

Welcome Message

Biomaterials International (BMI) Conference 2024

Invitation

Dear Colleagues,

The Organizing Committee takes great pleasure in extending an invitation for your participation in Biomaterials International 2024, to be held in Bangkok, Thailand from June 30th to July 4th, 2024. The conference will be hosted at the Ambassador Hotel, Bangkok, where international research communities from various scientific disciplines including biology, physiology, materials science, physics, chemistry, engineering, and clinical science 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 2024 will feature several Special Symposia dedicated to the applications of biomaterials in biomechanics, biosensors and biochips, biomedical optoelectronics, among other topics.

While Biomaterials International 2024 will provide a robust scientific and technological program, the social and cultural experiences offered in Bangkok should not be overlooked. The Organizing Committee is committed to ensuring a memorable event in one of Thailand's most alluring regions.

We sincerely hope you will join us at Biomaterials International 2024 for a meaningful and enjoyable time with your colleagues in the field of biomaterials. The entire Organizing Committee looks forward to welcoming you to Bangkok.

Yours sincerely,



Shih-Jung (Sean) Liu

Chair
Professor, Chang Gung University



Yottha Srithep

Co-Chair
Professor, Mahasarakham University

Conference Committee

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

Co-Chair Srithep Y, PhD (Faculty of Engineering, Mahasarakham University)

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

Committee Lai WF, PhD (Food Science and Nutrition, University of Leeds)

Tay KP, PhD (Biomedical Engineering, National University of Singapore)

Wang CY, PhD (Biochemical Technology R&D Center, Ming Chi University of Technology)

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
- G11. Biomaterials and cancers

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
University of Edinburgh

Polymers on and inside cells



Holzer C, PhD
Montanuniversität Leoben

Additive manufacturing of bone implants



Nakano T, PhD
Osaka University

Bone extracellular matrix orientation composed of apatite and collagen, and development of novel medical devices for promoting the orientation by metal 3D printing



**Srimaneepong V,
DDS/PhD**
Chulalongkorn University

**Bioactive low-modulus titanium alloy:
From engineering to biological aspects**

Plenary Speakers



Webster T, PhD

Interstellar Therapeutics
and Hebei University of
Technology

**Implanting nanomaterials in human:
Complete success with zero implant failure**

Invited Speakers

Chittasupho C, PhD	Chiang Mai University	Polymeric based carriers for the delivery of plant extract and natural compounds
Chou PY, MD	Chang Gung Memorial Hospital (Plastic and Reconstructive Surgery and Craniofacial Research)	Morphogenetic protein-, antimicrobial agent-, and analgesic-incorporated nanofibrous scaffolds for the therapy of alveolar clefts
Cohn D, PhD	The Hebrew University of Jerusalem	3D printed functional medical devices: From molecular design to performance
Hanawa T, PhD	Osaka University	Principle of excellent biocompatibility of titanium from the viewpoint of surface science
Hsieh MK, MD/PhD	Chang Gung Memorial Hospital (Orthopedic Surgery)	Dilemma in spinal surgery: A biomechanical perspective and future development
Huang HH, PhD	National Yang Ming Chiao Tung University	Surface modifications for dental implants
Huang YT, PhD	Chung Yuan Christian University	The interactions and stability of antimicrobial peptides (AMPs) with bacterial surface
Ito T, PhD	The University of Tokyo	Development of new micro-sized artificial oxygen carriers inspired by red blood cells
Katayama Y, PhD	Kyushu University	Immuno-regulation systems for therapeutics
Lai J, PhD	University of Washington	Bioprocessing technologies for improved biomarker detection and efficient biologics manufacturing
Lee CH, MD/PhD	Chang Gung Memorial Hospital (Cardiology)	Enhancing scarless cutaneous repair: Tuning the antifibrotic effect of iPSC-derived exosomes loaded with core-shell microparticles

Invited Speakers

Nanda HS, PhD	Indian Institute of Information Technology, Design and Manufacturing	Design and development of mechanically competent composite biomaterials for biomanufacturing
Patrojanasophon P, PhD	Silpakorn University	Biomaterials for mucosal drug delivery
Scheibel T, PhD	University of Bayreuth	Designed spider silk based materials for specific cell interactions
Sosnik A, PhD	Israel Institute of Technology	Self-assembled polymeric nanocarriers in drug delivery and targeting
Stein A, PhD	University of Minnesota	Materials design to enable continuous monitoring of biomarkers with minimally-invasive wearable microneedle patch sensors
Suwanprateeb J, PhD	National Metal and Materials Technology Center	Towards 3D printed low temperature transformed calcium phosphate based construct for bone tissue regeneration
Suwantong O, PhD	Mae Fah Luang University	Utilization of biopolymer-based wound dressings incorporated with natural product extracts for diverse wound management
Tsai TT, MD/PhD	Chang Gung Memorial Hospital (Orthopedic Surgery)	Intervertebral disc degeneration and regeneration
Viphavakit C, PhD	Chulalongkorn University	Optical fiber sensor for biomedical applications
von Recum H	Case Western Reserve University	Evaluating microbiome in the presence of intracortical brain implants
Yamamoto M, PhD	Tohoku University	Cellular responses to nano/microplastics

