceramics, and dental burs/alloys, as well as bone graft substitutes). As we expand our product portfolios from the dental field to bio-level specialties, we are proud to represent our self as the top-tier dental materials manufacturer. The core of medical industry is "Material" itself. Our continuous efforts in Research and Development to become the Global Medical Material Expert is still ongoing. With continuous investments in human resource and technology, HudensBio will soon "LEAD" the market.

Orthotech

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ORTHOTECH was established in 2003 with orthopedic implants as its main business. We expanded by having a research center built end of 2022 to research, develop, and manufacture human tissue grafts and wound care as our new business model. Our main product include Human tissue that is used as a replacement and transplant to patients who have lost or damaged certain tissue due to an accident or disease to help restore physical impairment or prevent further damage, also a Wound dressing product usedfor the care and protection of wounds in areas where the skin barrier has been damaged. Lastly our main product which is orthopedic implant that can be used in fractures and corrections. We will continue to launch the market range to show a variety of products needed in medical market.

PHARMARESEARCH

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PharmaResearch, Established in 1993, PharmaResearch has diversified its business by providing pharmaceutical license consulting and engaging in the import and sales of innovative pharmaceuticals. Through significant milestones, company has solidified its position as a comprehensive pharmaceutical manufacturer, such as completion of the pharmaceutical manufacturing technology of regenerative substance PDRN derived from marine resources as the first in Korea in 2009; GMP pharmaceutical factory certification in 2013; public listing on the KOSDAQ in July 2015; and being selected as an innovative pharmaceutical company in 2016. In addition, PharmaResearch is enhancing its portfolio with DOT™ PDRN-based pharmaceuticals, aesthetic medical devices, and derma cosmetics. Company is building a pipeline for 'Total Aesthetic Solution,' including a lineup of botulinum toxin preparations through business expansion for its second leap in the anti-aging market. Furthermore, all employees will continue our efforts until the day we are recognized as a global pharmaceutical leader in the enhancement of quality of life and regenerative medicine, through strengthening our network with outstanding domestic and international research institutions and global bio-companies. Your continuous encouragement for the development and growth of PharmaResearch are highly appreciated Thank you.

Medpark Co., Ltd.

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MedPark is a specialized regenerative medicine company, dedicated to serving as a solution provider for overall bodily regeneration, including bone, skin, and organ.

Our mission is to offer a new lease on life to those who have suffered from illness or injury through cutting-edge innovations.

Based upon 30 years of bio material research, Medpark has developed fundamental technology in the medical regeneration field, which led to the acquisition of the first patent of bone graft manufacturing technology of Korea in 2000. Since then, Medpark has commercialized a variety of medical products covering bone, skin, and human soft tissues.

MedPark operates the largest manufacturing facilities in the Asia-Pacific region.

We manufacture human-derived and animal-derived products in accordance with global quality standards at our three manufacturing facilities.

SunP Boyuan (Beijing) Biotechnology Co., Ltd

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SunP Biotech is a high-tech enterprise located in Zhongguancun, Beijing, China. Based on proprietary 3D bioprinting technologies, SunP is devoted to developing innovative 3D bioprinting equipment, bioinks and advanced 3D bioprinting products for personalized tissue engineering, cancer study, high-end medical devices and drug testing.

Wiley

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Wiley champions the seekers, the changemakers, the innovators; those who see knowledge as a force for good. A trusted leader in research and learning, our pioneering solutions and services are paving the way for knowledge seekers as they work to solve the world's most important challenges. We are advocates of advancement, empowering knowledge-seekers to transform today's biggest obstacles into tomorrow's brightest opportunities. With over 200 years of experience in publishing, we continue to evolve knowledge seekers' steps into strides, illuminating their path forward to personal, educational, and professional success at every stage. Around the globe, we break down barriers for innovators, empowering them to advance discoveries in their fields, adapt their workforces, and shape minds.

Exhibition

Daegu Medical Wellness Tour

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Korea No.1 Medical Special City. Daegu's medical infrastructure, equipped with 5 advanced hospitals, approximately 3,800 hospitals and clinics, and 21,200 medical personnel, is already recognized as world-class in the field of research and treatment of incurable diseases. From 2015 to 2022 , Medicity Daegu has won the Korea Representative Brand Award 8 times in a row. Based on the brand value of Medicity Daegu, the medical tourism industry centered on 58 leading medical institutions, including health checkup, beauty, plastic surgery, and dentistry, is raising its status as a medical hub city in Korea and the world.

cellArtgen

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Toward regenerative medicine by merging the cutting-edge technologies of organoids and biomaterials.

성균관대학교 BT강소기업 상생지원센터 (SKKU BT-S CENTER)

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Biomaterials Research, a Science partner Journal

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The open access journal Biomaterials Research, published in association with the Korean Society for Biomaterials, covers the interdisciplinary fields of biomaterials research, including novel biomaterials, cutting-edge technologies of biomaterials synthesis and fabrication, and biomedical applications in clinics and industry.

CellScale Biomaterials

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CellScale Biomaterials Testing is the industry leader for precision biomaterials test systems. For over 20 years, our products have been used at world-class organizations around the world. CellScale's technologies are improving human health by helping researchers discover the causes of disease, improve medical treatments and devices, and advance regenerative medicine and other basic science research. Visit our website or contact us to learn how our innovative products can help you achieve your research and development goals.

New Material Technology, Soochow Xianjue

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New Material Technology,Suchow Xianjue Co., Ltd. is a new company jointly created by a technical management team from China and Germany. Founded in December 2022, the company has two GMP standard research and development sites in Suchow with a total of 3000 square meters. The total investment in R & D has exceeded 20 million, equipment investment including BIO-RAD, qPCR instrument, biological 3D printer, organoid 3D printer and Anton-Paar rheometer. The main goal of the company is to promote the incubation of scientific research projects under the concept of "open innovation", promote the industrialization of new materials, promote the industrialization of scientific research achievements and finally realize the comprehensive cycle of high-end biomedical materials.

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Biomatrik, established in 2007, is a leading provider of monodisperse PEGs in the world. Biomatrik provides thousands of PEGylated reagents and linkers.

Joymed Technology

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A pioneer in scholarly, open access publishing, MDPI has supported academic communities since 1996. Based in Basel, Switzerland, MDPI has the mission to foster open scientific exchange in all forms, across all disciplines.

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Beijing Panospace Biotech Co., Ltd. was founed in 2018 in Beijing, which mainly focus on developing biomedical instruments and providing solutions for customers of institute, academies, hospitals and companies all over the world.

Collagen Solutions

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Advances in regenerative medicine are helping to restore mobility, renew dignity, and enhance and save lives. Collagen Solutions enables these advances by providing bovine and porcine biomaterial supply, product development and contract manufacturing services to industry leaders across the globe. We have experience in the cardiovascular, orthopedic, dental, wound care and neurology markets. Trust Collagen Solutions with your next biomedical project. For over 20 years Collagen Solutions has partnered with leading pharmaceutical and medical device companies to help develop their innovative products. By working collaboratively with our customers, we can help make your next regenerative medicine project a reality. Based out of Eden Prairie, MN, with additional locations in Scotland, Korea, and New Zealand, Collagen Solutions should be your trusted choice for lifesaving, medical biomaterial solutions.

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Taking the lead in high-resolution 3D printing UpNano is a system provider for high-resolution 3D printing. In addition to the development, production and manufacturing of printing systems and the corresponding operating software, UpNano offers printing materials and accessories optimized for the process. Quality and environmental awareness are two fundamental prerequisites which are reflected in the ISO 9001 and 14001 certifications of the company.

CELLINK

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As the leading 3D bioprinting company, CELLINK is committed to providing the most advanced 3D bioprinting products, services and technologies needed to understand and master biology. We develop technologies that democratize 3D bioprinting - providing the leading researchers in the world the tools they need to create the future of health.

T&R Biofab ((주)티앤알바이오팹)

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T&R Biofab Co., Ltd. researches, develops, and manufactures biopharmaceuticals, biomaterials, and medical devices based on unequaled 3D bioprinting technology.

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Hello. Koreascientech Co., Ltd. is a company that grows based on customer trust. We supply portable XRF (S1 TITAN Series, Tracer 5g) and Micro-XRF (M4 TORNADO Series), which are inorganic analysis measurement equipment from Bruker in Germany, as well as various sample preparation equipment. Through continuous research and technology development, we will grow into a company that can meet customers' needs.

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FUST Lab Co. Ltd. specializes in developing and manufacturing equipment that achieves extremely uniform nano-scale dispersion/emulsification without surfactants, using Circle-type Focused Ultrasonic Technology.

