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Welcome Message

Polymer Engineering & Science International (PESI) Conference 2026

Invitation

Dear Colleagues,

The Organizing Committee takes great pleasure in inviting you to participate in Polymer Engineering and Sciences International (PESI) 2026, which will be held in Kanazawa, Japan, from June 28 to July 2, 2026. The conference will take place at Kanazawa Bunka Hall, located in downtown Kanazawa, bringing together international research communities from various scientific disciplines of polymer engineering and sciences to discuss new and exciting advances in polymeric materials, techniques, and methodologies.

In addition to plenary and invited lectures, general symposia, and poster presentations, PESI-2026 will feature several Special Symposia focusing on up-to-date topics of polymer-related techniques and applications. While PESI-2026 will provide a robust scientific and technological program, the social and cultural experiences offered in Kanazawa should not be overlooked. The Organizing Committee is committed to ensuring a memorable event in one of Japan's most alluring regions.

We sincerely hope you will join us at PESI-2026 for a meaningful and enjoyable time with your colleagues in the field of polymer engineering and sciences. The entire Organizing Committee looks forward to welcoming you to Kanazawa.

Yours sincerely,



Shih-Jung (Sean) Liu

Chair
Professor, Chang Gung University



Kentaro Taki

Co-Chair
Professor, Kanazawa University

Conference Committee

Chair Shih-Jung Liu (Chang Gung University)

Co-Chair KentaroTaki (Kanazawa University)

Symposia

General symposia

- G1. Molding and processing
- G2. Rubber and elastomers
- G3. Polymerization and synthesis
- G4. Polymer blends and alloys
- G5. Polymer composites
- G6. Fiber, membrane and film
- G7. Mixing and compounding
- G8. Modeling and simulation
- G9. Monitoring and characterization
- G10. Rheology and rheometry

Special symposia

- S1. Additive manufacturing
- S2. Biomedical materials
- S3. Optical/Electrical applications
- S4. Nanotechnologies and nanomaterials
- S5. Benign polymers
- S6. Food engineering and science
- S7. Other techniques and applications

Plenary Speakers



Holzer, Clemens

Montanuniversität Leoben

How we are saving the world with Plastics



Manas-Zloczower, Ica

Case Western Reserve University

Design strategies to improve thermo-mechanical performance of TPUs



Tokumitsu, Katsuhisa

University of Shiga Prefecture

Exploring the relationship between earthquakes, polyolefins, and polysilanes

Plenary Speakers



Uzawa, Kiyoshi

Kanazawa Institute of
Technology

**Interactive optimization of resin
and process for sustainable and
innovative composite
manufacturing**



Vlachopoulos, John

McMaster University

**Implementation of machine
learning in polymer extrusion**

Invited Speakers

| | | |
|-------------------|---|--|
| Chen HL | National Tsing Hua University | Unraveling the complex nanostructures of sustainable sugar-based block copolymers |
| Hiejima Y | Kanazawa University | Raman spectroscopic analysis of polymeric materials |
| Ito H | Yamagata University | Control of mechanical performance and analyzing higher-order structure of recycled polypropylene |
| Kihara S | Hiroshima University | Rheological properties of polymers and elastomers dissolved with high-pressure fluids |
| Kikutani T | Institute of Science Tokyo | Infusion for simultaneous structure development and dyeing of PET fibers through cold-drawing in ethanol |
| Koh WG | Yonsei University | Multi-scale hydrogel patterns for biomedical applications |
| Kuo SW | National Sun Yat-sen University | Mediate intermolecular interaction of CO ₂ -based copolymer for the miscibility behavior |
| Lee CH | Chang Gung Memorial Hospital (Cardiology) | Biodegradable core-shell PLGA nanofibers enable sustained release of stem cell-derived, miRNA-loaded extracellular vesicles and markedly enhance vascular repair |
| Liu CL | National Taiwan University | Organic and hybrid thermoelectric materials and devices |