Conference Information

Conference Venue	Ambassador Hotel Bangkok		
Registration Service	Date	Time	Venue
	Sunday, June 30	17:00-19:00	Convention Hall Foyer
	Monday, July 1	09:00-16:00	Convention Hall Foyer
	Tuesday, July 2	09:00-16:00	
Conference Badge	Please ensure that you wear your badge at all times to enter the conference rooms. There may be coupons attached to your badge for additional purchases.		
Welcome Reception	Date	Sunday, June 30	
	Time	17:00-19:00	
	Location	Convention Hall Foyer	
Banquet	Date	Tuesday, July 2	
	Time	18:00-21:00	
	Location	Convention Hall C	
Lab Tour	9:00-12:00, Thursday, July 4 (gathering at 9:00 at the Ambassador Hotel Bangkok)		

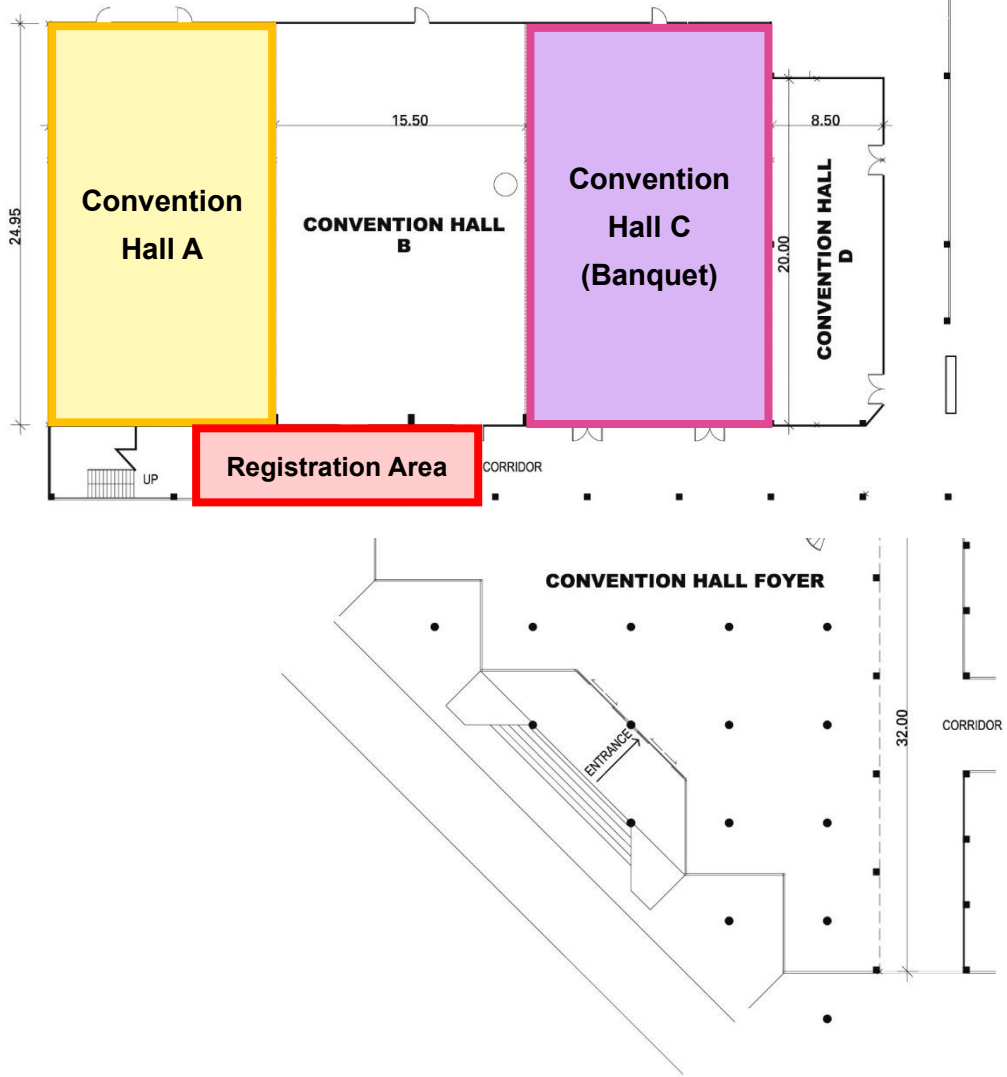
Oral Presentation Schedule

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	Tuesday, July 2	13:00-17:00	Poster Setup
		17:00-18:00	Poster Presentation
		18:00-18:30	Poster Removal