Anton Paar Korea

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Anton Paar develops, produces and distributes highly accurate laboratory instruments and process measuring systems, and provides custom-tailored automation and robotic solutions. It is the world leader in the measurement of density, concentration and CO2 and in the field of rheometry. Anton Paar GmbH is owned by the charitable Santner Foundation. Over 4400 employees at the headquarters in Graz and the 37 sales subsidiaries worldwide ensure that Anton Paar products live up to their excellent reputation. The core competence of Anton Paar - high-precision production – and close contact to the scientific community form the basis for the quality of Anton Paar's instruments.

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NeoScience develops and sells a Fluorescent In Vivo Imaging System. And we are develops the Luminescent In Vivo Imaging System, DNA gel Imaging System and Western Blot Imaging System.These are devices that obtain macro images without magnification, unlike microscope images. It is a device that obtains and analyzes images from various biological samples, including DNA and protein images, cancer cell and stem cell tracking, drug tracking and gene expression confirmation at the individual level.NeoScience is growing into a company specializing in imaging devices.

BioActs BM&S

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The history of Boryung began in 1957 with the opening of the Boryung Pharmacy in Jongno 5-ga, based on the spirit of the founder Kim Seung-ho, who used to ride his bicycle around the city to get medicines for sick people no matter how hard they were to find. Boryung, which had been in the pharmaceutical wholesale industry, advanced into the pharmaceutical manufacturing in 1963. Boryung's attempt to invest in the development of vital medicines for patients, rather than being a mere drug manufacturer, llaid the foundation for long-term growth in the pharmaceutical business when the company released "Kanarb," the first ARB antihypertensive in South Korea in March 2011. In April 2022, Boryung will hold the first Care in Space (CIS) Challenge to find new opportunities and fulfill its mission to become "an indispensable contributor to human health" in the space era that lies ahead of us. The founder's deep devotion with great sincerity to provide "medicine for the sick" has been expanded since 1957 and passed onto our current mission to become an indispensable to human health. We kindly ask for your consistent attention to our new challenges and journey under the new name Boryung in 2022. Thank you.

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simultaneously developing education and research programs in the fields of aeronautics, astronautics, and marine technology engineering. It is now affiliated to the Ministry of Industry and Information Technology (MIIT). Since the establishment of the People's Republic of China (PRC), NPU has always been one of the nation's key universities. It was one of the first universities to enter into the 211 Project in 1995 and the 985 Project in 2001. The School of Life Sciences, Northwestern Polytechnical University, formerly known as the "Faculty of Life Sciences", was established in April 2004. It has been officially renamed to the current one since it became the 15th academic school of the university in March 2010. The Key Laboratory for Space Bioscience & Biotechnology established by MIIT became the first key lab specialized in space biology and biotechnology in Chinese universities.

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Westlake University, located in the picturesque city of Hangzhou, is a new type of research university, a first in the history of modern China. It is both supported by public and private funding and a vanguard in the reform of the higher education system in China. With its predecessor Westlake Institute for Advanced Study established in 2016, Westlake University is striving to cultivate top talent, to make breakthroughs in basic research and innovation in cutting-edge technologies, and to foster human development through science and technology.The School of Engineering is devoted to frontier research in applied sciences and innovation of technologies to advance human well-being sustainably. We aim to establish key strengths at the cutting edge in science and technology through interdisciplinary research, training of forward-thinking students, and recruitment of top talents from around the world. We train the next generation of engineers to develop creative ideas and solutions. By applying our strengths, we inspire others to solve global challenges facing our world.The Biomedical Engineering (BME) program aims to create new knowledge at the biotic/abiotic interfaces and enabling technologies for improving human health. Bridging engineering, life science and medical needs, we are revolutionizing approaches to understand, detect, and treat diseases through integrative research, education, and entrepreneurship.

2025 TERMIS-AP

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The 2025 TERMIS-AP conference is the biannual meeting of the Tissue Engineering and Regenerative Medicine International Society, Asia-Pacific Chapter. This conference will be held in October 2025 in Wuhan, China.

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Biofriends Inc.

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Biofriends, Inc. is a company that strives to reconstruct complex tissues tailored to patients by using biomaterial-based bioink. In addition, we are working on clinically applicable medical devices for effective tissue regeneration.

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MindHub Inc is is a company that develops AI-based computerized cognitive rehabilitation training software We provide rehabilitation training content development and AI-based personalized One-Step solutions for patients with cognitive decline due to stroke, aging, or cranial nerve damage. We are the only company in Korea that provides personalized training curriculum through AI. It measures an individual's cognitive ability level through a basic test and applies an AI-based dynamic difficulty adjustment system to apply the optimal training content to the trainer.

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Dental bio material Company

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Currently, Innoregen sells bioinks (Gel4Cell, Col4Cell, hCol4Cell), cosmetics (collagen hydrogel mask pack), and wound dressings, and is about to launch a 3D cell culture agent (Innogel).

Society For Biomaterials(USA)

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Society For Biomaterials
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The Society For Biomaterials is a multidisciplinary society of academic, healthcare, governmental and business professionals dedicated to promoting advancements in all aspects of biomaterial science, education and professional standards to enhance human health and quality of life.

European Society for Biomaterials (ESB)

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ESB European Society for Biomaterials

The ESB promotes and develop research, progress and information concerning the science of biomaterials, encourage progress in the field of biomaterials in all its aspects, including research, teaching and clinical applications, as well as to foster any other activity pertinent thereto. The ESB promotes the propagation of scientific information through publications and meetings, co-operate with other scientific organizations, governmental and private bodies, both national and international, in order to establish regulations and standards for biomaterials.

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academic society relating to the biomaterials in Japan

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The Chinese Society for Biomaterials (CSBM), formerly known as the Chinese Committee for Biomaterials (CCBM), is a non-profit organization approved by the Ministry of Civil Affairs of China. CSBM has over 5100 members and 23 sub-societies. The goals of the society include: to provide a multidisciplinary exchange and communication platform for academic, industrial, governmental and regulatory professionals of biomaterials, to advance the biomaterials science, education, clinical applications and industry, and to promote the international communication and collaboration in the field of biomaterials. CSBM is one of the six founding members of the International Union of Societies for Biomaterials Science and Engineering (IUSBSE).

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Congress Bag Insert

Korean Fund for Regenerative Medicine

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KFRM was established in 2021 to coordinate the regenerative medicine research and development(R&D) project jointly funded by the Ministry of Science and ICT and the Ministry of Health and Welfare of Republic of Korea with USD 462M for 10 years(2021-2030).
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Please note that these important changes were made on-site during the congress and were not reflected in the printed program book.

Concurrent Symposium No-show List

Concurrent Symposium 1 (S1-11)

S1-11-6 May 27 (Mon) 14:10~14:20 Room 321-B

IN VITRO HYDROGEL-BASED MODELS TO OBSERVE GLIOBLASTOMA SPHEROID GROWTH, INVASION AND THERAPY RESPONSIVENESS AT MATRIX INTERFACES
Eya Ferchichi / *Saint Louis University, USA*

Concurrent Symposium 3 (S3-2)

S3-2-3 May 27 (Mon) 17:10~17:20 Room 325-CD

Stable and Homogeneous SPION-infused Photo-Resins for 3D-Printing Magnetic Hydrogels
Ali Mohammed / *Imperial College London, United Kingdom*

Concurrent Symposium 4 (S4-11)

S4-11-4 May 28 (Tue) 10:25~10:35 Room 321-B

A 3D *in vitro* cortical tissue model For Studying effects of ionizing radiation on human neuronal network function
Chiara E Ghezzi / *University of Massachusetts Lowell, USA*

Luncheon Seminar 1 (LS1-1)

LS1-1-1 May 28 (Tue) 12:20~12:28 Room 325-AB

Kam W. Leong / *Columbia University, USA*

Concurrent Symposium 5 (S5-10)

S5-10-4 May 28 (Tue) 14:35~14:45 Room 321-A

Surface-protein interactions on additively manufactured CoCr alloy for biomedical application
Thomas Luxbacher / *Anton Paar GmbH, Austria*

Workshop 3 (W3-1)

W3-1-1 May 28 (Tue) 16:30~17:00 Room 211

Kam Leong / *Columbia University, USA*

W3-1-4 May 28 (Tue) 17:50~18:15 Room 211

Hyung-Jun Im / *Seoul National University,Korea, Republic of*

Concurrent Symposium 9 (S9-6)

S9-6-5 May 29 (Wed) 17:35~17:45 Room 322

Mito-engine equipped with coolant: a bioenergetic hybrid hydrogel for propelling intervertebral disc repair
Juehan Wang / *West China Hospital of Sichuan University, China*

Concurrent Symposium 9 (S9-11)

S9-11-5 May 29 (Wed) 17:30~17:40 Room 321-B

AI Augmented 4D Bio-printed High-performance Invitro Disease Model of Oral Submucous Fibrosis.
KANIKA SINGROHA / *All India Institute of Medical Sciences Jodhpur- Indian Institute of TechnologyJodhpur, India*

