Table of Contents

Preliminaries

General

Scientific Program

Welcome Message

Biomaterials International (BMI) Conference 2025

Invitation

Dear Colleagues,

The Organizing Committee takes great pleasure in extending an invitation for your participation in Biomaterials International 2025, to be held in Seattle, United States from July 13 to July 17, 2025. The conference will be hosted at the University of Washington campus in Seattle. It will bring together international research communities from various scientific disciplines, including biology, physiology, materials science, physics, chemistry, engineering, and clinical science. Participants will gather to explore new and exciting advances in biomaterials, techniques, and methodologies.

In addition to plenary and invited lectures, general symposia, and poster presentations, Biomaterials International 2025 will feature several Special Symposia dedicated to the applications of biomaterials in biomechanics, biosensors and biochips, biomedical optoelectronics, among other topics.

While Biomaterials International 2025 will feature a robust scientific and technological program, it's essential not to overlook the social and cultural experiences offered in Seattle. The Organizing Committee is committed to ensuring a memorable event in one of the United States' most alluring regions.

We sincerely hope you will join us at Biomaterials International 2025 for a meaningful and enjoyable time with your colleagues in the field of biomaterials. The entire Organizing Committee looks forward to welcoming you to vibrant Seattle, known for its dynamic atmosphere and innovative spirit.

Yours sincerely,

Shih-Jung (Sean) Liu

Chair

Professor, Chang Gung University

Suzie H. Pun

Co-Chair

Professor, University of Washington

Conference Committee

Chair Liu SJ, PhD (Mechanical Engineering, Chang Gung University)

Co-Chair Pun SH, PhD (Bioengineering, University of Washington)

Secretariat Lee D, PhD (Mechanical Engineering, Chang Gung University)

Symposia

General symposia

G1. Biodegradable materials and devices

G2. Metallic biomaterials

G3. Ceramic biomaterials

G4. Smart materials

G5. Synthesis and fabrication of biomaterials and devices

G6. Regenerative medicine and tissue engineering

G7. Interactions of biomaterials and cells

G8. Nanoscale biomaterials

G9. Delivery of drug, gene, vaccine, and active biomolecules

G10. Functionalization and bioactivity

Special symposia

S1. Nanomedicines

S2. Biomechanics

S3. Biosensors and biochips

S4. Biomedical optoelectronics

S5. Signal and image processing

S6. Other techniques and applications

Plenary Speakers

Bradley M, PhD
Queen Mary University of London

Synthetic substrates for cellular control

Irvine D, PhD

The Scripps Research Institute

Engineering immunity with Biomaterials

Ishikawa K, PhD
Kyushu University

Carbonate apatite artificial bone and cement

Segura T, PhD

Duke University

From soft microparticle assembles to MAP scaffolds

Invited Speakers

Appel EA, PhD	Stanford University	Biomimetic polymer technologies for improving biologic formulation and delivery
Chen H, MD/PhD	Chang Gung Memorial Hospital (Plastic and Reconstructive Surgery)	Strontium-doped mesoporous silica nanoparticles promote craniofacial bone regeneration in osteoporosis through Wnt pathway
DeForest C, PhD	University of Washington	User-programmable hydrogel biomaterials to probe and direct 4D stem cell fate
Ito T, PhD	The University of Tokyo	Erythrocyte mimetic perfluorocarbon core-elastomer shell microparticles via SPG membrane emulsification as artificial oxygen carriers
Kramer JR, PhD	University of Utah	Synthetic glycopolypeptides as mimics of mucins and antifreeze protein
Lai J, PhD	National Taiwan University of Science and Technology	Next-generation biomarker detection: from temperature-responsive polymers to osmosis-driven bioprocessing
Maazouz A, PhD	National Institute of Applied Sciences of Lyon (INSA Lyon)	Biopolymers and their composites for packaging and medical applications: Scientific challenges and prospects
Nohira N, PhD	Institute of Science Tokyo	Recent development of Ti-Cr-Sn based biomedical shape memory alloys beyond NiTi
Roffler S, PhD	Academia Sinica	Understanding the causes and effects of PEG immunogenicity on PEGylated medicines
Roumeli E, PhD	University of Washington	Advances in sustainable materials using biomatter: from tunable hydrogels to high performance plastics
Scheibel T, PhD	University of Bayreuth	Biofabrication based on engineered spider silk materials