Floor Plan



Program at a Glance

Sunday, June 30		
Time	Venue	Activity
17:00-19:00	Convention Hall Foyer	Welcome Reception

Monday, July 1	
Venue	Convention Hall A
09:00-09:10	Opening Ceremony Liu SJ, PhD/Chang Gung University Srithep Y, PhD/Maharakham University Ueng SWN, MD/Chang Gung Memorial Hospital
Venue	Convention Hall A
09:10-10:30	Plenary Talks
10:30-10:45	Coffee Break
Venue	Convention Hall A
10:45-12:00	Invited Talks
12:00-13:00	Lunch
Venue	Convention Hall A
13:00-17:30	Oral Talks

Tuesday, July 2	
Venue	Convention Hall A
09:00-10:20	Plenary Talks
10:20-10:35	Coffee Break
Venue	Convention Hall A
10:35-12:15	Invited Talks
12:15-13:00	Lunch
Venue	Convention Hall A
13:00-14:40	Invited Talks
14:40-14:50	Coffee Break
Venue	Convention Hall A
14:50-16:55	Invited Talks
Venue	Convention Hall Foyer
17:00-18:00	Poster Presentations
Venue	Convention Hall C
18:00-21:00	Banquet

Wednesday, July 3	
Venue	Convention Hall A
09:00-09:40	Plenary Talk
Venue	Convention Hall A
09:40-10:30	Invited Talks
10:30-10:40	Coffee Break
Venue	Convention Hall A
10:40-11:55	Invited Talks
11:55-13:00	Lunch
Venue	Convention Hall A
13:00-17:30	Oral Talks
Venue	Convention Hall A
17:30-18:00	Closing Ceremony

Thursday, July 4	
Venue	Chulalongkorn University
9:00-12:00	Lab Tour

Presentation Schedule

Monday, July 1	
Venue	Convention Hall A
09:00-09:10	<p>Opening Ceremony</p> <p>Liu SJ, PhD/Chang Gung University Srithep Y, PhD/Maharakham University</p> <p>Ueng SWN, MD/Chang Gung Memorial Hospital</p>
Venue	Convention Hall A
Chair	Srithep Y, PhD
09:10-09:50	<p>#1051 Additive manufacturing of bone implants <u>Holzer C</u></p>
Chair	Chung RJ, PhD
09:50-10:30	<p>#1015 Implanting nanomaterials in human: Complete success with zero implant failure <u>Webster T</u></p>
10:30-10:45	Coffee Break
Venue	Convention Hall A
Chair	Yeh CL, PhD
10:45-11:10	<p>#1091 Utilization of biopolymer-based wound dressings incorporated with natural product extracts for diverse wound management <u>Suwantong O</u></p>
11:10-11:35	<p>#1088 Towards 3D printed low temperature transformed calcium phosphate based construct for bone tissue regeneration <u>Suwanprateeb J</u></p>
11:35-12:00	<p>#1074 The interactions and stability of antimicrobial peptides (AMPs) with bacterial surface <u>Huang YT</u></p>
12:00-13:00	Lunch

Monday, July 1	
Venue	Convention Hall A
Chair	Liu TY, PhD
13:00-13:15	#1094 Effect of epoxidized soybean oil on melting behavior of poly(L-lactic acid) and poly(D-lactic acid) blends after isothermal crystallization <u>W.W. Li</u> , Y. Srithep
13:15-13:30	#1039 Comparable study on phase stability and mechanical properties of near-eutectoid Ti-Au and Zr-Au alloys for interventional devices <u>Hideki Hosoda</u> , Naoki Nohira, Wan-Ting Chiu, Masaki Tahara
13:30-13:45	#1012 Formation Ti-Al intermetallics/TiB₂ composites by combustion synthesis <u>C.L. Yeh</u> , Y.C. Zhan
13:45-14:00	#1036 Assessment of the printability of salt-induced kappa-carrageenan hydrogels for 3D printing applications in tissue engineering <u>P. Thareja</u>
Chair	Hosoda H, PhD
14:00-14:15	#1038 Swelling of the viscoelastic hyaluronic acid double-network hydrogel with reversible cross-links L.C. Wu, Y. Ikegami, H. Ijima
14:15-14:30	#1043 Polypeptide copolymer scaffold composed of glutamate and lysine for neuronal axon growth Yu-Ting Lin, Meng-Fang Lin, Chun-Yu Chang, Wei-Fang Su, Yu-Sheng Hsiao, Yu-Ching Huang
14:30-14:45	#1044 Replace dimethylacetamide with diethylformamide and optimize the solvent system to prepare a bioscaffold for cell growth Chia-Hsien Lee, Meng-Fang Lin, Yu-Ching Huang, and Chun-Yu Chang
14:45-15:00	#1089 Advanced strategies for stabilizing collagen hydrogels: incorporating covalent bonds, patterning, and spacers to mitigate cell-induced contraction in tissue engineering applications <u>Hsiu-Wei Fan</u> , Kuan-Ho Pan, Shin-Yan Wai, Min-Chun Tsai, Ying-Chieh Chen
15:00-15:15	#1002 Cytoskeletal-to-nuclear mechanoresponses in MSCs through electromagnetized Au-nanofiber matrix <u>R.K. Singh</u> , H.W. Kim