Concurrent Symposium 9 (S9-13)

S9-13-4 May 29 (Wed) 17:25~17:35 Room 320-B

MXene-Decorated Nanofibrous Membrane with Programmed Antibacterial and AntiInflammatory Effects via Steering NF-κB Pathway for Infectious Cutaneous Regeneration
Shuai He / *sichuan university, China*

Oral Session 3 (OS3-4)

OS3-4-2 May 30 (Thu) 08:40~08:50 Room 324-B

Bone response and degradation behavior of porous magnesium-strontium scaffolds in segmental defect regeneration
Weidan Wang / *Affliated Zhongshan Hospital of Dalian University, China*

Oral Session 3 (OS3-7)

OS3-7-4 May 30 (Thu) 09:00~09:10 Room 306-A

Mechanical Properties, Biodegradation Behavior and Biocompatibility of Zn-Fe-Mg Alloy Membrane Produced by Powder Metallurgy for Guided Bone Regeneration Application
Kun YU / *Central South University, China*

Concurrent Symposium 10 (S10-5)

S10-5-6 May 30 (Thu) 10:45~10:55 Room 323

A novel TAVR device with fish swim bladder as valve leaflets
Zhihong Wang / *Institute of Biomedical Engineering Chinese Academy of Medical Sciences and Peking Union Medical College (CAMS&PUMC), China*

Concurrent Symposium 11 (S11-9)

S11-9-4 May 30 (Thu) 14:30~14:40

A thermo-responsive shape-memory polymer to enable the minimally invasive delivery of an implantable blood pressure measurement device
Arjan Sall / *Healthcare Technologies Institute, School of Chemical Engineering, University of Birmingham, United Kingdom*

S11-9-5 May 30 (Thu) 14:40~14:50 Room 314

The well-designed nanobubbles for vascular inflammatory imaging
Fang Yang / *Southeast University, China*

Concurrent Symposium 13 (S13-8)

S13-8-5 May 31 (Fri) 10:35~10:45 Room 306-B

One Produces Multi: A Drug-free Cardiovascular Stent Functionalized with Tailored Collagen Supports in-situ Healing of Vascular Tissues
Haoshuang Wu / *Sichuan University, China*

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Poster Session No-show List

P1-006 May 27 (Mon) 18:00~19:00

Borosilicateglass(BSG) cement sequentially modulates immunity, angiogenesis, and osteogenesis to facilitate critical bone defect repair
Haobo Pan / *Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China*

P1-035 May 27 (Mon) 18:00~19:00

Bio-inspired nacre-like ceramic composites for dental and orthopaedic applications
Bo Su / *University of Bristol, United Kingdom*

P1-047 May 27 (Mon) 18:00~19:00

The biological properties of 3D-printed degradable magnesium alloy WE43 porous scaffolds via the oxidative heat strategy
chaoxin wang / *Peking University Third Hospital, China*

P1-065 May 27 (Mon) 18:00~19:00

The effect of pore size on the mechanical properties, biodegradation and osteogenic effects of additively manufactured magnesium scaffolds
chaoxin wang / *Peking University Third Hospital, China*

P1-136 May 27 (Mon) 18:00~19:00

Indocyanine green-carrying PEGylated chitosan-decorated polydopamine nanoparticles with robust glutathione-depleting capability and photothermal effect for self-reinforced tumor phototherapy
Wen-Hsuan Chiang / *National Chung Hsing University, Chinese Taipei*

P1-149 May 27 (Mon) 18:00~19:00

V-polydopamine-based nano-enzyme hydrogel for inhibiting melanoma recurrence and promoting skin defect repair
Jun Cao / *Sichuan University, China*

P1-151 May 27 (Mon) 18:00~19:00

Cyclic peptide / polymer conjugates for therapeutic applications
Sebastien Perrier / *University of Warwick, United Kingdom*

P1-199 May 27 (Mon) 18:00~19:00

One stone two birds strategy based on nano-photosensitizers constructed via a non-cyanine dye for deep NIR excited PDT and PTT
Dawei Jiang / *Affiliated Cixi Hospital, Wenzhou Medical University, China*

P1-204 May 27 (Mon) 18:00~19:00

ATP-Responsive Manganese-Based Bacterial Materials Selectively and Synergistically Activate the cGAS-STING Pathway for Tumor Immunotherapy
Huang Yang / *Zhejiang University, China*

P1-214 May 27 (Mon) 18:00~19:00

Tumor targeted ROS-sensitizing metal laden Polymeric Nanoparticles
geumbyeol Park / *KIRAMS(Korea Institute of Radiological and Medical Sciences), Korea, Republic of*

P1-250 May 27 (Mon) 18:00~19:00

Inorganic-organic hybrid nanoparticles from amorphous calcium phosphate clusters for biomedical applications
Xing Zhang / *Institute of Metal Research, Chinese Academy of Sciences, China*

P1-251 May 27 (Mon) 18:00~19:00

Mesoscale structure regulation and functionalization of collagen biomaterials
Xue Qu / *East China University of Science and Technology, Shanghai, China*

P1-252 May 27 (Mon) 18:00~19:00

Microstructure modification and properties regulation of Mg-Zn-Nd alloy
Gao Ming / *The Institute of Metal Reserach, Chinese Academy of Sciences, China*

P1-256 May 27 (Mon) 18:00~19:00

An off-the-shelf artificial blood clot hydrogel neutralizing multiple proinflammatory mediators for pro-regenerative periodontitis treatment
Yini Huangfu / *Tianjin University, China*

P1-295 May 27 (Mon) 18:00~19:00

Plant-derived bio-machinery achieved potent therapy for solid tumors and acute kidney injury by metabolic reprogramming
Yao Lei / *Peking University Health Science Center, China*

P1-311 May 27 (Mon) 18:00~19:00

In vitro and in vivo degradation correlations for polyurethane foams with tunable degradation rates
Mary Beth Monroe / *Syracuse University, USA*

P1-313 May 27 (Mon) 18:00~19:00

Towards development of a high-corrosion resistance Mg alloy and beneficial microenvironments for bone regeneration with Sc-assisted growth of passive film
zhengguang Wang / *The third hospital of Peking university, China*

P1-340 May 27 (Mon) 18:00~19:00

Swift Eradication of Staphylococcus aureus Using Sonodynamic Au@Cu2O Hybrid Nanocubes
Kelvin Yeung / *The University of Hong Kong, Hong Kong SAR, China*

P1-341 May 27 (Mon) 18:00~19:00

One-step multifunctional medical device coatings resisting ESKAPE pathogen colonization
Helmut Thissen / *CSIRO, Australia*

P1-348 May 27 (Mon) 18:00~19:00

Novel antimicrobial PG-coated urinary catheters with zwitterionic copolymers and light-activated chlorophyllin
Wei-Bor Tsai / *National Taiwan University, Chinese Taipei*

P1-350 May 27 (Mon) 18:00~19:00

Structural designs of cationic polymers as nitric oxide carriers for efficient antibacterial applications
Dong Ma / *Jinan University, China*

P1-355 May 27 (Mon) 18:00~19:00

Cascade amplification nanotechnology for highly sensitive and rapid detection of pathogenic bacteria
Zhentan Lu / *Wuhan Textile University, China*

P1-361 May 27 (Mon) 18:00~19:00

Bioadhesive Hydrogels with Ultrafast Gelation Promote Gastric Ulcer ealing and Arrest Acute Gastric Hemorrhage
Xiayi Xu / *South China University of Technology, China*

P1-371 May 27 (Mon) 18:00~19:00

A Universal, Facile N-Alkyltriolamine-Based Dual-Functionalization Strategy for Non-Leaching Lubricating/Antibacterial Medical Catheter Coatings
ruyi jiang / *Beijing University of Chemical Technology, China*

P1-435 May 27 (Mon) 18:00~19:00

Paper-based potentiometric sensor integrated with polymeric hydrogel for sodium ion detection in human urine
Kanyapat Teekayupak / *Electrochemistry and Optical Spectroscopy Center of Excellence (EOSCE), Department of Chemistry, Faculty of Science, Chulalongkorn University, Thailand*

P1-469 May 27 (Mon) 18:00~19:00

Interactive Rapid Coagulation Testing (iRCT): Advancing Cardiovascular Diagnostics with Paper-Based Microfluidics and AI
Lining (Arnold) Ju / *The University of Sydney, Australia*

P2-013 May 28 (Tue) 18:00~19:00

Mxene-based Biointerface Machine Learning Integrated Workflow for Applications in Predicting Schwann Cell Viability
Yi-Chen Li / *Department of Chemical Engineering, Feng Chia University, Chinese Taipei*

P2-034 May 28 (Tue) 18:00~19:00

sPIF-Loaded Hyaluronic Acid Hydrogels Reduce Inflammatory Action and Provide Neuroprotection in Multiple Sclerosis Models
Mansoor Al-waeel / *CÚRAM, SFI Research Centre for Medical Devices, University of Galway, Ireland*