Invited Speakers

| | | |
|--------------------|---|---|
| Liu YL | National Tsing Hua University | Sulfur-rich polymers from elemental sulfur based reactions |
| Saito T | Institute of Science Tokyo | Efforts on thermal management of construction machinery toward carbon neutrality |
| Srithep Y | Maharakham University | Tailoring the crystallinity and thermal resistance of PLA-based films for food packaging |
| Takarada W | Shinshu University | Relationship between spinning and drawing conditions and fiber structure/properties of syndiotactic polystyrene fibers |
| Taki K | Kanazawa University | An attempt to observe a critical bubble size in CO ₂ -dissolved polystyrene film by the Small Angle Light-Scattering and the specially-designed X-ray detector of Time-resolved Small-Angle X-ray Scattering |
| Tanoue S | University of Fukui | Viscoelastic flow simulation of polymer melts in polymer processing |
| Park K | Seoul National University of Science and Technology | Polymer additive manufacturing of auxetic metastructures and its applications to 4D printing |
| Yamaguchi M | Japan Advanced Institute of Science and Technology | Rheological properties and flow-induced crystallization during cooling of polymer blends |
| Yao S | Fukuoka University | Fundamental and process research on resource recycling properties of polymers |

Conference Information

| | | | |
|-----------------------------|--|---|--|
| Conference Venue | Kanazawa Bunka Hall 3 rd Floor | | |
| Registration Service | Date | Time | Venue |
| | Sunday, June 28 | 17:00-19:00 | Kanazawa New Grand Hotel 5 th Floor |
| | Monday, June 29 | 09:00-18:00 | Kanazawa Bunka Hall 3 rd Floor |
| | Tuesday, June 30 | 09:00-18:00 | |
| | Wednesday, July 1 | 09:00-18:00 | |
| 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, June 28 | |
| | Time | 17:00-19:00 | |
| | Location | Kanazawa New Grand Hotel 5 th Floor | |
| Conference Banquet | Date | Tuesday, June 30 | |
| | Time | 18:30-20:30 | |
| | Location | Kanazawa Castle (Please gather at 18:00 at the entrance of Kanazawa Bunka Hall.) | |
| Lab Tour | 9:00-12:00, Thursday, July 2 (Please gather at 9:00 at the entrance of Kanazawa Bunka 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. |