Invited Speakers

Sosnik A, PhD	Israel Institute of Technology	Amorphous TiO2/polymer nano-sonosensitizers for the targeted sonodynamic therapy of brain tumors
Stayton P, PhD	University of Washington	Polymeric prodrugs for infectious disease and immune therapies
Tsai TT, MD/PhD	Chang Gung Memorial Hospital (Orthopedic Surgery)	Automatic landmark detection and alignment analysis in whole-spine lateral radiographs
Veiseh O, PhD	Rice University	Bioengineering cell-based therapeutics from bench side to bedside
Yoshikawa C, PhD	National Institute for Materials Science	Self-assembly of cells with concentrated polymer brush-modified nanofibers

Conference Information

Conference Venue	Alder Hall at the University of Washington		
Registration Service	Date	Time	Venue
	Sunday, July 13	15:00-17:00	Mol ES Building
	Monday, July 14	09:00-16:00	Alder Hall at the University of Washington
	Tuesday, July 15	09:00-16:00	
Conference Badge	Please ensure to wear your badge at all times to enter the conference rooms. There may also be coupons placed in your badge to exchange for additional purchase.		
Welcome Reception	Date	Sunday, July 13	
	Time	15:00-17:00	
	Location	Mol ES Building	
Conference Banquet	Date	Tuesday, July 15	
	Time	18:00-20:00	
	Location	Ivar's Salmon House	
Lab Tour	9:00-12:00, Thursday, July 17 (gathering at 9:00 in front of the Alder Hall)		

Oral Presentation Schedule

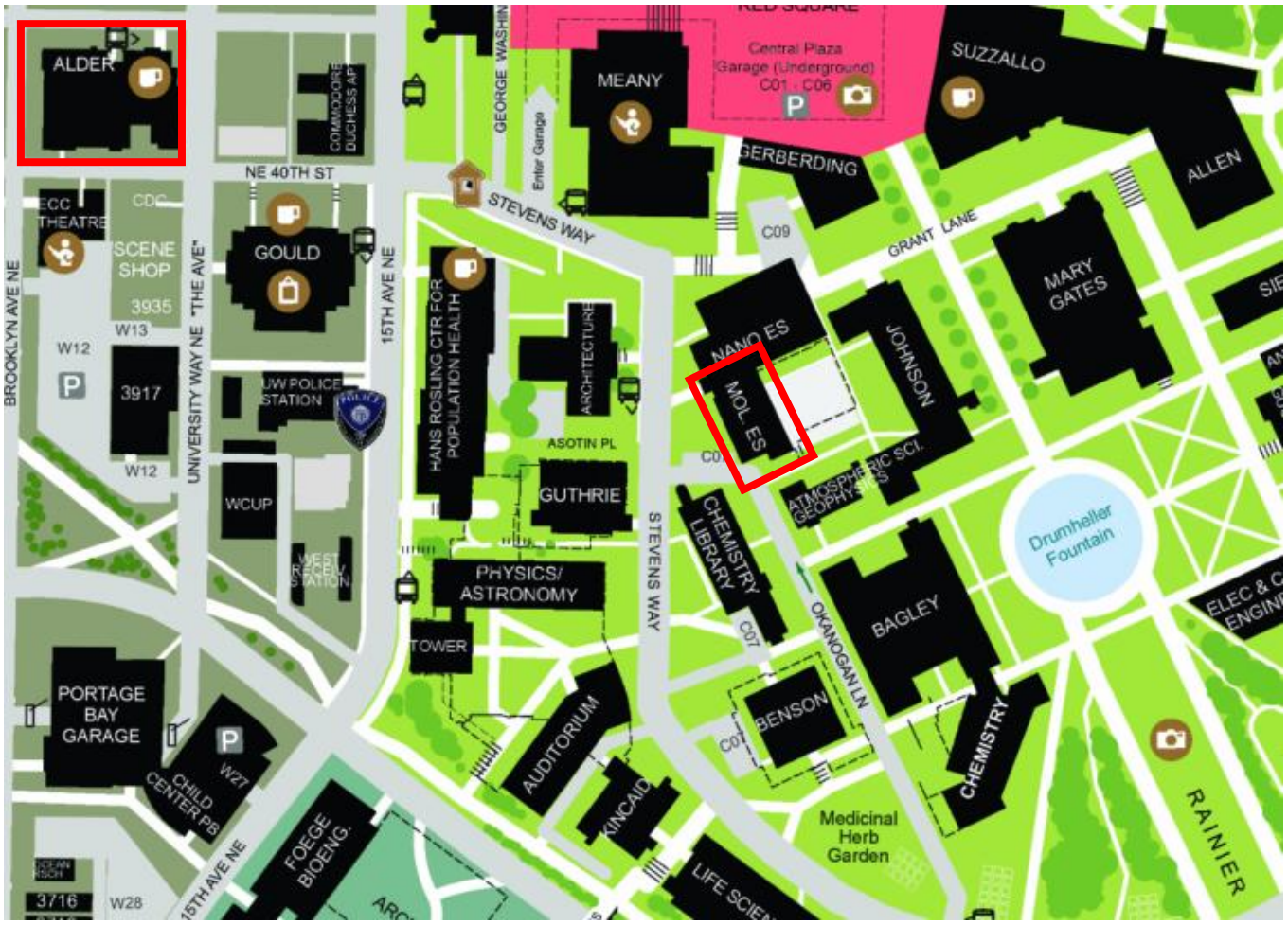
Presentation Type	Total Time	Presentation Time	Q&A
Plenary Talk	40 min.	35 min.	5 min.
Invited Talk	25 min.	20 min.	5 min.
Oral Presentation	15 min.	13 min.	2 min.