Monday, July 1

Chair	Gupta S, PhD
15:15-15:30	#1090 Revolutionizing tissue engineering: optimizingvascular and neural integration for enhanced muscle regeneration of volumetric muscle loss Po-Yu Chen, <u>Shih-Yen Wei</u> , Chia-Chang Hsieh, Ying-Chieh Chen
15:30-15:45	#1004 Nir-responsive methotrexate-modified iron selenide nanorods for synergistic magnetic hyperthermia/ photothermal / chemodynamic / chemotherapy Senthilkumar Thirumurugan, Yu-Chien Lin, <u>Ren-Jei Chung</u>
15:45-16:00	#1085 Self-assembly of carbamylated lysine repeat peptide amphiphiles into fibrillar biomaterials <u>Vivek Shekhar</u> , Sharad Gupta
16:00-16:15	#1029 Organic semiconductor materials to fabricate friction layers of liquid-solid contact triboelectric nanogenerators for water energy harvesting <u>G.B. Liao</u> , M.F. Lin
Chair	Hsieh MK, MD/PhD
16:15-16:30	#1021 Fabrication of silver-polyethylenimine-dendritic polymer nanocapsules as active sers substrate for bioanalysis <u>Yu-Xuan Huang</u> , Ying-Chi Huang, Kuan-Syun Wang, Chien-Hsin Wu, Ding-Jia Yueh, Ting-Yu Liu, Ru-Jong Jeng
16:30-16:45	#1032 Fabrication of superhydrophobic aerogel for water based TENGs <u>Nai-Ting Ma</u> , Meng-Fang Lin
16:45-17:00	#1041 A robust honeycomb-like polymeric substrate fabricated by dendritic urethane acrylates for surface-enhanced raman scattering detection <u>Gong-De Lin</u> , Kuan-Syun Wang, Chien-Hsin Wu, Ying-Chi Huang, Ying-Jun Lin, Ru-Jong Jeng, Ting-Yu Liu
17:00-17:15	#1053 Application of conductive polymer film-modified carbon felt as the negative electrode in all-vanadium redox flow batteries <u>Wan-Rou Liu</u> , Chao-Chi Lai, Yun-Chu Chen, Ying-Tong Lai, Ting-Yu Liu, Chien-Hong Lin
17:15-17:30	#1006 Aging behavior and cyclic stability of the single crystal Ni-Mn-Ga particles/polymer composite for biomedical applications <u>W.T. Chiu</u> , P. Sratong-on, M. Tahara, V.A. Chernenko, H. Hosoda

Tuesday, July 2	
Venue	Convention Hall A
Chair	Tsai TT, MD/PhD
09:00-09:40	Bone extracellular matrix orientation composed of apatite and collagen, and development of novel medical devices for promoting the orientation by metal 3D printing <u>Nakano T</u>
Chair	
Chair	Lee CH, MD/PhD
09:40-10:20	#1093 Polymers on and inside cells <u>Bradley M</u>
10:20-10:35	Coffee Break
Venue	Convention Hall A
Chair	Lin MF, PhD
10:35-11:00	#1102 Enhancing scarless cutaneous repair: Tuning the antifibrotic effect of iPSC-derived exosomes loaded with core-shell microparticles <u>Lee CH</u>
11:00-11:25	#1018 Dilemma in spinal surgery: A biomechanical perspective and future development <u>Hsieh MK</u>
11:25-11:50	#0000 Morphogenetic protein-, antimicrobial agent-, and analgesic-incorporated nanofibrous scaffolds for the therapy of alveolar clefts <u>Chou PY</u>
11:50-12:15	#0000 Biomaterials for mucosal drug delivery <u>Patrojanasophon P</u>
12:15-13:00	Lunch