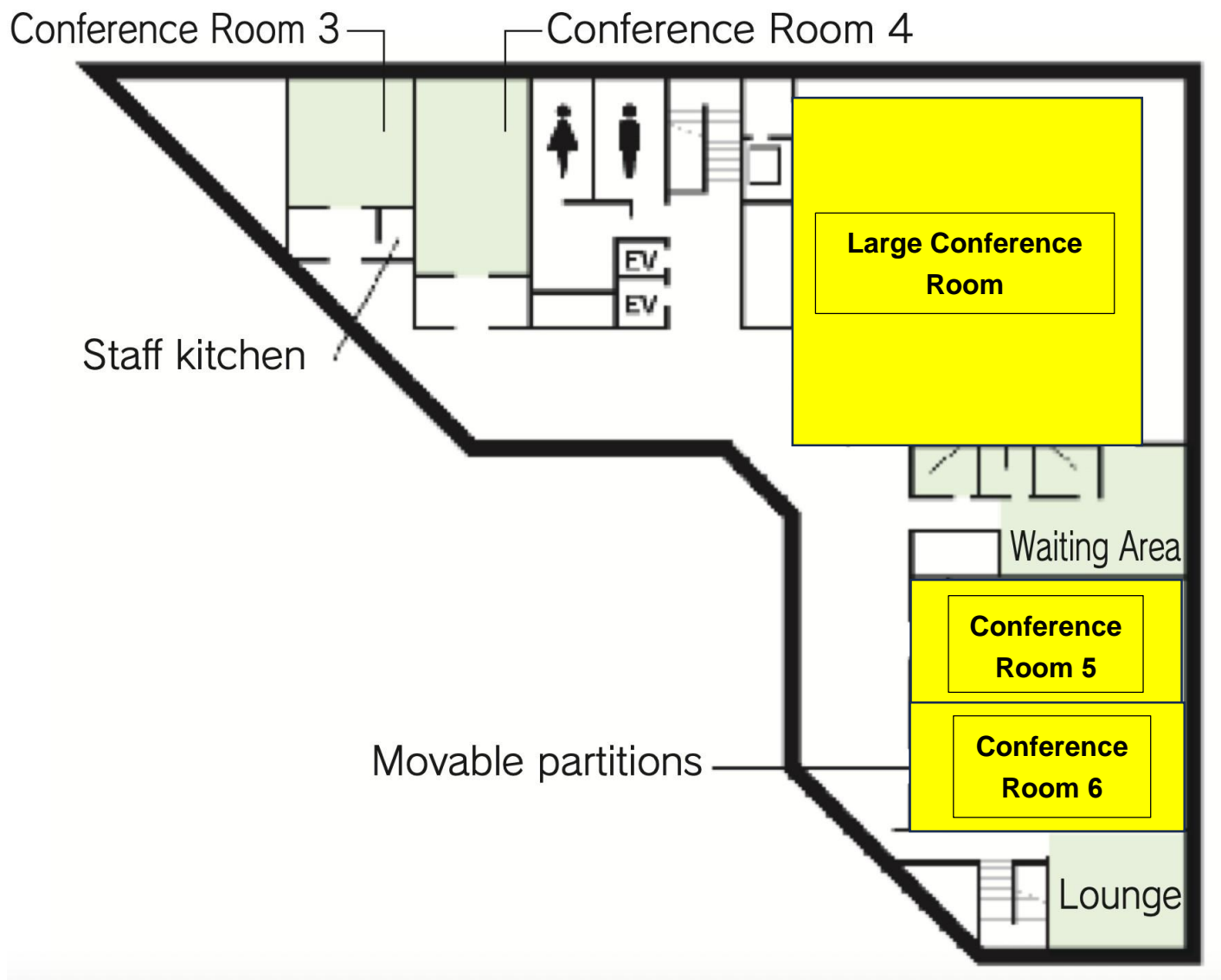
Poster Presentation Schedule

| Session | Date | Time | Schedule |
|---|------------------|-------------|----------------|
| Poster Session 1 (Conference Room 6, Kanazawa Bunka Hall 3 rd Floor) | Monday, June 29 | 16:00-16:20 | Poster Setup |
| | | 16:20-17:20 | Poster Session |
| | | 17:20-18:00 | Poster Removal |
| Poster Session 2 (Conference Room 6, Kanazawa Bunka Hall 3 rd Floor) | Tuesday, June 30 | 16:00-17:00 | Poster Setup |
| | | 17:00-18:00 | Poster Session |
| | | 18:00-18:30 | Poster Removal |

Floor Plan

Kanazawa Bunka Hall

3rd Floor



Program at a Glance

| Sunday, June 28 | | |
|-----------------|--|-------------------|
| Time | Venue | Activity |
| 17:00-19:00 | Kanazawa New Grand Hotel 5 th Floor | Welcome Reception |

| Monday, June 29 | |
|-----------------|---|
| Venue | Large Conference Room |
| 09:00-09:05 | Opening Ceremony Liu SJ, PhD/Chang Gung University Taki K, PhD/Kanazawa University |
| Venue | Large Conference Room |
| 09:05-10:25 | Plenary Talks |
| 10:25-10:35 | Break Time |
| Venue | Large Conference Room |
| 10:35-11:50 | Invited Talks |
| 11:50-13:30 | Lunch Time |
| Venue | Large Conference Room |
| 13:30-14:45 | Invited Talks |
| 14:45-14:55 | Break Time |
| Venue | Large Conference Room / Conference Room 5 |
| 14:55-16:10 | Oral Talks |
| Venue | Conference Room 6 |
| 16:20-17:20 | Poster Session 1 Presentations |

| Tuesday, June 30 | |
|-------------------------|--|
| Venue | Large Conference Room |
| 09:00-10:20 | Plenary Talks |
| 10:20-10:35 | Break Time |
| Venue | Large Conference Room |
| 10:35-11:50 | Invited Talks |
| 11:50-13:30 | Lunch Time |
| Venue | Large Conference Room |
| 13:30-14:45 | Invited Talks |
| 14:45-14:55 | Break Time |
| Venue | Large Conference Room / Conference Room 5 |
| 14:55-16:40 | Oral Talks |
| Venue | Conference Room 6 |
| 17:00-18:00 | Poster Session 2 Presentations |
| Venue | Kanazawa Castle |
| 18:30-20:30 | Banquet |

| Wednesday, July 1 | |
|--------------------------|------------------------------|
| Venue | Large Conference Room |
| 09:00-09:40 | Plenary Talk |
| 09:40-09:55 | Break Time |
| Venue | Large Conference Room |
| 09:55-11:10 | Invited Talks |
| 11:10-11:20 | Break Time |
| Venue | Large Conference Room |
| 11:20-12:10 | Invited Talks |
| 12:10-13:30 | Lunch Time |
| Venue | Large Conference Room |
| 13:30-15:30 | Oral Talks |
| Venue | Large Conference Room |
| 15:30-16:00 | Closing Ceremony |

| Thursday, July 2 | |
|-------------------------|----------------------------|
| Venue | Kanazawa University |
| 9:00-12:00 | Lab Tour |