Poster Presentation Schedule

Session	Date	Time	Schedule
Poster Session (Alder Hall)	Tuesday, July 15	13:30-14:50	Poster Setup
		15:00-17:00	Poster Session
		17:00-17:30	Poster Removal

Directions

University of Washington Campus Map



Alder Hall

Mol. ES Building

Banquet

Ivar's Salmon House

401 NE Northlake Way, Seattle, WA 98105 USA

Program at a Glance

Sunday, July 13		
Time	**Venue**	**Activity**
15:00-17:00	**Mol ES Building**	Welcome Reception

Monday, July 14	
Venue	**Auditorium (Alder Hall)**
09:00-09:10	**Opening Ceremony** **Liu SJ**, PhD/Chang Gung University **Suzie H. Pun**, PhD/ University of Washington
09:10-10:30	Plenary Talks
10:30-10:40	**Break Time**
Venue	**Auditorium**
10:40-11:55	Invited Talks
11:55-13:30	**Lunch Time**
Venue	**Auditorium**
13:30:15:30	Oral Presentations
15:30-15:45	**Break Time**
Venue	**Auditorium**
15:45-17:45	Oral Presentations

Tuesday, July 15	
Venue	**Auditorium**
09:00-10:20	Plenary Talks
10:20-10:40	**Break Time**
Venue	**Auditorium**
10:35-11:55	Invited Talks
11:55-13:30	**Lunch Time**
Venue	**Auditorium**
13:30-14:45	Invited Talks
Venue	**Alder Hall**
15:00-17:00	Poster Session Presentation
Venue	**Ivar's Salmon House**
18:00-20:00	**Banquet**

Wednesday, July 16	
Venue	**Auditorium**
09:00-10:15	Invited Talks
10:15-10:35	**Break Time**
Venue	**Auditorium**
10:35-11:50	Invited Talks
11:50-13:30	**Lunch Time**
Venue	**Auditorium**
13:30:15:30	Oral Presentations
15:30-15:45	**Break Time**
Venue	**Auditorium**
15:45-17:45	Oral Presentations
17:45-18:15	**Closing Ceremony**

Thursday, July 17	
Venue	University of Washington
9:00-12:00	Lab Tour

Monday, July 14	
Venue	**Auditorium**
09:00-09:10	**Opening Ceremony** **Liu SJ**, PhD/Chang Gung University **Suzie H. Pun**, PhD/ University of Washington
Venue	**Auditorium**
Chair	
09:10-09:50	**#0000 From soft microparticle assembles to MAP scaffolds** Segura T
09:50-10:30	**#0000 Carbonate apatite artificial bone and cement** Ishikawa K
10:30-10:40	**Break Time**
Venue	**Auditorium**
Chair	
10:40-11:05	**#1015 Automatic landmark detection and alignment analysis in whole-spine lateral radiographs** Tsai TT
11:05-11:30	**#0000 Strontium-doped mesoporous silica nanoparticles promote craniofacial bone regeneration in osteoporosis through Wnt pathway** Chen H
11:30-11:55	**#1079 Erythrocyte mimetic perfluorocarbon core-elastomer shell microparticles via SPG membrane emulsification as artificial oxygen carriers** Ito T
11:55-11:30	**Lunch Time**