Tuesday, July 2	
Venue	Convention Hall A
Chair	Chou PY, MD
13:00-13:25	#0000 Polymeric based carriers for the delivery of plant extract and natural compounds <u>Chittasupho C</u>
13:25-13:50	#1016 Materials design to enable continuous monitoring of biomarkers with minimally-invasive wearable microneedle patch sensors <u>Stein A</u>
Chair	Lai PL, MD/PhD
13:50-14:15	#0000 Intervertebral disc degeneration and regeneration <u>Tsai TT</u>
14:15-14:40	#0000 Bioprocessing technologies for improved biomarker detection and efficient biologics manufacturing <u>Lai J</u>
14:40-14:50	Coffee Break
Venue	Convention Hall A
Chair	Kao CW, MD/PhD
14:50-15:15	#0000 Optical fiber sensor for biomedical applications <u>Viphavakit C</u>
15:15-15:40	#1092 Surface modifications for dental implants <u>Huang HH</u>
15:40-16:05	#0000 Designed spider silk based materials for specific cell interactions <u>Scheibel T</u>
Chair	Hsiao HY, PhD
16:05-16:30	#0000 Evaluating microbiome in the presence of intracortical brain implants <u>von Recum H</u>
16:30-16:55	#1017 Self-assembled polymeric nanocarriers in drug delivery and targeting <u>Sosnik A</u>
Venue	Convention Hall Foyer
17:00-18:00	Poster Presentations
Venue	Convention Hall C
18:00-21:00	Banquet

Wednesday, July 3	
Venue	Convention Hall A
Chair	Sakai S, PhD
09:00-09:40	#1019 Bioactive low-modulus titanium alloy: From engineering to biological aspects <u>Srimaneepong V</u>
Venue	Convention Hall A
Chair	Kim GH, PhD
09:40-10:05	#0000 Cellular responses to nano/microplastics <u>Yamamoto M</u>
10:05-10:30	#0000 Immuno-regulation systems for therapeutics <u>Katayama Y</u>
10:30-10:40	Coffee Break
Venue	Convention Hall A
Chair	Tsutsumi Y, PhD
10:40-11:05	#1014 Principle of excellent biocompatibility of titanium from the viewpoint of surface science <u>Hanawa T</u>
11:05-11:30	#1107 Design and development of mechanically competent composite biomaterials for biomanufacturing <u>Nanda HS</u>
11:30-11:55	#0000 3D printed functional medical devices: From molecular design to performance <u>Cohn D</u>
11:55-13:00	Lunch

Wednesday, July 3

Venue	Convention Hall A
Chair	Hanawa T, PhD
13:00-13:15	<p>#1023 Improvement of corrosion resistance and biosafety for martensitic stainless steel by laser thermal processing</p> <p><u>Y. Tsutsumi</u>, M. Shimabukuro, T. Manaka, M. Goto, M. Kaodowaki, H. Katayama, M. Kawashita, T. Ishimoto, T. Hanawa</p>
13:15-13:30	<p>#1026 Development of electrochemical technique to improve corrosion resistance of austenitic stainless steels</p> <p><u>Tomoyo Manaka</u>, Yusuke Tsutsumi, Hideki Katayama, Takuya Ishimoto, Takao Hanawa</p>
13:30-13:45	<p>#1054 Effect of annealing temperature on mechanical properties of Ti-Au-Mo alloys</p> <p><u>N. Nohira</u>, W.T. Chiu, M. Tahara, H. Hosoda</p>
13:45-14:00	<p>#1069 Biocompatible conductive polymer coating with graphene oxide and silver nanoparticles for antibacteria and raman enhancing sensing</p> <p><u>Hsiang-Ting Lan</u>, Chun-Hao Wu, Kuan-Syun Wang, Yun-Chu Chen, Ting-Yu Liu</p>
Chair	Wang CY, PhD
14:00-14:15	<p>#1030 Bionic multi-stimulus-responsive bilayer soft actuator with sensing and structure color functions</p> <p><u>W.C. Jhao</u>, M.F. Lin</p>
14:15-14:30	<p>#1020 Pre-epithelialized cryopreserved tracheal allograft for neo-trachea flap engineering</p> <p><u>Qixu Luke Zhang</u>, Peirong Yu</p>
14:30-14:45	<p>#1027 Incorporation of lymphatic endothelial cells into AV-loop chamber for lymphatic vessel regeneration</p> <p><u>Hui-Yi Hsiao</u>, Gina Alicia Mackert, Yung-Chun Chang and Jung-Ju Huang</p>
14:45-15:00	<p>#1034 A one-step fabrication method for cell-spheroid-containing microfibers using thermosensitive hydrogel</p> <p><u>J.Y. Kim</u>, W.J. Kim, J.U. Lee, S.J. Chae, H. Hwangbo, S.Y. Jo, G.E. Heo, G.H. Kim</p>
15:00-15:15	<p>#1056 Development of in situ magnetic fields supplemented bioprinting process for fabrication of anisotropic skeletal muscle</p> <p><u>H. Hwangbo</u>, J.Y. Lee, W.J. Kim, J.U. Lee, S.J. Chae, M. Pei, and G.H. Kim</p>