Sessions

| Monday, June 29 | |
|-----------------|--|
| Venue | Large Conference Room |
| 09:00-09:05 | <p>Opening Ceremony</p> <p>Liu SJ, PhD/Chang Gung University Taki K, PhD/Kanazawa University</p> |
| Venue | Large Conference Room |
| Chair | |
| 09:05-09:45 | <p>#0000 Interactive optimization of resin and process for sustainable and innovative composite manufacturing</p> <p><u>Uzawa, Kiyoshi</u></p> |
| 09:45-10:25 | <p>#0000 How we are saving the world with Plastics</p> <p><u>Holzer, Clemens</u></p> |
| 10:25-10:35 | Break Time |
| Venue | Large Conference Room |
| Chair | |
| 10:35-11:00 | <p>#1123 iPSC-Exosome-Loaded PLGA Nanofiber Accelerate Vascular Repair by Enhancing EGFR/HIF-1α Signaling and Suppressing ROCK1-Mediated Remodeling</p> <p><u>Cheng-Hung Lee</u>, Zi-Yu Chen, Chang-Fang Ying, Yi-Shin Pan</p> |
| 11:00-11:25 | <p>#1064 Control of mechanical performance and analysis of higher-order structure of recycled polypropylene</p> <p><u>Hiroshi Ito</u>, Yasuhiko Otsuki, Yutaka Kobayashi, Syotaro Nishitsuji and Hisao Matsuno</p> |
| 11:25-11:50 | <p>#1086 Unraveling the complex nanostructures of sustainable sugar-based block copolymers</p> <p><u>Hsin-Lung Chen</u>, Ting-Wei Chang, Ling-Chen Kuo, Yu-Hung Cheng, Takuya Isono and Toshifumi Satoh</p> |
| 11:50-13:30 | Lunch Time |

| Monday, June 29 | |
|-----------------|--|
| Venue | Large Conference Room |
| Chair | |
| 13:30-13:55 | #1121 Infusion for simultaneous structure development and dyeing of PET fibers through cold drawing in ethanol <u>Takeshi Kikutani</u> , Rina Khanum, Dong Woo Go, Arun Aneja, Wataru Takarada |
| 13:55-14:20 | #1095 Fundamental and process research on resource recycling properties of polymers <u>Shigeru Yao</u> |
| 14:20-14:45 | #1016 Structure control of immiscible polymer blends through flow-induced crystallization during cooling <u>Masayuki Yamaguchi</u> , Shion Kitabatake |
| 14:45-14:55 | Break Time |
| Venue | Large Conference Room |
| Chair | |
| 14:55-15:10 | #1003 Tunable self-wrinkled polymer films for anti-glare led surfaces via interfacial fuming-induced instability <u>Han-Yu Hsueh</u> |
| 15:10-15:25 | #1004 Toad-skin-inspired Surface: Granules with Buckled Microgrooves for Capillary-induced Liquid Transport <u>Chieh-Yun Juan</u> , Han-Yu Hsueh |
| 15:25-15:40 | #1007 Detecting microplastics and nanoplastics in whole organisms using enhanced darkfield hyperspectral imaging <u>Nathalie Tufenkji</u> , Arav Saherwala, Jun-Ray Macairan and Emma Geoffroy |
| 15:40-15:55 | #1008 Morphology–Surface Coupling in Polymer Blend Systems for Efficient Polymer Photovoltaics Enabled by Self-Assembled Layer <u>Chih Ping Chen</u> |
| 15:55-16:10 | #1010 Impedance-tailored Ni-coated EPS/polyurethane composites for underwater noise mitigation <u>Yu Fang Tsai</u> , Han-Yu Hsueh |

| Monday, June 29 | |
|-----------------|---|
| Venue | Conference Room 5 |
| Chair | |
| 14:55-15:10 | #1016 Investigating the mobility and packing structure of n-type fluoranthene imide-based semiconductor in solution-processed thin film Ting-Yu Wang, <u>Chu-Chen Chueh</u> , Miao Liu, Yen-Han Shih, Zhong'an Li |
| 15:10-15:25 | #1017 Orthogonal staggered alignment of molecular chains in bio-based Aramid whisker <u>Satoshi Okamoto</u> , J. Llandro, K-F Teng, P. Chang, K. Liang |
| 15:25-15:40 | #1030 Encapsulation of algal oil through Inverse gelation of sodium alginate by droplet microfluidics <u>Yi-Je Juang</u> , Tzu-Rong Huang |
| 15:40-15:55 | #1052 Trade-off analysis of fdm process based on response surface methodology <u>Cheng-Jung Yang</u> , Yu-Qing Chen, Cheng-Shiuan Chien |
| 15:55-16:10 | #1027 Characterization of epoxy resin composites reinforced with sugarcane powder and silica sand Chong-Ruei Huang, <u>Fa-Ta Tsai</u> |
| 16:10-16:20 | Break Time |
| Venue | Conference Room 6 |
| 16:20-17:20 | Poster Session 1 Presentations |