Monday, July 14	
Venue	**Auditorium**
Chair	
13:30-13:45	**#1014 Quantitative lateral flow immunoassay for rapid detection of procollagen Type I N-terminal propeptide in the monitoring of osteoporosis treatment** Allison Hsin-Cheng Tsai, Chung-An Chen, Ping-Yeh Chiu, Tse-Hao Huang, Natalie Y.J. Ho, Fu-Cheng Kao, Tsung-Ting Tsai
13:45-14:00	**#1002 Assembly of interfacial polyelectrolyte complexation fibers with mineralization gradient for physiologically-inspired ligament regeneration** Y.C. Liu, S.H. Chen, S.H. Chen, T.W. Wang
14:00-14:15	**#1006 Biomechanical effects of PMMA cement volume and filling patterns in augmented pedicle screws: implications and future research directions** M.K Hsieh, Y.D Li, F.C Kao, D.M Lee, W.P Chen, T.T. Tsai, Tsai-Sheng Fu, P-L Lai, C.L. Tai
14:15-14:30	**#1031 Effects of hyperbaric oxygen and antibiotics treatment on ossification of mesenchymal stem cells** SS Lin, CY Yang, SJ Liu, KY Chong, YS Chan, CH Chang, TT Tsai, CC Niu, LJ Yuan, HY Hsiao, YJ Hsueh, CA Chen, S.W. N. Ueng
14:30-14:45	**#1021 Functional evaluation of HADSC- and HEK293T-derived exosomes on fibroblast migration** W.X. Zhang, Y. Teramura
14:45-15:00	**#1032 Effects of HBO on the expression profiles of miRNAs and lncRNAs in OA chondrocytes** SS Lin, SS Chang, YS Chan, CH Chang, CY Yang, KY Chong, CC Niu, TT Tsai, HY Hsiao, YJ Hsueh, CA Chen, S.W. N. Ueng, LJ Yuan
15:00-15:15	**#1082 A Bioengineered model to elucidate mechanotransduction mechanisms in vitro and evaluate microenvironment mineralization bone regeneration in vivo** Sofia M. Vignolo, Daniela M. Roth, Avathamsa Athirasala, Luiz E. Bertassoni
15:15-15:30	**#1065 Vildagliptin/PLGA nanofibers promote angiogenesis and accelerate diabetic wound healing** Chen-Hung Lee, Chien-Hao Huang, Kuo-Chun Hung, Shu-Chun Huang, Chi-Ching Kuo and Shih-Jung Liu
15:30-15:45	**Break Time**

Monday, July 14	
Chair	
15:45-16:00	**#1012 Nanophase separation in conductive polymer bioelectronic interfaces for advanced healthcare applications** Y.-S. Hsiao
16:00-16:15	**#1005 Engineering functional vascularized tissue with different levels of blood vessel density for enhancing the repair of volumetric muscle loss** Shih-Yen Weia, Juan M. Melero-Martinb, Ying-Chieh Chen
16:15-16:30	**#1056 Synergy of nascent matrix and hydrogel cues in guiding cell fate** Y.C. Liu, E. M. Plaster, A. Roy, M.L. Tan, P. Duran, P. Panovich, A. S. Piotrowski-Daspit, C. A. Aguilar, M. L. Killian, and C. Loebel
16:30-16:45	**#1026 Material characterization and defect detection of additively manufactured ceramic teeth using non-destructive techniques** Ching-Hsiao Liu, N. Jeyaprakash, and Che-Hua Yang
16:45-17:00	**#1044 Incorporation of bioactive inorganic fillers to improve hydrogel biocompatibility with endothelial cells – an ionic medicine approach** H.-H. Lu, R. Dai, H. Kaňková, I. Cicha and A.R. Boccaccini
17:00-17:15	**#1017 Extraction of chitosan from labeo rohita and tenualosa ilisha fish scales – a valuable biopolymer from biowaste** T.A. Nyeem, A.A Tina, M.S. Zawad, N.K. Mazumder, M.E. Hoque
17:15-17:30	**#1001 Assembly of metal-phenolic networks onto microbubbles for one-step generation of functional microcapsules** L.Q. Ge and X. Tan
17:30-17:45	**#1003 Amino acid-crosslinked 4ARM-PLGA janus patch with anti-adhesive and anti-bacterial properties for hernia repair** Tianzhu Zhang, Yinghua Tao