P2-043 May 28 (Tue) 18:00~19:00

The biomimetic approach for size-controlled hydroxyapatite particle nucleation in natural rubber latex membranes
Rodrigo Marques / *Chemistry Institute, UNESP, Brazil*

P2-048 May 28 (Tue) 18:00~19:00

Development of β-Si_3N_4-SiO_2 glass-ceramics for biomedical applications
Huasi Zhou / *Uppsala University, Sweden*

P2-051 May 28 (Tue) 18:00~19:00

Physico-chemical changes following ultraviolet functionalization: an alternative surface modification for enhancement zirconia surface properties
Masfueh Razali / *Universiti Kebangsaan Malaysia, Malaysia*

P2-067 May 28 (Tue) 18:00~19:00

The Evaluation of the Biocompatibility and Mechanical Properties of DLP 3D-printing MgP/Ca
PENG ZHANG / *Department of Prosthodontics, School of Dentistry, Chonnam National University, Korea, Republic of*

P2-099 May 28 (Tue) 18:00~19:00

Bioprinting of patient-derived in vitro tumor organoid model: establishment, evaluation and anti-cancer drug testing
Shuangshuang Mao / *Tsinghua University, China*

P2-133 May 28 (Tue) 18:00~19:00

Pre-clinical evaluation of miR-145 micelles for atherosclerosis therapy
Eunji Chung / *University of Southern California, USA*

P2-138 May 28 (Tue) 18:00~19:00

Glucose-Responsive Biomaterials Design for Improved Diabetes Management
Matthew Webber / *University of Notre Dame, USA*

P2-147 May 28 (Tue) 18:00~19:00

Photocatalytic microneedle reactor for transdermal delivery of carbon monoxide to enhance cisplatin chemotherapy
Youxiang Wang / *Zhejiang University, China*

P2-160 May 28 (Tue) 18:00~19:00

Phosphorous dendrimers co-deliver protein and drug to tackle osteoarthritis via mitochondrial function restoration and synergistic oxygen generation-mediated macrophage reprogrammin
Huxiao Sun / *State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, Shanghai Engineering Research Center of Nano-Biomaterials and Regenerative Medicine, College of Biological Science and Medical Engineering, Donghua University, Shanghai 201620, China, China*

P2-185 May 28 (Tue) 18:00~19:00

Glutamic-Pluronic F127 functionalized zinc oxide nanoparticles for the delivery of anticancer dugs
Anh-Quan Hoang / *Institute of Chemistry and Materials, Vietnam*

P2-202 May 28 (Tue) 18:00~19:00

Hybrid Nanocarriers based on Liposome-coated Mesoporous Silica Nanoparticles for Efficient Drug Delivery in Cancer Treatment
Dai Hai Nguyen / *Institute of Applied Materials Science - Vietnam Academy of Science and Technology, Vietnam*

P2-203 May 28 (Tue) 18:00~19:00

Enhancing Liposome Stability and Targeted Drug Delivery Through Biocompatible Polymer Modification of Soy Lecithin-based iposome
Dai Hai Nguyen / *Institute of Applied Materials Science - Vietnam Academy of Science and Technology, Vietnam*

P2-210 May 28 (Tue) 18:00~19:00

Emul-gel formulation for colon-targeted delivery of synbiotics
Shristhi Rawat / *TISC IIT Jodhpur, India*

P2-235 May 28 (Tue) 18:00~19:00

Molecular and biophysical factors for directing the chromatic phase transitions of conjugated peptidic bioscaffolds
Herdeline Ann Ardoña / *University of California, Irvine, USA*

P2-251 May 28 (Tue) 18:00~19:00

Ice-templating technique and its application in bioinspired macroporous materials
Hao Bai / *Zhejiang University, China*

P2-282 May 28 (Tue) 18:00~19:00

Based on collagenase-ROS time-responsive nanoparticle-coated balloon for the treatment of atherosclerosis
Lu Zhang / *Southwest jiaotong university, China*

P2-287 May 28 (Tue) 18:00~19:00

Cu/C-dot-Loaded Vascular Stent with Lp-PLA2-Triggered Release for Regulation of inflammation and Preventing In-Stent Restenosis
dai sheng / *southwest jiaotong university, China*

P2-291 May 28 (Tue) 18:00~19:00

Hierarchical Scaffold with Durable Immunomodulation for Rotator Cuff Repairing
Liren Wang / *Shanghai Sixth People's Hospital Affiliated to Shanghai Jiao Tong University School of Medicine, China*

P2-297 May 28 (Tue) 18:00~19:00

Advances in the in vivo evaluation of a tissue-engineered vascular graft made by weaving threads of cell-assembled extracellular matrix.
Nicolas L'Heureux / *BioTis / University of Bordeaux / Inserm, France*

P2-311 May 28 (Tue) 18:00~19:00

Development of a hydrogel ionic circuit device and its application in chronic wound biofilm treatment
Fan Zhao / *Donghua University, China*

P2-323 May 28 (Tue) 18:00~19:00

Utilizing Cyclic Nucleic Acid-Peptide Conjugates as Protease Sensors
Samuel Rozans / *Lehigh University, USA*

P2-333 May 28 (Tue) 18:00~19:00

Utilizing advanced characterization techniques for biomaterial surface analysis
Merve Kübra Aktan / *KU Leuven, Department of Materials Engineering (MTM), Belgium*

P2-348 May 28 (Tue) 18:00~19:00

Advanced Bioadhesive and biodegradable sensor based wireless device with thermoresponsive drug release for prevention in re-excision of Breast cancer
Anusha Ponnusamy / *Jeonbuk National University, Korea, Republic of*

P2-366 May 28 (Tue) 18:00~19:00

Mechanism of Remodeling and Local Effects in Vivo of a New Injectable Cosmetic Filler
Likui Sun / *National Medical Products Administration Jinan Quality Supervision and Inspection Center for Medical Devices, China*

P2-372 May 28 (Tue) 18:00~19:00

3D Fabric-Based Anisotropic Hydrogel Scaffolds for Enhanced Meniscus Substitutes: Matching Mechanical Signals to Protect Joint Cartilage
Fujun Wang / *Donghua University, China*

P2-389 May 28 (Tue) 18:00~19:00

The interaction of indoxyl sulfate vs. skatole with low-fouling PEO thin films
Ayda Ghahremanzadeh / *University of Alberta, Canada*

P2-409 May 28 (Tue) 18:00~19:00

Integration of poly(3,4-ethylenedioxythiophene)/carbon nanotube (PEDOT/CNT) coating on flexible implantable neural devices to achieve multimodality and implant stability
Elisa Castagnola Castagnola / *Louisiana Tech University, USA*

P2-431 May 28 (Tue) 18:00~19:00

Anisotropic Collagen/Hyaluronan 3D Printed Hydrogels as Novel Model of Annulus Fibrosus
Christophe Helary / *Sorbonne University, France*

P2-432 May 28 (Tue) 18:00~19:00

Functional cardiac organoids generated in PEG-based synthetic hydrogels
Zhen Ma / *Syracuse University, USA*

P2-443 May 28 (Tue) 18:00~19:00

A Vascularized platform for organogenesis and ischemia therapy
zhuangz yang / *Key Laboratory of Bioactive Materials for the Ministry of Education, College of Life Sciences, Nankai University, Tianjin 300071, China*

P2-463 May 28 (Tue) 18:00~19:00

A personalized regenerative solution for patients using biomaterials
Mukhabbat Komil / *TU/e, Netherlands*

P2-478 May 28 (Tue) 18:00~19:00

Nano-Hybridized Fiber-Integrated Scaffold Promoting Tissue Repair
Xiang FEI / *Donghua University, China*

P3-022 May 29 (Wed) 18:00~19:00

Microenvironment-responsive multifunctional hydrogels for cardiac repair after injury
Cheng Hu / *Sichuan Univerisity, China*

P3-042 May 29 (Wed) 18:00~19:00

Enhancing peripheral neural cell activity through the combination of conductive hydrogels and electrical stimulation
Jin-Xiu Yu / *Feng Chia University, Chinese Taipei*

P3-058 May 29 (Wed) 18:00~19:00

Ionic conductive hydrogels based on deep eutectic solvent and N-acryloylglycinamide
Xinyue Zhang / *Harbin Engineering University, China*

P3-061 May 29 (Wed) 18:00~19:00

A gelatin-based nanocomposite hydrogel for the sustained delivery of small-molecule therapeutics
Aishik Chakraborty / *The University of Western Ontario, Canada*

P3-086 May 29 (Wed) 18:00~19:00

Peptide-Dendrimer-Reinforced Bioinks for 3D Bioprinting
Hongli Mao / *Nanjing Tech University, China*