| Tuesday, June 30 | |
|------------------|--|
| Venue | Large Conference Room |
| Chair | |
| 09:00-09:40 | #0000 Design strategies to improve thermo-mechanical performance of TPUs <u>Manas-Zloczower, Ica</u> |
| 09:40-10:20 | #1034 Exploring the relationship between earthquakes, polyolefins, and polysilanes <u>Tokumitsu, Katsuhisa</u> |
| 10:20-10:35 | Break Time |
| Venue | Large Conference Room |
| Chair | |
| 10:35-11:00 | #1114 An attempt to observe a critical bubble size in CO₂-dissolved polystyrene film by the Small Angle Light-Scattering and the specially-designed X-ray detector of Time-resolved Small-Angle X-ray Scattering <u>Kentaro Taki, Huang Yi Syun, S.R. Kumar</u> |
| 11:00-11:25 | #1113 Rheological Properties of Polymers and Elastomers Dissolved with High-pressure Fluids <u>Shin-ich Kihara, Gaku Inoue, Yuta Nomura</u> |
| 11:25-11:50 | #1116 Relationship between spinning and drawing conditions on fiber structure/properties of syndiotactic polystyrene fibers <u>Wataru Takarada, S. Ichimiya, Y. Kori, M. Nishio, R. Tomisawa, K. Kim¹, Y. Ohkoshi, T. Kikutani</u> |
| 11:50-13:30 | Lunch Time |
| Venue | Large Conference Room |
| Chair | |
| 13:30-13:55 | #1097 Sulfur-rich polymers from elemental sulfur based reactions <u>Ying-Ling Liu</u> |
| 13:55-14:20 | #1117 Tailoring the structure and functional properties of PLLA/PDLA Stereocomplex films for food packaging applications <u>Yottha Srithep, Dutchanee Pholharn</u> |
| 14:20-14:45 | #1118 Spectroscopic analysis of polymeric materials combined with chemometrics <u>Yusuke Hiejima</u> |

| Tuesday, June 30 | |
|------------------|--|
| 14:45-14:55 | Break Time |
| Venue | Large Conference Room |
| Chair | |
| 14:55-15:10 | #1019 Mechanics-based analytical design and fatigue performance evaluation of plastic living hinges <u>Chung-Chih Lin</u> , Se-Ting Liao |
| 15:10-15:25 | #1036 Perforated macroporous membranes cast through double-sided evaporation of polymer liquid films <u>Shih-Huang Tung</u> , Chia-Jung Kao, Chi-Ling Chan |
| 15:25-15:40 | #1037 Alginate–Biochar Hydrogels as Bio-Based Adsorbents for Resource-Efficient Heavy Metal Removal <u>Vajiheh Vida Akbarzadeh</u> , Ellie Fini |
| 15:40-15:55 | #1040 A study on the evaluation method for DIN abrasion in predicting tire wear performance <u>Lim, Hae Jin</u> , Joo, Yong Tae |
| 15:55-16:10 | #1075 Bioinspired cactus spine-like self-driven microfluidic SERS platform with electrically stimulated bacteria for microbial detection <u>You-Yu Liao</u> , Ting-Yu Liu, Kuan-Xyun Wang |
| 16:10-16:25 | #1066 Restoration of erectile function using a novel implantable biomaterial composite membrane in a prostatectomy rat model <u>Y.N. Wu</u> , J.Y. Huang, K.C. Chen |
| 16:25-16:40 | #1011 Solvent-dependent PVC gel microstructure by rheology <u>Alexandra Chaumonot</u> , Carlos Nieto-Draghi, Mathilde Sibeaud, Isabelle Henaut, Severine Humbert, Halame Haouchette |
| 16:40-16:55 | #1083 Negative electrode kinetics in VRFBs enhanced by electropolymerized MXene/PEDOT:PSS composite on graphite felt <u>Ting-Yu Liu</u> , Kuan-Xyun Wang, Chi-Chieh Huang, YongYi Lo, Yu-Xiang Wang, Yu-Xiang Wang |