Wednesday, July 3	
Chair	Nohira N, PhD
15:15-15:30	#1057 Fabrication of curved fibrous poly(e-caprolactone) structures for enhanced cellular response in tissue engineering <u>M. Pei</u> , W.J. Kim, J.U. Lee, S.J. Chae, H. Hwangbo, G.E. Heo, G.H. Kim
15:30-15:45	#1060 Modified bioprinting process for efficient cellular alignment and myotube formation <u>G.E. Heo</u> , J.Y. Lee, Y.W. Koo, W.J. Kim, J.U. Lee, S.J. Chae, J.Y. Kim, H. Hwangbo, M. Pei, N. Francis, T.H. Lee, G.H. Kim
15:45-16:00	#1071 Fabrication of bioink containing omega-3 polyunsaturated fatty acids for muscle regeneration <u>F. Nacionales</u> , S.Y. Jo, Y.W. Koo, W.J. Kim, S.J. Chae, J.Y. Kim, H. Hwangbo, M. Pei, T.H. Lee, G.H. Kim
16:00-16:15	#1073 Development of porous and uniaxially aligned cell-laden 3D constructs for muscle regeneration <u>Y.W. Koo</u> , G. Heo, W.J. Kim, J.Y. Kim, S.Y. Jo, J.Y. Lee, G.H. Kim
Chair	Lee D, PhD
16:15-16:30	#1078 Tumor cell with extrachromosomal DNA (ecDNA) in 3D culture environment <u>S.Y. Jo</u> , J.Y. Kim, H. Hwangbo, M. Pei, N. Francis, G.E. Heo, T.H. Lee, G.H. Kim
16:30-16:45	#1084 Fabrication of the 3D cellular construct using cell coating process for tissue engineering <u>S.J. Chae</u> , W.J. Kim, J.Y. Kim, H. Hwangbo, G.H. Kim
16:45-17:00	#1086 The potential of sugarbeet pectin as a component of inks for extrusion-based bioprinting <u>S. Sakai</u> , W. Mubarak
17:00-17:15	#1108 A green approach to synthesize calcium carbonate porous scaffolds for bone tissue engineering <u>Sudhir Sharma</u> , Ramesh Jagannathan
17:15-17:30	#1087 Non-enzymatic electrochemical sensing of 8-hydroxy-2'-deoxyguanosine by cuprous oxide supported on graphitic carbon nitride Mani Govindasamy, Umamaheswari Rajaji
17:30-18:00	Closing Ceremony

Poster Presentations

Date: Tuesday, July 2

Time: 17:00-18:00

Venue: Convention Hall Foyer

Category: G01. Biodegradable materials and devices

001) **#1011 Biocomposites consisted from poly(ethylene succinate)/hemp fibers with enhanced biodegradation**

Androniki Rapti, Alexandra Zamboulis, Eleftheria Xanthopoulou, Dimitrios N. Bikiaris

002) **#1042 Biodegradable screws used in percutaneous chevron osteotomy hallux valgus surgery fixation: short to midterm outcome results and literature review**

Jen-Hung Chen

003) **#1062 Biodegradable coating consisting of Mg and Ca for enhancing both antibacterial activity and osteogenesis**

R. Miyake, M. Shimabukuro, E. Marukawa, M. Kawashit

004) **#1077 Quantifying the degradation process of bioceramics bone graft using microfluidic biochip**

C. H. Huang, M. P. Chang

005) **#1103 "Hot-dog-string" drug-eluting degradable scaffolds for stenting of curve lesions: In vitro and in vivo investigations**

Zi-Yu Chen, Shih-Jung Liu, Chen-Hung Lee

006) **#1104 Drug-eluting CO₂-encapsulated hydrogel for tendon injury therapy**

Yi-Hsun Yu, Chen-Hung Lee, Yung-Heng Hsu, Ying-Chao Chou, Bo-Kui Hong, Chao-Tsai Huang, Shih-Jung Liu

007) **#1105 Degradable drug/biomolecule-eluting scaffolds for alveolar ridge preservation**

Shuen-Yeo Chen, Fu-Ying Lee, Ren-Chen Wu, Chien-En Chao, Chia-Jung Lu, Shih-Jung Liu

008) **#1106 3D-printed degradable drug-eluting artificial joints for finger joint reconstruction**