P3-096 May 29 (Wed) 18:00~19:00

Precision Biofabrication for Meniscal Tissue Engineering: Leveraging MEW and Microvalve Bioprinting to enable tunable Mechanical and Cellular Gradients.
Fraser Shields / *Division of Cell Matrix Biology & Regenerative Medicine, University of Manchester, United Kingdom*

P3-153 May 29 (Wed) 18:00~19:00

Immune engineered extracellular vesicles to modulate T cell activation in type 1 diabetes
Edward Phelps / *University of Florida, USA*

P3-158 May 29 (Wed) 18:00~19:00

In situ PEGylation of CAR T cells alleviates cytokine release syndrome and neurotoxicity
Michael Mitchell / *University of Pennsylvania, USA*

P3-160 May 29 (Wed) 18:00~19:00

Biomimetic Mineralization Materials for Cell Function Regulation in Cancer Therapy
Ruibo Zhao / *Institute of Smart Biomedical Materials, School of Materials Science and Engineering, Zhejiang Sci-Tech University, Hangzhou 310018, China*

P3-161 May 29 (Wed) 18:00~19:00

Bioinspired glycopeptide hydrogel as immunomodulatory niche for tissue repair
Weiwei Wang / *Institute of Biomedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College, China*

P3-162 May 29 (Wed) 18:00~19:00

Evaluation of proinflammatory response to polymeric materials using a genetically-modified macrophage cell line with luminescent peptide
Tsuyoshi Kimura / *Tokyo Medical and Dental University, Japan*

P3-168 May 29 (Wed) 18:00~19:00

Polymeric mRNA Nanoparticles Reprogram Dendritic Cells and Induce Immune Tolerance
Sarah Neshat / *Johns Hopkins University, USA*

P3-201 May 29 (Wed) 18:00~19:00

New insights into the therapeutic potentials of extracellular vesicles from red blood cells
Minh Le / *National University of Singapore, Singapore*

P3-207 May 29 (Wed) 18:00~19:00

Engineering Exosomes For Peripheral Nerve Targeted Delivery
Bin Duan / *University of Nebraska Medical Center, USA*

P3-209 May 29 (Wed) 18:00~19:00

Injectable cold atmospheric plasma-activated immunotherapeutic hydrogel for enhanced cancer treatment
Guojun Chen / *McGill University, Canada*

P3-211 May 29 (Wed) 18:00~19:00

Cell-secreted extracellular matrix nanoparticles restore endothelial barrier function
Jae-Won Shin / *University of Illinois at Chicago, USA*

P3-215 May 29 (Wed) 18:00~19:00

Multifunctional Immunotherapy Nanoparticle for Targeted Therapy of Cancer Patients with Comorbid Atherosclerosis
Lei Zhu / *Emory University, USA*

P3-235 May 29 (Wed) 18:00~19:00

Plasmonic biosensors for Alzheimer's disease diagnosis by using star-shape gold nanoparticles and graphene oxide
Sangho Bok / *University of Denver, USA*

P3-253 May 29 (Wed) 18:00~19:00

Enhancing catalase-like activity of Prussian blue nanozyme by gadolinium-doping for imaging-guided antitumor amplification via photodynamic therapy and chemotherapy
Huihui Wang / *Yangzhou University, China*

P3-255 May 29 (Wed) 18:00~19:00

Black phosphorus nanosheet-based hydrogels promotes osteogenesis effect of BMSCs through YAP-regulated metabolic reprogramming.
Fan Liu / *Stomatological Hospital of China Medical University, China*

P3-261 May 29 (Wed) 18:00~19:00

Multi-modal Regulation of Peripheral Nerve Regeneration Using Functionalized Aligned Fibrous Hydrogels
Shuhui Yang / *Zhejiang Sci-Tech University, China*

P3-290 May 29 (Wed) 18:00~19:00

Multimodal Hydrogel Delivery of microRNA Suppressing Astrocyte Senescence for Spinal Cord Injury Regeneration
Luo Yuyang / *Tsinghua University, China*

P3-302 May 29 (Wed) 18:00~19:00

Self – Assembled Type I Collagen with Bivalent Cations proposed to Bioactive Scaffolds for Bone Tissue Engineering in Osteoporosis
Kantida Juncheed / *Institute of Biomedical Engineering, Department of Biomedical Sciences and Biomedical Engineering, Faculty of Medicine, Prince of Songkla University, Hat Yai, Songkhla, 90110, Thailand.*

P3-322 May 29 (Wed) 18:00~19:00

Cryopreservation of Red Blood Cells in Absence of Toxic Cryoprotectants via Ice Templating
Francisco Fernandes / *Sorbonne University, France*

P3-337 May 29 (Wed) 18:00~19:00

Western blot analysis of metabolite effect on protein adsorption to PEO gold surfaces
Mehdi Ghaffari Sharaf / *Department of Chemical and Materials Engineering, University of Alberta, Edmonton, Alberta, Canada T6G 1H9, Canada*

P3-338 May 29 (Wed) 18:00~19:00

Developing a selective zirconium phosphate (ZrP) cation exchanger to adsorb ammonium: Effect of a gas-permeable and hydrophobic coating
Lei Li / *University of Pittsburgh, USA*

P3-367 May 29 (Wed) 18:00~19:00

Ex vivo culture method for Bioluminescence imaging in large animal
MINA KIM / *Hulux, Korea, Republic of*

P3-371 May 29 (Wed) 18:00~19:00

Manganese Amplifies Photoinduced ROS in Toluidine Blue Carbon Dots to Boost MRI Guided Chemo/Photodynamic Therapy
Huihui Wang / *Yangzhou University, China*

P3-374 May 29 (Wed) 18:00~19:00

Solid-state adhesive of porous hydroxyapatite with on-demand attachment and detachment abilities
Masahiro Okada / *Okayama University, Japan*

P3-375 May 29 (Wed) 18:00~19:00

Macrophage membrane-camouflaged nanoparticles for selenoprotein-mediated immunotherapy and NIR- II photoacoustic diagnostics of atherosclerotic plaques
Gaocan Li / *Sichuan University, China*

P3-376 May 29 (Wed) 18:00~19:00

Combination of dental pulp stem cells and photo-sensitive hydrogels encapsulating silver nanoparticles for dental pulp regeneration
Lihua Luo / *School and Hospital of Stomatology, Wenzhou Medical University, Wenzhou, Zhejiang, China*

P3-379 May 29 (Wed) 18:00~19:00

Hybrid Liposomal Hydrogel as a Lipid Mediator Delivery Platform for Tissue Immunomodulation
Young Jang / *Georgia Tech/Emory, USA*

P3-395 May 29 (Wed) 18:00~19:00

Glycopeptide hydrogel-mediated macrophage-T cell crosstalk to activate regenerative type 2 immune response for tissue repair
Jingrong Wang / *Institute of Biomedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College, China*

P3-403 May 29 (Wed) 18:00~19:00

Biomimetic scaffolds for rotator-cuff repair
Younan Xia / *Georgia Institute of Technology, USA*

P3-409 May 29 (Wed) 18:00~19:00

Osteogenic differentiated human bone marrow stem cells inhibited sprouting angiogenesis of human umbilical vein endothelial cells via paracrine excreted IGFBP
Shiyu Sun / *Peking University School and Hospital of Stomatology, China*

P3-413 May 29 (Wed) 18:00~19:00

Theragnostic Nanosomes for Precision Diagnosis and Therapy in Early Osteoarthritis Management
Hongsik Cho / *University of Tennessee Health Science Center, USA*

P3-424 May 29 (Wed) 18:00~19:00

3D-Printed In Vitro Lung Cancer Invasion Model
GwangMyeong Kim / *Pohang University of Science and Technology (Postech), Korea, Republic of*

P3-437 May 29 (Wed) 18:00~19:00

A versatile fiber composite hydrogel as a biomimetic 3D tumor model for drug screening
Chaojing Li / *Donghua University, China*

P3-438 May 29 (Wed) 18:00~19:00

Notch-1 regulates collective cancer cell migration by controlling intercellular junction and cytoskeletal organization
Yixi Zhang / *University of Electronic Science and Technology of China, China*

P3-475 May 29 (Wed) 18:00~19:00

Rapid dissolvable protein microneedles for instant delivery and long-term storage of biomolecules for biomedical application
Jayakumar Rajendran / *PhD student, Indian Institute of Technology, Hyderabad, India*

P3-482 May 29 (Wed) 18:00~19:00

Biofabrication of a *3D in vitro* model recapitulating the ovine IVD structure for evaluating the efficiency of novel therapies
Catherine Le Visage / *Nantes University / Inserm, France*

P4-008 May 30 (Thu) 18:00~19:00

Different mechanical properties of the gamma-irradiated gelatin gels using the different cooling processes
Masayuki Hara / *Osaka Metropolitan University, Japan*