| Tuesday, June 30 | |
|------------------|---|
| Venue | Conference Room 5 |
| Chair | |
| 14:55-15:10 | #1041 Composition-dependent tuning of electrospun nanofibers for electret and piezoelectric devices <u>Xihua Ren</u> , Mio Yoshita, Hiroki Miyajima, Satoshi Fujita |
| 15:10-15:25 | #1045 Nanofibrillation of Cellulose Extracted from Soybean Hulls <u>Hui Yun Hwang</u> , Jinhun Kim |
| 15:25-15:40 | #1046 Techniques for controlling the cross-sectional shape of natural fibers to develop eco-friendly pretreatment technologies and stabilize physical properties <u>Hui Yun Hwang</u> , Si Wan Nam, Hyeon Min Jeong |
| 15:40-15:55 | #1050 Engineering high-strength metal–polymer composite using additive manufacturing and recycling for sustainable production <u>Rajesh Kumar Sharma</u> |
| 15:55-16:10 | #1111 Engineering high-strength metal–polymer composite using additive manufacturing and recycling for sustainable production <u>Kentaro Taki</u> , Huang Yi Syun |
| 16:10-16:25 | #1122 Mechanical property enhancement of PHBH via cross-linked PHBH particle incorporation <u>A. Sonoyama</u> , M. Yamaguchi |
| 16:25-16:40 | #1028 Recombinant human thrombomodulin accelerates hair growth by stimulating expression of β-catenin and VEGF in androgenic alopecia mouse model Yu-Ju Chen, Jiun-Yan Ding, Pao-Wen Fan, Srisakul Chaichuum, Dao Thi Quynh Trang, Yu-Chieh Lai, Ya-Yi Xiao, Po-Wei Fu, Hua-Lin Wu, I-Chen Yu, <u>Chien-Chen Lin</u> , Chia-Jung Lee |
| 16:40-16:55 | #1098 Amphiphilic Ag-PEI dendritic polymer nanocapsules for surface-enhanced Raman scattering detection <u>Gong-De Lin</u> , Kuan-Syun Wang, Yu-Xiang Wang, Hsien-Yeh Chen, Ting-Yu Liu |
| Venue | Conference Room 6 |
| 17:00-18:00 | Poster Session 2 Presentations |
| Venue | Kanazawa Castle |
| 18:30-20:30 | Banquet |

| Wednesday, July 1 | |
|-------------------|---|
| Venue | Large Conference Room |
| Chair | |
| 09:00-09:40 | #0000 Implementation of machine learning in polymer extrusion_ <u>Vlachopoulos, John</u> |
| 09:40-09:55 | Break Time |
| Venue | Large Conference Room |
| Chair | |
| 09:55-10:20 | #1094 Gel-Based Ionic Thermoelectric Materials for Waste Heat Harvesting <u>Cheng-Liang Liu</u> , , Ting-Wei Chang, Ling-Chen Kuo, Yu-Hung Cheng, Takuya Isono, Toshifumi Satoh |
| 10:20-10:45 | #0000 Viscoelastic flow simulation of polymer melts in polymer processing <u>Tanoue S</u> |
| 10:45-11:10 | #1013 Polymer additive manufacturing of auxetic metastructures and its applications to 4D printing <u>Keun Park</u> , Minsung Kim |
| 11:10-11:20 | Break Time |
| Venue | Large Conference Room |
| Chair | |
| 11:20-11:45 | #0000 Multi-scale hydrogel patterns for biomedical applications <u>Koh WG</u> |
| 11:45-12:10 | #0000 Efforts on thermal management of construction machinery toward carbon neutrality <u>Saito T</u> |
| 12:10-12:35 | #0000 Mediate intermolecular interaction of CO₂-based copolymer for the miscibility behavior <u>Kuo SW</u> |
| 12:35-13:30 | Lunch Time |