Yung-Heng Hsua, Ying-Chao Chou, Chao-Lin Chen, Yi-Hsun Yu, Chia-Jung Lu, Shih-Jung Liu

Category: G02. Metallic biomaterials

009) **#1035 Endowing antibacterial activity to titanium and tantalum surfaces by micro-arc oxidation**

M. Shimabukuro, S. Aoki, R. Kishida, T. Yokoi, M. Kawashita

Category: G03. Ceramic biomaterials

010) **#1061 Accelerated bone regeneration via a composite graft of cao-mgo-sio2 glass-ceramics and calcium sulfate ceramics**
Guan-Yi Hung, Chi-Yun Wang, Cheng-Sao Chen, Po-Liang Lai, Kuei-Chih Feng , Pin-Yi Chen

011) **#1096 Effect of simulated intraoral aging environment on the fracture properties of multilayer zirconia**
T.T. Chen, C.Y. Liu, H.H. Huang

Category: G05. Synthesis and fabrication of biomaterials and devices

012) **#1007 Structural and thermodynamical investigation of triblock copolymers of polylactide and poly(ethylene glycol), PLA-b-PEG-b-PLA, envisaged for medical applications**
N. Bikiaris, P. Klonos, A. Kyritsis, Panagiotis Barmplexis, D. Labropoulou

013) **#1009 Chitosan/oxidized-dextran dressings containing inorganic additives for wound caring with enhanced hemostatic properties**
Rizos Bikiaris, Ioanna Koumentakou, George Z. Kyzas

014) **#1025 Near-infrared light-triggered drug release from UV- and gsh-responsive polymersomes for cancer therapy**
L.F. Wang, M.F. Tsai, J.S. Chen

015) **#1065 Improved bioactivity in peek implant via cao-mgo-sio2/caso4 bioglass-ceramic coating**
Yan-Ting Chen, Guan-Yi Hung, Chi-Yun Wang, Cheng-Sao Chen, Pin-Yi Chen, Po-Liang Lai

016) **#1075 Enhanced hydrophilicity and bioactivity via surface modification in Ti-6Al-4V**
Yu-Jie Wu, Chi-Yun Wang, Po-Liang Lai, Pin-Yi Chen, Cheng-Sao Chen

Category: G06. Regenerative medicine and tissue engineering

017) **#1005 Synthesis and characterization of chitosan patches containing inorganic additives with enhanced hemostatic properties**
Ioanna Koumentakou, Dimitrios N. Bikiaris

018) **#1046 Development of chitosan nanofibers/hyaluronic acid ink for bioprinting**
Ryo Hiram, Shinji Sakai

019) **#1063 Development of cell-laden microparticles composed of exopolysaccharide**
Ryota Goto, Masaki Nakahata, Shinji Sakai

020) **#1064 Application of nonwoven scaffolds composed of silk nanofibers to cell culture substrates**
Kei Hasegawa, Shinji Sakai

021) **#1066 3D bioprinting involving bioink gelation induced by alternately extruded**

support material

Takashi Kotani, Shinji Sakai

022) **#1076 Immobilization of catalase on the cell surface for protection against hydrogen peroxide**

Hiroto Nakaya, Shinji Sakai

023) **#1095 Effects of a graphene oxide-alginate sheet scaffold on tendon healing**

Jong Pll Yoon, Seung Ho Chung, Won Ki Hong

Category: G07. Interactions of biomaterials and cells

024) **#1082 Natural flat silk-cocoon based biomaterial scaffolds for 3D mammalian cell culture**

K. Y. Chong, E. W. Y. Phoon, S. S. Lin

025) **#1101 Effect of PULLULAN on intervertebral disc degeneration**

I-Chien Cheng, Chi-Yun Wang, Yu-Wei Kung

Category: G08. Nanoscale biomaterials

026) **#1067 Characteristics and applications of eco-friendly fluorescent silks from silkworms and carbon quantum dots**

Ai-Wei Liu, Jing-Xuan Liu, Chien-Ming Chen, Yu-Jie Wen, Yun-Chu Chen, Chih-Yu Kuo

027) **#1079 Chlorophyll-doped carbon quantum dots with tunable fluorescence wavelength for photodynamic therapy**

Yu-Jie Wen, Ai-Wei Liu, Chien-Ming Chen, Kuan-Syun Wang, Yun-Chu Chen

028) **#1080 Preparation of polyurethane / chitosan nanoparticles nanofibers by electrospinning for antibacterial applications**

Ting-Jia Sung, Ting-Yu Liu, Yu-Wei Cheng

029) **#1098 Toxicological analysis of MnFe₂O₄@poly(tBGE-alt-PA) composite as a non-toxic novel hybrid nanomaterial for possible medical use**