P4-009 May 30 (Thu) 18:00~19:00

UV-crosslinking of Type I collagen gels changed the morphology of brain capillary endothelial cells on them
Masayuki Hara / *Osaka Metropolitan University, Japan*

P4-010 May 30 (Thu) 18:00~19:00

From Multicomponent Self-Assembly to Osteo-Promoting Hydrogels
Babatunde Okesola / *School of Life Sciences, Faculty of Medicine and Health Sciences, University of Nottingham, United Kingdom*

P4-018 May 30 (Thu) 18:00~19:00

Anti-infection mechanism of a novel dental implant made of titanium-copper (TiCu) alloy and its mechanism associated with oral microbiology
Ling Ren / *Institute of Metal Research Chinese Academy of Sciences, China*

P4-049 May 30 (Thu) 18:00~19:00

Additively manufactured and laser surface textured Ti-13Nb-13Zr for bone implant application
Annett Gebert / *Leibniz IFW Dresden, Germany*

P4-050 May 30 (Thu) 18:00~19:00

Co-assembling living material as an in vitro lung epithelial infection model
Yuanhao Wu / *Wuhan Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, China*

P4-156 May 30 (Thu) 18:00~19:00

Inorganic nanoparticles and nanocomposites for bone tissue engineering applications
Sabine van Rijt / *Maastricht University, Netherlands*

P4-159 May 30 (Thu) 18:00~19:00

Nanotextured Surfaces Modulate Interfacial Water Interactions to Control Initial Protein Interactions Important for Promoting Implant Function in Humans
Thomas Webster / *Interstellar Therapeutics, USA*

P4-164 May 30 (Thu) 18:00~19:00

Bioinspired, anticoagulative, 19F MRI-visualizable bilayer hydrogel tubes as high patency small-diameter vascular grafts
Pingsheng Huang / *Institute of Biomedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College, Institute of Biomedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College*

P4-203 May 30 (Thu) 18:00~19:00

Integrated cascade high-entropy oxide nanozyme for enhanced ROS scavenging in neuroprotection
Chun-Yi Yang / *Tsinghua University, China*

P4-205 May 30 (Thu) 18:00~19:00

Targeted Delivered Functionalized Grape-Derived Cyanidin-Loaded Mesoporous Silica Nanoparticles for Intervertebral Disc Degeneration Therapy
Zhe Wang / *West China Hospital of Sichuan University, China*

P4-217 May 30 (Thu) 18:00~19:00

Quantitative Assessment of the Comparative NP-Uptake Efficiency in a range of biological fluids
Tiago dos Santos / *I3S, Portugal*

P4-220 May 30 (Thu) 18:00~19:00

Self-assembled α-Ketoglutarate-loaded hyaluronic acid nanoparticles for osteoarthritis treatment
Xinli Wang / *the Fourth Military Medical University, China*

P4-223 May 30 (Thu) 18:00~19:00

Structure-adjustable Fabrication of Hollow Mesoporous Silica Nanoparticles and Its Surface Modification for Anti-cancer Drug Delivery
Dieu Linh Tran / *Institute of Chemical Technology - Vietnam Academy of Science and Technology, Vietnam*

P4-226 May 30 (Thu) 18:00~19:00

Functional lignin nanoparticle fabrication and use
Pedram Fatehi / *Lakehead University, Canada*

P4-227 May 30 (Thu) 18:00~19:00

Generation and use of novel cellulose nanocrystal with charged hairy structure
Pedram Fatehi / *Lakehead University, Canada*

P4-255 May 30 (Thu) 18:00~19:00

Optimizing Flap Survival and Tissue Regeneration: Self-Oxygenating Biomaterials with Catalase-Laden Hydrogel
Sungmi Jeon / *Division of Pediatric Plastic Surgery, Seoul National University Children's Hospital; Department of Plastic and Reconstructive Surgery, Seoul Metropolitan Government-Seoul National University Boramae Medical Center, Korea, Republic of*

P4-256 May 30 (Thu) 18:00~19:00

Enhancing spinal regeneration and vertebral fusion with CF-M801 osteoblastic cells in A Goat Spine Defect Model
Hyun Sook Park / *CEFO Co., Ltd., Korea, Republic of*

P4-258 May 30 (Thu) 18:00~19:00

A degradable nanofibrous scaffold of poly(ε-caprolactone-co-lactide) for intervertebral disc regeneration
Catherine Le Visage / *Nantes Université, Oniris, INSERM, Regenerative Medicine and Skeleton, RMeS, UMR 1229, F-44000, France*

P4-281 May 30 (Thu) 18:00~19:00

Promotion of peripheral nerve system remyelination by cell sheet therapy
Pei-Yi Ou Yang / *Institute of Cell Biology and Anatomy, College of Medicine, National Cheng Kung University, Chinese Taipei*

P4-287 May 30 (Thu) 18:00~19:00

A Double-targeted Liposomal Composite Hydrogel Integrating for promoting nerve function recovery after Spinal Cord Injury
Yaosai Liu / *Tsinghua University, China*

P4-306 May 30 (Thu) 18:00~19:00

Preservation Of Denervated Muscles In Long-Gap Peripheral Nerve Injury With A High Intensity Electrical Stimulation Using Hydrogel Ionic Circuit
Bin Duan / *University of Nebraska Medical Center, USA*

P4-311 May 30 (Thu) 18:00~19:00

The regulatory effect of braided silk fiber skeletons with differential porosities on in vivo vascular tissue regeneration
Xili Ding / *Beihang University, China*

P4-318 May 30 (Thu) 18:00~19:00

Injectable bioactive hydrogel with multiscale structure for asynchronous dual drug release toward treating Parkinson's disease
Junpeng Xu / *School of Pharmaceutical Science, Wenzhou Medical University, Wenzhou, Zhejiang, China*

P4-327 May 30 (Thu) 18:00~19:00

Construction strategy for the functional surface of medical-enhanced MXenes@Ti long-lasting, antibacterial, and corrosion-resistant bone implants
Zhengquan Wang / *Northwest Institute for Non-Ferrous Metal Research, China*

P4-330 May 30 (Thu) 18:00~19:00

Smart Implant with Bacteria Monitoring and Killing Ability for Orthopedic Applications
Donghui Wang / *Hebei University of Technology, China*

P4-331 May 30 (Thu) 18:00~19:00

Surface modification of biomedical polymers with a novel compound containing both zwitterionic carboxybetaine and catechol configuration
Jui-Che Lin / *Department of Chemical Engineering, National Cheng Kung University, Chinese Taipei*

P4-333 May 30 (Thu) 18:00~19:00

Dressing Blood-Contacting Materials by a Stable Hydrogel Coating with Embedded Antimicrobial Peptides for Robust Antibacterial and Antithrombus Properties
Fanjun Zhang / *Sichuan University, China*

P4-335 May 30 (Thu) 18:00~19:00

Mechanisms of hierarchical topographies tuning bacteria and cell biological responses to the surfaces of pure titanium and cu-bearing titanium alloy
Hui Liu / *Institute of metal reaserch, Chinese academy of sciences, China*

P4-366 May 30 (Thu) 18:00~19:00

A multifunctional treatment platform containing nanodiamonds for post-tumor wound recovery
Xianglin Luo / *Sichuan University, China*

P4-367 May 30 (Thu) 18:00~19:00

Development of dermal paste using engineered biomaterial for the treatment of chronic non-healing wounds
Prasad Sawadkar / *Northwick Park Institute for Medical Research /UCL, United Kingdom*

P4-368 May 30 (Thu) 18:00~19:00

Low-dose trypsin enhances tissue repair through protease-activated receptor 2
Lei Lu / *Wenzhou Medical University, China*

P4-370 May 30 (Thu) 18:00~19:00

Controlled release of decorin and decorin-derived peptides promote scarless wound healing after vocal fold injury
Riccardo Gottardi / *University of Pennsylvania & Children's Hospital of Philadelphia, USA*

P4-394 May 30 (Thu) 18:00~19:00

Metal-phenolic self-assembly shielded probiotics in hydrogel reinforced wound healing with antibiotic treatment
Chen Zhou / *National Engineering Research Center for Biomaterials, Sichuan University, China*

P4-403 May 30 (Thu) 18:00~19:00

Multifunctional zinc-based carbon dot nanocomposite hydrogels for chronic refractory wounds treatment and real-time imaging
dai sheng / *southwest jiaotong university, China*

P4-411 May 30 (Thu) 18:00~19:00

Incorporation of curcumin nanoparticles into hybrid polymer hydrogel for effective chronic wound treatment
SUYEON KIM / *Pontificia Universidad Católica del Perú, Peru*

P4-412 May 30 (Thu) 18:00~19:00

A thermosensitive, pH responsive injectable self-healing hydrogel for chronic wound healing
Dong Dong Wan / *Department of Orthopedic Surgery, Tianjin First Central Hospital, Nankai University, China*