| Wednesday, July 1 | |
|-------------------|---|
| Venue | Large Conference Room |
| Chair | |
| 13:30-13:45 | #1047 Analysis of glass fiber breakage in glass fiber reinforced plastics compounding extruder <u>Hiromu Kobayashi</u> , Hiroshi Ito, Yasuhiko Otsuki, Syotaro Nishitsuji, Hisao Matsuno, Sawa Shusaku |
| 13:45-14:00 | #1051 Evaluation of weatherability and urea permeability of biodegradable polymer for application in coated fertilizer shells <u>Taichi Hojo</u> , Yoshiyuki Suetsugu, Hiroshi Ito |
| 14:00-14:15 | #0000 Crystallization Behavior and Interfacial Structure of PA6/66–Cellulose Composites for FDM Applications <u>Yen-Wei Liu</u> |
| 14:15-14:30 | #1062 Multi-carbonyl frameworks composites for energy storage applications <u>Y.R. Kung</u> , I.H. Yeh |
| 14:30-14:45 | #1070 Enhancing negative electrode kinetics in VRFBs via electropolymerized MXene/PEDOT:PSS composite on graphite felt <u>Ting Yu Liu</u> , Kuan-Xyun Wang, Chi-Chieh Huang, YongYi Lo, Yu-Xiang Wang, Bo-Yu Lin |
| 14:45-15:00 | #1079 Dual-Functional Biochip of Laser-Scribed Graphene Substrates for Electrochemical and SERS Bio-Detection <u>Tsai-Yu Kuan</u> , Ying-Tong Lai, Kuan-Xyun Wang, Cheng Yung-Hsin, Ting-Yu Liu |
| 15:00-15:15 | #1081 Development and application of polymer-based Au@MOF composite solid electrolytes in lithium metal batteries <u>Ting-Yu Liu</u> , Yu-Xiang Wang, Mei-Jun Chen, Kuan-Xyun Wang, Ying-Tong Lai |
| 15:15-15:30 | #1082 Multifunctional Ag-MXene Conductive Polymer Composite Film for Electrochemical and SERS Sensing with Antibacterial Performance <u>Hsiang-Ting Lan</u> , Kuan-Xyun Wang, Ying-Tong Lai, YongYi Lo, Ting-Yu Liu |
| Venue | Large Conference Room |
| 15:30-16:00 | Closing Ceremony |

Poster Session 1

Date: Monday, June 29

Time: 16:20-17:20

Venue: Conference Room 6

Category: G01. Molding and processing

- 001) #1068 **Study on the lightweight, flexural strength and foaming characteristics of fiber-containing foam injection molding parts**
Hsin Shu Peng, Bo-Yu Chen, Hao-Chun Wong, Chun-Yeh Hsiao, An-Sheng Lin, Kai Fu Liew
- 002) #1092 **Assessment of Weldline Strength in Biochar-Reinforced Polylactide Composites**
Tzu-Wei Huang, Bo-Kwei Hung, Yi-Hua Kuo, Shih-Jung Liu, Hiroshi Ito
- 003) #1110 **Effects of Periodic Fluctuations in Feed Rate and Screw Configuration on Head Pressure and Extrudate Output in a Twin-Screw Extruder**
Soma Yamada, Itsuki Yoshikawa, Masatoshi Ohara, Takeshi Sato, Kentaro Taki

Category: G02. Rubber and elastomers

- 004) #1093 **Drug Release from a Nano-Hydroxyapatite-Reinforced Resorbable Nanofibrous Scaffold in In Vitro and In Vivo Models of Female Pelvic Organ Prolapse**
Yi-Pin Chen, Tsia-Shu Lo, Yu-Han Chien, Yi-Hua Kuo, Shih-Jung Liu

Category: G03. Polymerization and synthesis

- 005) #1025 **Synthesis and Electrochemistry of Donor-Acceptor Fused Heteroaromatics from BDTD Diamines reactions**
Asit Patra, Manisha Manisha
- 006) #1049 **Palladium-catalyzed polymerization of bromo-substituted phenylacetylene derivatives**
Malwina Michałków, Mateusz Janeta, Sławomir Szafert
- 007) #1053 **Catalytic copolymerization of alicyclic epoxides with carbon dioxide by binuclear nickel complexes containing benzimidazole-based phenolate ligands**
Bao-Tsan Ko, Pin-An Ko, Guan-Lin Liu
- 008) #1055 **A bifunctional UIO-66 platform enabled by Schiff-base engineering for CO₂ conversion and epoxide–anhydride copolymerization**
Chen-Yen Tsai, Shih-Yun Chou