Rohit Kumar, Piyush Kumar Gupta

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

030) **#1099 Combination of platinum-doped microparticles and tissue adhesive gel to synergize with radiotherapy for high-grade glioma**

Jason Lin, Wei-Yang Hong, Tony Hsiang-Kuang Liang, Feng-Huei Lin

Category: G10. Functionalization and bioactivity

031) **#1010 Synthesis of poly(ethylene furanoate) nanocomposites with enhanced antibacterial properties for food packaging applications**

Johan Stanley, Dimitrios N. Bikiaris, Dimitra A. Lambropoulou

Category: S01. Nanomedicines

032) **#1001 BV6-, SM164- and etoposide-loaded cocoa butter-polyvinyl alcohol lipopolymer with grafted transferrin and wheat germ agglutinin to upregulate inhibitor of apoptosis for brain cancer treatment**

Y.C. Kuo, C.W. Lin

033) **#1024 pH-responsive alkyl radical nanogels for targeted treatment of psoriatic hyperplasia**

Z.C. Lin, G.R. Nirmal, J. Y. Fang

034) **#1055 The applications of biocompatible cerium carbonate based nanozymes**

S. Thangudu, Lee C. J. Lee, C.-H. Su

Category: S02. Biomechanics

035) **#1013 Biomechanical evaluation of various biomaterials to enhance the applicability in revision pedicle screw**

C.L. Tai, Y.D. Li, M.K. Hsieh, D.M. Lee, P.L. Lai

036) **#1022 Development of a hydrogel-based artificial cervical disc and its biomechanical analysis**

W. P. Chen, Y. H. Yang, T. W. Chung

Category: S03. Biosensors and biochips

037) **#1008 Quantitative lateral flow immunoassay for rapid detection of procollagen type I N-terminal propeptide in the monitoring of osteoporosis treatment**

Chung-An Chen, Ping-Yeh Chiu, Tse-Hao Huang, Natalie Yi-Ju Ho, Fu-Cheng Kao, Tsung-Ting Tsai

038) **#1028 Novel coumarin-based fluorochromes with aggregation-induced emission for H₂S detection**

Y.-X. Wang, Y. Li, J.-S. Ni

039) **#1037 Integrated electrochemical-sers platform for highly sensitive detection of drugs and uremic toxins**

Yu-Ju Chu, Yun-Chu Chen, Ying-Jun Lin, Ding-Jia Yueh, Ting-Yu Liu

040) **#1052 S1 protein of SARS-CoV-2 virus detection by electrochemical and Raman enhancing biochip**

Ying-Tong Lai, Ting-Yu Liu, Yu-Ju Chu, Ying-Jun Lin, Kuan-Syun Wang, Yun-Chu Chen

041) **#1059 Synthesis of silver dendritic fractal nanostructures via electrodeposition on 3D laser-scribed graphene substrate for electrochemical-SERS detection**

Ying-Jun Lin, Yu-Ju Chu, Yun-Chu Chen, Kuan-Syun Wang, Ting-Yu Liu, Yuh-Lin Wang

042) **#1070 Photocatalytic degradation and reusable Raman enhancing detection using gold nanorods and g-C₃N₄ nanosheets with PVDF membranes**
Ting-Yu Liu, Chen-Yang Lin, Ding-Jia Yueh, Ying-Jun Lin, Yu-Jie Wen, Ting-Jia Sung, Yun-Chu Che

043) **#1072 gold nanowires grown on PDMS substrates for Raman enhancing bio-detection**
Ding-Jia Yueh, Yun-Chu Chen, Kuan-Syun Wang, Ting-Yu Liu, Yuh-Lin Wang

044) **#1083 Exploring the impact of gold nanoparticle density on silicon substrates on the sensitivity of sers immunochips**
Kuen-Lin Chen, Yu-Zhi Guo, Li-Yu Chen, Pradeep Kumar, Yu-Ching Huang, Ssu-Yung Chung, Chiu-Hsien Wu, Chien Chung Jeng

Category: S05. Signal and image processing

045) **#1068 The development of high-T_c SQUID-based biomagnetic particle imaging system for imaging the distribution of magnetic fluids in mice**
Shu-Hsien Liao, Han-Sheng Huang, Yuan-Jyun Jheng, Chin-Wei Lin, Chuan-Ze Tseng, Li-Min Wang, KuenLin Chen

Category: S06. Other techniques and applications

046) **#1033 Effect of storage time on antioxidant capacity of green tea**
Chon-Hsin Lin

047) **#1081 Flexible negative pyramid microarrays biochips for label-free SERS detection**
Y.C. Chen, C.H. Lin, D.J. Yueh, T.Y. Liu