P4-429 May 30 (Thu) 18:00~19:00

Regulation of organoid development on microfluidic chips
Hongxu Lu / *Shanghai Institute of Ceramics, Chinese Academy of Science, China*

P4-449 May 30 (Thu) 18:00~19:00

Robust and controllable in vitro hSPC model for human spinal cord ventral patterning using microfluidic device
Jeyoon Bok / *University of Michigan, USA*

P4-451 May 30 (Thu) 18:00~19:00

Evaluation of in vivo toxicity in mice based on the dosage of poly (ethylene glycol) diglycidyl ether (PEGDE) administered
Ji Won Choi / *Across co., Ltd, Korea, Republic of*

P4-452 May 30 (Thu) 18:00~19:00

Pre-clinical evaluation of a new class III biodegradable stent for the treatment of urethral stricture
Yurena Polo Arroyabe / *Polimerbio SL, Spain*

P4-454 May 30 (Thu) 18:00~19:00

The Biocompatibility Evaluation Strategy for Recombinant Collagen Products
Wen Zou / *sichuan university, China*

P4-457 May 30 (Thu) 18:00~19:00

Identifying blind spots in implant safety: Translating scientific insight into policy and regulation
Nick Beijer / *Dutch National Institute for Public Health and the Environment (RIVM), Netherlands*

P4-459 May 30 (Thu) 18:00~19:00

Photocrosslinkable microbeads for delivery of dietary supplemen
Huan-Jun Kuo / *Feng Chia University, Chinese Taipei*

P4-467 May 30 (Thu) 18:00~19:00

Multi--responsive liquid crystal elastomers for active wearable and implantable devices
Wenhui Song / *University College London, United Kingdom*

P4-476 May 30 (Thu) 18:00~19:00

Hemocompatible endothelium-inspired synthetic coating for medical devices to reduce coagulation by catalytically releasing nitric oxide
Jenny Englert / *DWI Leibniz Institute for Interactive Materials, Germany*

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Reference 1. Theisen L. et al., Antiviral Research. 2012 May; 94(2): 147–56. 2. Michaelis M. et al., Phytomedicine. 2011 Mar; 18(5): 384–6 3. Roth M et al. PLoS ONE. 2019 Feb; 14(2): e0210702. 4. Conrad A et al. Phytomedicine. 2007 Mar; 14(Suppl. 6): 46–51. 5. Conrad A et al. Phytomedicine. 2007 Mar; 14 (Suppl. 6): 52–9. 6. Neugebauer P et al. Phytomedicine. 2005 Jan; 12(1-2): 46–51. 7. Bao, Y et al. Phytomedicine. 2015 Mar; 22(4): 504–9.

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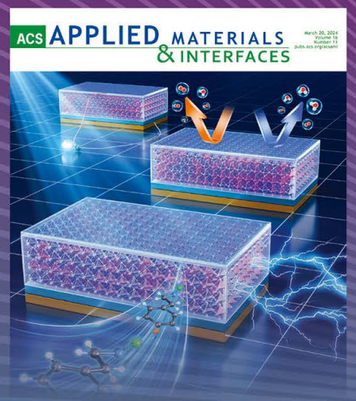

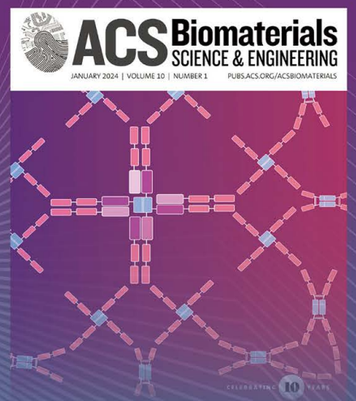

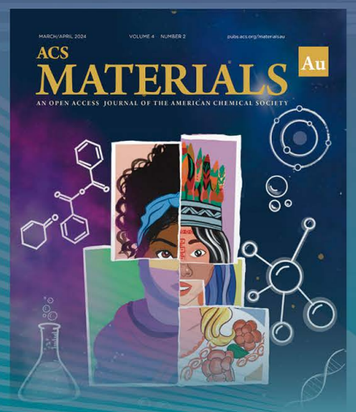

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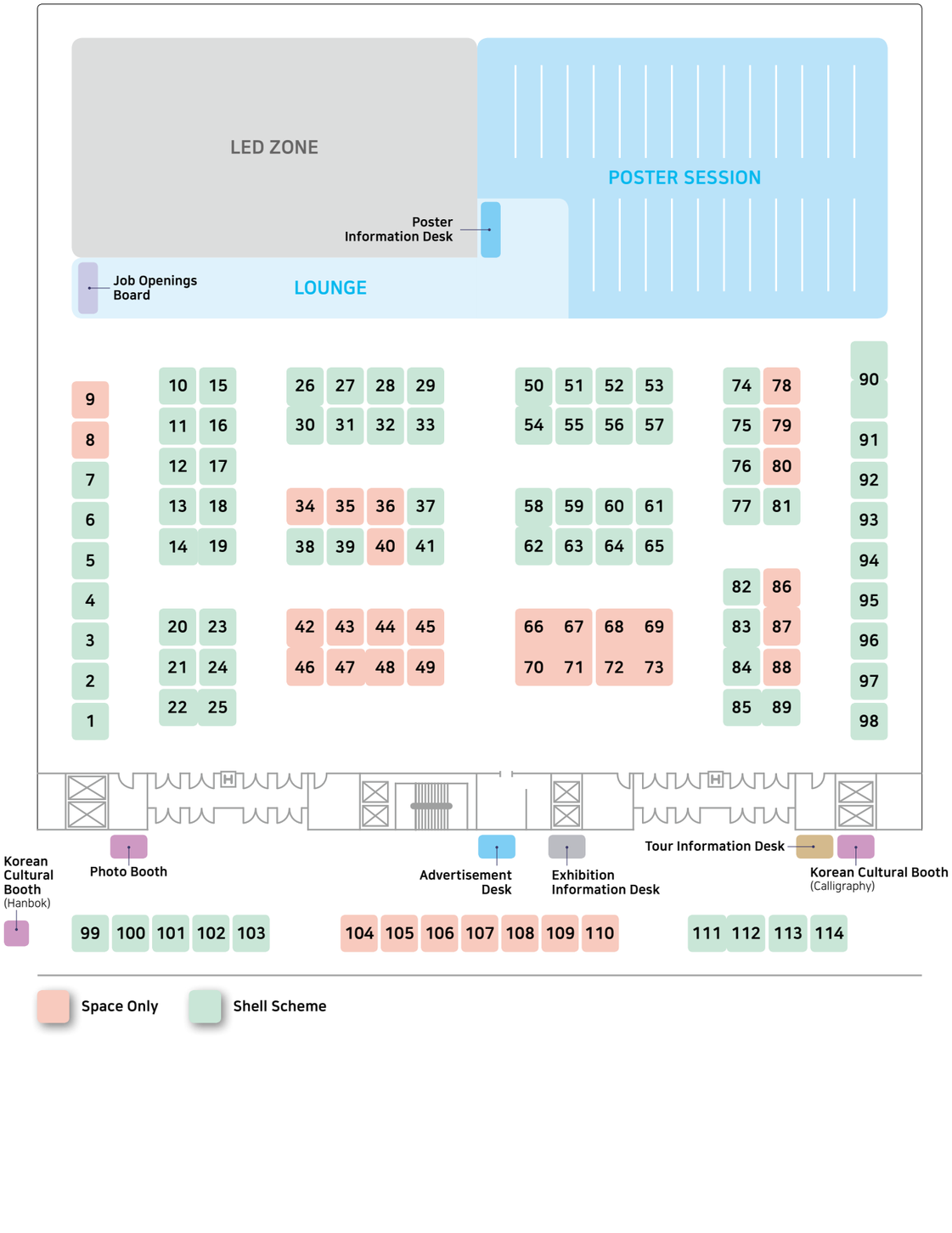

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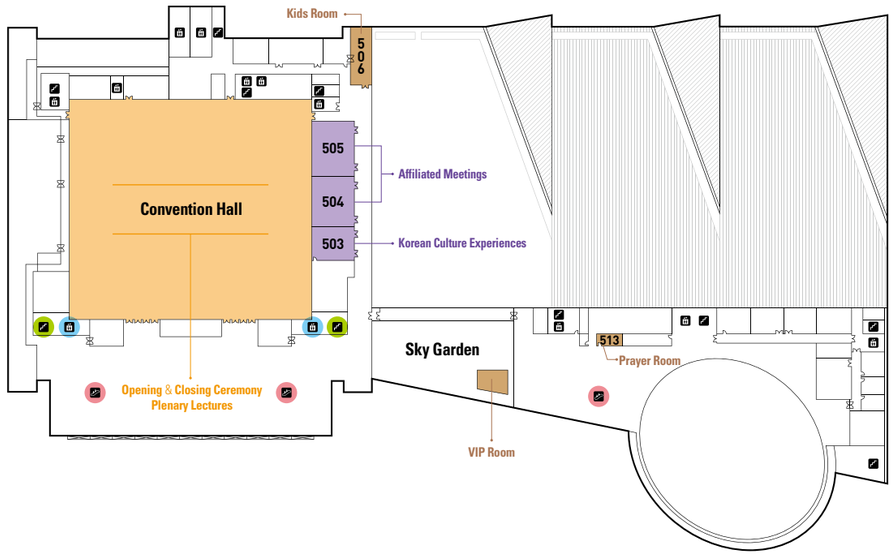