Tuesday, July 15	
Venue	**Auditorium**
Chair	
09:00-09:40	**#0000 Engineering immunity with Biomaterials** Irvine D
09:40-10:20	**#0000 Synthetic substrates for cellular control** Bradley M
10:20-10:40	**Break Time**
Venue	**Auditorium**
Chair	
10:40-11:05	**#0000 Next-generation biomarker detection: from temperature-responsive polymers to osmosis-driven bioprocessing** Lai J
11:05-11:30	**#0000 Biopolymers and their composites for packaging and medical applications: Scientific challenges and prospects** Maazouz A
11:30-11:55	**#1018 Biofabrication based on engineered spider silk materials** Scheibel T
11:55-13:30	**Lunch Time**
Venue	**Auditorium**
Chair	
13:30-13:55	**#0000 Bioengineering cell-based therapeutics from bench side to bedside** Veiseh O
13:55-14:20	**#1023 Recent development of titanium–chromium–tin based biomedical shape memory alloys beyond NI-TI** N. Nohira, M. Tahara, and H. Hosoda
14:20-14:45	**#0000 User-programmable hydrogel biomaterials to probe and direct 4D stem cell fate** DeForest C
Venue	**Alder Hall**
15:00-17:00	Poster Session Presentation
Venue	**Ivar's Salmon House**
18:00-20:00	**Banquet**

Wednesday, July 16	
Venue	**Auditorium**
Chair	
09:00-09:25	**#0000 Biomimetic polymer technologies for improving biologic formulation and delivery** Appel EA
09:25-09:50	**#1054 Advances in sustainable materials using biomatter: from tunable hydrogels to high-performance plastics** A. Mandal, J. D. P. Amorim, K. Liao, H. Iyer, E. Roumeli
09:50-10:15	**#0000 Synthetic glycopolypeptides as mimics of mucins and antifreeze protein** Kramer JR
10:15-10:35	**Break Time**
Venue	**Auditorium**
Chair	
10:35-11:00	**#0000 Polymeric prodrugs for infectious disease and immune therapies** Stayton P
11:00-11:25	**#1039 Self-assembly of cells with concentrated Polymer brush-modified nanofibers** Chiaki Yoshikawa
11:25-11:50	**#0000 Understanding the causes and effects of PEG immunogenicity on PEGylated medicines** Roffler S
11:50-13:30	**Lunch Time**

Wednesday, July 16	
Venue	**Auditorium**
Chair	
13:30-13:45	**#1028 Repurposing cetuximab via nanoconjugation for targeting resistant cancers** L. Barbieri, A. Banfi and D. Prosperi
13:45-14:00	**#1050 The PDMS device aging mystery solved: storage and mixing ratios for hydrophilicity and stiffness preservation** S. Zhang, A.E. Staples
14:00-14:15	**#1077 Wet spun textile-derived konjac glucomannan scaffolds: a cost-effective alternative for cultivated meat production** David Pietri, Christine McBeth
14:15-14:30	**#1059 Development of an MSC spheroid-derived 3D decellularized ecm scaffold enriched MSC secretome as a pro-regenerative biomaterial for brain repair** C.C. Huang
14:30-14:45	**#1035 Photocuring 3D printing of piezoelectric composite scaffold with dynamic culture system for osteoblast** C.C. Tsai, J.J. Chang, and M.H. Ho
14:45-15:00	**#1057 Anti-inflammatory nanoparticles as potential treatment for aortic dissection** Maria Thea Rane Dela Cruz Clarin, Eri Motoyama, Ahmed Nabil, Koichiro Uto, Sachiko Kanki, Kenichi Kimura, Hiromi Yanagisawa, Mitsuhiro Ebara
15:00-15:15	**#1034 Adhesive injectable hydrogel for tumor tracking** Hao-Chun Hsu, Ming-Hua Ho
15:15-15:30	**#1033 The development of 3D biomimetic gastric dynamic model** Y.J. Lai, Y.T. Hsu and M.H. Ho
15:30-15:45	**Break Time**
Chair	
15:45-16:00	**#1046 The iron oxide-galactosylated nanoparticles are used for photodynamic therapy and immunostimulation in orthotopic bladder cancer treatment** Y. C. Chin, Y. T. Chen, L. X. Yang, F. T. Hsu, C. C. Huang
16:00-16:15	**#1047 Macrophage reprogramming via ROS modulation: a synergistic approach to overcome tumor immunosuppression** T.Y. Cheng, L.C. Chang, S.S. Wu, Y.C. Chin, Y.J. Chen, Z.C. Chia, W.P. Su and C.C. Huang
16:15-16:30	**#1029 Mixed-valence cerium oxide nanoparticles in borate glass: a promising biomaterial** Kisa S. Ranasinghe, Emily Manqueros, Andrew Hiu

16:30-16:45	**#1036 Ultrasonic properties of self-healing 3D-printed phantom** Yu-Tzu Chang, Ming-Hua Ho
16:45-17:00	**#1024 Characterization and bioactivity evaluation of akermanite ceramics made from dolomite and perlite** C. El Omary, A. Harrati, Y. Arkame, A. Manni, Y. El Maakoul, C. Sadik and S. El Moutaki
17:00-17:15	**#1042 Modeling ulcerative colitis on a macro-porous collagen micro-physiological system with colon epithelium and immune cells** K.J. Gallagher, Y. Wang, D.M. Shows, C.E. Sims, J.D. Lord, N.L. Allbritton
17:15-17:30	**#1027 Lipid nanoparticles for targeted RNA delivery: a biomimetic approach using cancer cell membrane-derived nano-ghosts** S. Garbujo, D. Prosperi and M. Colombo
17:30-17:45	**#1052 The role of IL-6 in brain tissue fluid during acute phase response caused by different implants** Sibel Akyol, Feride Elif Can, Semih Can Çetintaş and Murat Hancı
17:45-18:15	**Closing Ceremony**

Poster Session

Date: Tuesday, July 15
Time: 15:00-17:00
Venue: Alder Hall

Category: G01. Biodegradable materials and devices

001) **#1037 Comparison of the application of silica nanoparticles synthesized from different silicon sources in active packaging**
Hsien-Yu Lin, Min-Hsuan Tsou, Hsiu-Mei Lin

002) **#1049 Comparative analysis of silica nanoparticles derived from various silicon sources for active packaging applications**
Hsien-Yu Lin, Min-Hsuan Tsou, Hsiu-Mei Lin

003) **#1064 Radiopaque pin for fixation of fractures**
Madhulika Narayan

004) **#1068 Bioresorbable drug-eluting polycaprolactone mesh scaffold for enhanced muscle injury repair**
Ying-Chao Chou, Yung-Heng Hsu, Demei Lee, Jheng-Wei Yang, Yi-Hsun Yu, Err-Cheng Chan, Shih-Jung Liu

005) **#1071 Innovative CO_2-encapsulated bupivacaine-eluting Pluronic F127 hydrogel for Achilles tendon injury treatment**
Yi-Hsun Yu, Yung-Heng Hsu, Ying-Chao Chou, Bo-Kui Hong, Chao-Tsai Huang, Shih-Jung Liu

Category: G02. Metallic biomaterials

006) **#1040 Fast endothelialization of magnetic steel with the application of spion-laden human umbilical vein endothelial cells**
P. Trzaskowska, E. Rybak, M. Trzaskowski, J. Krzemiński, D. Baraniecki, I. Cicha

007) **#1048 Brown algae collected from different regions of Taiwan are utilized to synthesize environmentally friendly silver nanoparticles, which exhibit antibacterial, antioxidant, and photocatalytic properties for diverse applications**
Yu-Hsien Liu, Min-Hsuan Tsou, Chun-Jen Su, Jih-Shang Hwang, Hsiu-Mei Lin

Category: G04. Smart materials

008) **#1051 A dual-imaging mesoporous silica nanoparticle-exosome hybrid platform for future cancer therapy**
Cheng-Chang Lee, Hsiu-Mei Lin