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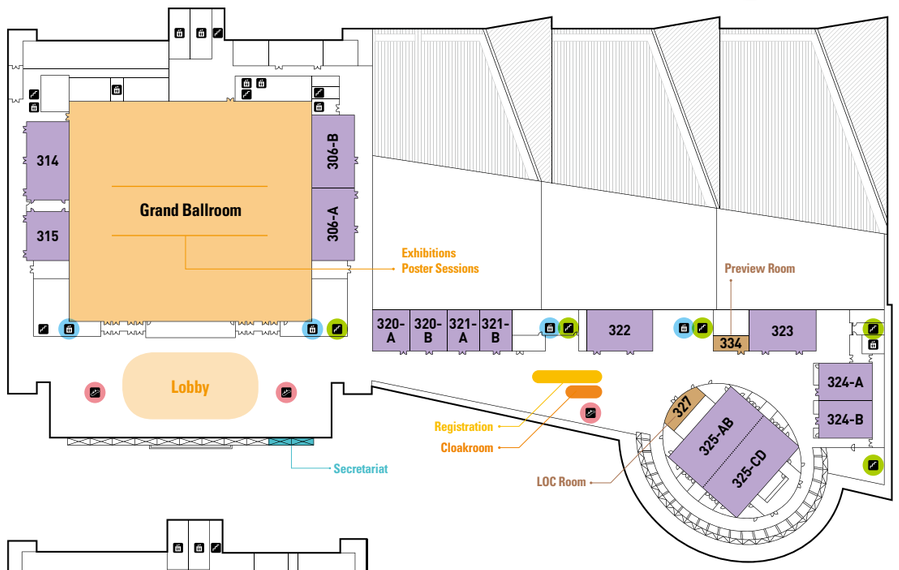

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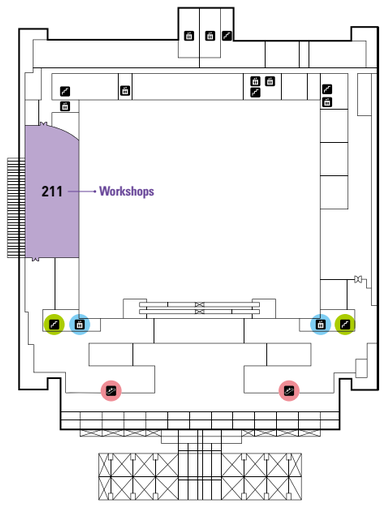

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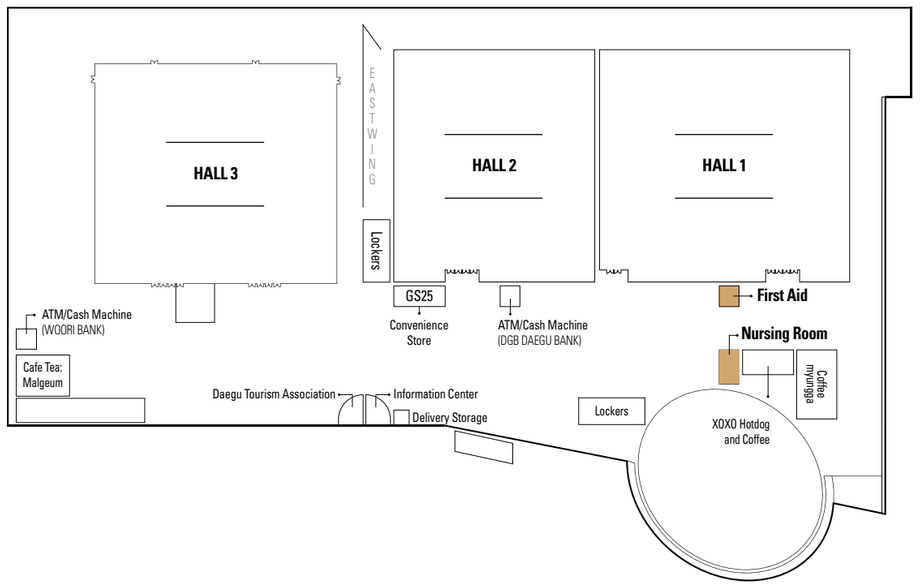

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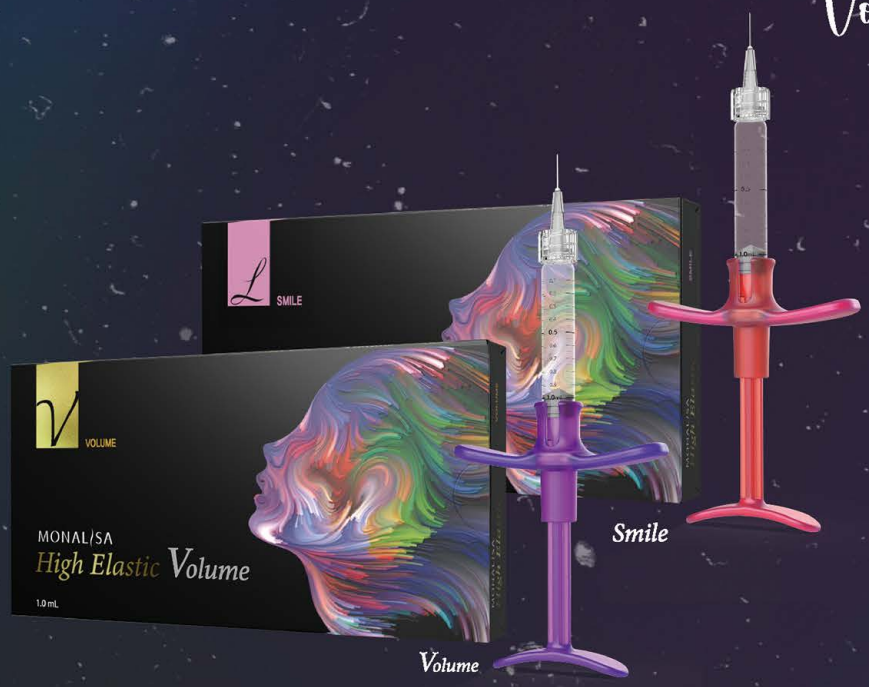

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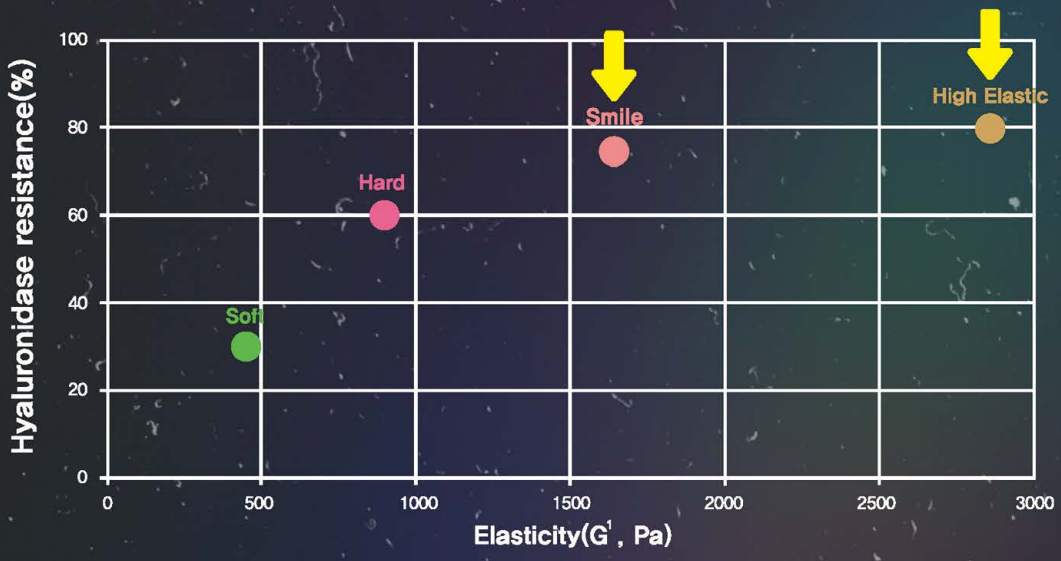

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