Category: G05. Synthesis and fabrication of biomaterials and devices

009) **#1053 Tailoring bacterial cellulose for lidocaine delivery: effects of carbon sources on drug release and fiber structure**
Sibel Akyol, Feride Elif Can, Semih Can Çetintaş and Murat Hancı

010) **#1072 Electrospun celecoxib–collagen–bupivacaine-loaded PLGA nanofibers for Achilles tendon reconstruction**
Yi-Hsun Yu, Yung-Heng Hsu, Ying-Chao Chou, Ping-Chun Yu, Shih-Jung Liu

Category: G06. Regenerative medicine and tissue engineering

011) **#1025 Electrospun bioactive polymer biomaterials enriched with collagen and platelet-rich plasma as a platform for in vitro chondrogenic differentiation of human mesenchymal stem cells**
Paulina Trzaskowska, Ewa Rybak, Kamil Kopeć, Tomasz Ciach, Piotr Wieciński, Wojciech Święszkowski, Ewa Kijeńska-Gawrońska

012) **#1061 A novel intra-articular gel for osteoarthritis via enhanced osteogenic regeneration and antibacterial effect**
C.W. Hsu, J.H. Yen, W.T. Chio, Y.F. Chen and S.T. Huang

013) **#1075 Pulmonary delivery of extracellular matrix and exosomes for treating lps-induced acute lung injury in rats**
CY Kao, HY Chin, SP Lee, KL Huang

014) **#1081 3D printing of enzymatically softening hydrogel biomaterials**
Olivia P. Dotson, Sherina Malkani, Inkyung Kang, Cole A. DeForest, Kelly R. Stevens

Category: G07. Interactions of biomaterials and cells

015) **#1045 Effects of the PRP-Treated MSC conditioned media on human periodontal ligament fibroblast**
S. Kang, G.M. Seon, S.W. Um, J.H. Yoon and H.-C. Yang

016) **#1074 Modulating 4D Cell function via grayscale spatiotemporal biomaterial customization**
Ryan P. Brady, Ryan M. Francis, Jeremy R. Filteau, Irina Kopyeva and Cole A. DeForest

017) **#1076 Biofunctional biomaterial design to reduce macrophage inflammation for chronic wound healing**
Aakanksha Jha, Joseph Larkin III, Erika Moore

Category: G08. Nanoscale biomaterials

018) **#1030 Analytical study of extracted nanoceria from a soluble borate glass**
Emily Manqueros, Kisa Ranasinghe, Andrew Hiu

Category: G09. Delivery of drug, gene, vaccine, and active biomolecules

019) **#1020 Advanced biopolymer systems for bacteriophage delivery in acinetobacter baumannii treatment**
N.-T. Lin and L.-C. Lin

020) **#1041 Partially pegylated liposomes for immune regulation and fibrosis prevention in irradiated esophageal tissue**
G.M. Seon, I.G. Kim, S.W. Um, J.H. Yoon, S. Kang, E.J. Chung and H.-C. Yang

021) **#1043 Orally delivered DOX-loaded antioxidant nanoparticles for IL-6 suppression and solid tumor inhibition**
Z.L. Chau, Y. Ikeda and Y. Nagasaki

022) **#1055 Pirfenidone-loaded hydrogel reverses chronic inflammation-induced urothelial fibrosis via mitochondrial repair and EMT modulation in the in vitro models**
Varshiny Gopinath, Vignesh Muthuvijayan, M. Raj Rajasekaran

023) **#1058 Novel mRNA nanocarrier platform for the treatment of cardiac disease**
SF Tsui, SCC Shiu, WK, Ng, KM Ng, JA Tanner and HF Tse

024) **#1060 Dry adhesive hydrogel patch for localised delivery of drugs**
W.K. Ng, S.F. Tsui, K.M. Ng and H.F. Tse

025) **#1062 Neuron-targeted 2-Deoxyglucose-Dendrimer-Rosiglitazone nanotherapy mitigates neuroinflammation and cognitive deficits in traumatic brain injury**
Aqib Iqbal Dar, Zhi Zhang, Shamila Gopalakrishnan, Rishi Sharma, Anu Rani, Anjali Sharma

026) **#1067 Telmisartan-loaded PLGA nanofibers enhance endothelial repair and reduce neointimal hyperplasia**
Chen-Hung Lee, Kuo-Sheng Liu, Julien G. Roth, Kuo-Chun Hung, Yen-Wei Liu, Shin-Huei Wang, Chi-Ching Kuo, Shih-Jung Liu

027) **#1069 Resorbable nanofibrous membranes for sustained co-delivery of Acyclovir and Ketorolac in herpes treatment**
Shih-Jyun Shen, Pin-Chao Feng, Yi-Hua Kuo, Shih-Jung Liu

028) **#1070 Hybrid 3D-printed biodegradable artificial joints with drug- and growth factor-loaded nanofibers for small joint reconstruction**
Yung-Heng Hsu, Ying-Chao Chou, Chao-Lin Chen, Yi-Hsun Yu, Shih-Jung Liu

029) **#1078 GliaTrap is a biodegradable, non-swelling and non-inflammatory hydrogel with tuned release of CXCL12 to attract migrating glioblastoma cells**
Y. Suita, S. Miriyala, D.M. Toruner, M. Pizzagalli, O.P. Leary, W. Yue, L. Xie, B. Akobundu, N. Pertsch, A. Fiser, E. Fajardo, J. Shen, N. Tapinos

030) **#1080 Novel ionizable phospholipids for efficient gene editor delivery in vivo**
Antony Jozic, Chloe Le Roux, Mathieu Berchel, Paul-Alain Jaffres and Gaurav Sahay

031) **#1083 Targeting the GUT-CNS axis in multiple sclerosis with microbial metabolites delivered via oral nano-prodrugs**
Lindsey M. Williams, Brad Cleveland, Kiki Wang, Jack Smith and Shijie Cao

Category: G10. Functionalization and bioactivity

032) **#1019 Synthesis and characterization of novel anomeric glycosides derived from 6-Gingerol via enzymatic glycosylation: enhanced aqueous solubility and potentiated anti-inflammatory efficacy**
J.Y. Wu, T.Y. Wang, H.Y. Ding, H.Y. Lin and T.S. Chang

Category: G11. Biomaterials and cancers

033) **#1004 TD139- and AFATINIB-encapsulated solid lipid nanoparticles for brain cancer cell apoptosis via inhibition of GALECTIN-3 and EGFR**
Yung-Chih Kuo, Liao Si-Han

034) **#1066 Multivalent PD-L1-targeting elastin-like polypeptide carrier for selective delivery of KLAKLAK in cancer therapy**
Jisan Hong, Vijaya Sarangthem, Rang-Woon Park

035) **#1073 Smart biomaterials: the emerging role of elastin-like polypeptides in therapeutics and 3D microenvironment engineering**
Vijaya Sarangthem, Jisan Hong, Byung-Heon Lee, Rang-Woon Park

Category: S01. Nanomedicines

036) **#1016 Glycosidic switch liposomes (GSL) - a potent nanomedicine for pancreatic cancer therapy**
Bing-Mae Chen, Tracy Trieu, Seymour Yang, Yu-Lin Leu, Chun-Hung Lin and S.R. Roffler

Category: S03. Orthopedic biomaterials

037) **#1008 Biomechanical analysis of anterolateral screw fixation for osteoporotic spines: comparing methods and positions in porcine vertebrae model**
C.H Hsieh, D.M Lee, W.P Chen, T.T. Tsai, P-L Lai, M.K Hsieh, C.L. Tai

038) **#1009 Biomechanical analysis of rod-tulip interface mismatch and pedicle screw loosening in long porcine spine segments**
C.L. Tai, M.K. Hsieh, D.M. Lee, W.P. Chen

039) **#1013 A novel artificial cervical disc based on topological structure design and biomechanical study**
Weng-Pin Chen, Che-Hua Yang, Yun-Ting Hsieh, Ming-Kai Hsieh and Ching-Lung Tai

Category: S07. Orthopedic biomaterials

040) **#1010 Synthesis of SNO2 nanorods by using polymeric capping agents**
Tsung-Wei Zeng, Cai Guang, Yi-Fang Liang and Heng-Qi Jiang

041) **#1022 Applying PPG signal principles to detect cellular changes**
R.C. Weng, C.W. Yang and C.H. Hwang

042) **#1063 On-demand debonding of medical adhesive tapes to mitigate medical adhesive related skin injury (MARSI)**
R. Liu, L.Y. Nelson and E.J. Seibel