- 009) #1056 **Using 1,1,3,3-tetramethyl guanidine as a catalyst for polymerization and depolymerization of polyesters and polycarbonate to improve resource usage efficiency**
Hsuan-Ying Chen, R. Kamaraj
- 010) #1061 **Copolymerization of dihydrocoumarin and epoxide catalyzed by novel chromium complexes**
Bao-Tsan Ko, Guan-Lin Liu
- 011) #1091 **Thermoplastic polymalonamide membrane as a sustainable materials platform**
Yu-Xuan Huang, Yu-Xiang Wang, Ying-Chi Huang, Chien-Hsin Wu, Ting-Yu Liu, Ru-Jong Jeng
- 012) #1120 **Molecular simulation–elucidated boronate ester gelation in succinyl chitosan-based hydrogels with triple-staged thermo-responsive sol–gel–sol behavior_**
Chih-Yu Kuo, Wen-Hsin Wang, Po-Chun Chen, Ying-Chieh Hung
- Category: G04. Polymer blends and alloys**
- 013) #1006 **Modification of rheological properties of biodegradable polyesters for enhanced processability via polymer blending**
Masayuki Yamaguchi, Nantinee Tassakarn
- 014) #1048 **Segregation behavior of plasticized poly(vinyl chloride) under temperature gradient**
Masayuki Yamaguchi, Thoa Thi Kim Huynh
- Category: G05. Polymer composites**
- 015) #1021 **A Novel Conductive Polymer Nanocomposite-Based Electrochemical Immunosensor for the Detection of Immunogenic Cell Death Biomarkers**
Yi-An Chen
- 016) #1035 **Enhancement of rigidity and material recyclability of cellulose fiber-reinforced recycled plastics for upcycling**
Hiroki Noguchi, A. Ito, T. Semba, H. Yano
- 017) #1069 **Thermo-responsive polymer nanocomposite modified electrodes for simultaneous electrochemical detection of multiple biomolecules**
JieMao Wang, Nientsen Shih, Rongjyu Sun, Chihlei Lee, Yi-An Chen
- 018) #1076 **Electrochemical biosensor based on temperature-sensitive polymer nanocomposites for simultaneous AA, DA, and UA detection**
JieMao Wang, Yi-An Chen, Rongjyu Sun, Nientsen Shih, Chihlei Lee

Category: G06. Fiber, membrane and film

- 019) #1032 **Relationship between daughter lamellar content and mechanical properties of polypropylene containing hydrogenated oligo(cyclopentadiene)**
Masayuki Yamaguchi, Yuta Fukuda
- 020) #1033 **Electrospun Polyhydroxybutyrate/Nanocellulose Crystals Grafted CoFe₂O₄ Composite Fiber Films For Enhanced Piezoelectric Performance**
Chien Lin Huang, Cheng Yu Cheng, Yu Ya Chiang
- 021) #1042 **Coaxial electrospun polypeptide/polyurethane core shell fibers with tunable mechanical and surface properties for skeletal muscle tissue engineering**
Chun-Yu Chang, Min-Jia Zheng
- 022) #1087 **Structural analysis of polymer membranes formed by thermally induced phase separation (TIPS) using phase-field simulations and X-ray computed tomography**
Kosei Kita, Kenji Yoshimoto, Takeshi Sato, and Kentaro Taki
- 023) #1115 **Molecular orientation and crystallization behavior of polyethylenefuranoate films during stretching process**
Wataru Takarada, Rintaro Ito

Category: G07. Mixing and compounding

- 024) #1063 **Surface compatibility and drying-induced densification of SiC particle systems toward high-density structures**
Ying-Chih Liao, Yi Hua Kao
- 025) #1067 **Rheological analysis and crystallization/annealing behavior of polylactic acid and stereocomplex PLA blended with thermoplastic polyurethane**
JieMao Wang, Hsin Yu Hsu
- 026) #1099 **Improved melt-mixing in single-screw extrusion by geometry modification based on mixing mechanism**
Yasuya Nakayama, Koichi Kimura
- 027) #1101 **Optimization of twin-screw configurations for industrial-scale PET compounding: a simulation study**
Yucheng Cheng, Liao Jie Han, Hsi Hsun Tsai

Category: G08. Modeling and simulation

028) #1001 **Missing data analysis and height direction estimation of aromatic polyimide microparticle size distributions using hierarchical Bayesian approaches**
Takuya Ehiro, Akiko Nakahashi

029) #1031 **Effects of silicone rubber and glycerin material properties on the viscoelastic behavior of a novel artificial dental implant abutment**
Weng-pin Chen, Guan-Yin Li

030) #1109 **Analysis of dynamic characteristics of a slot die coater using computational fluid dynamics (CFD)**
Kentaro Taki, T. Takahashi

Category: G09. Monitoring and characterizatio

031) #1102 **Evaluating Resin Filling State in a Twin-Screw Extruder**
Kentaro Taki, Kotaro Furunishi, Itsuki Yoshikawa, Masatoshi Ohara, Takeshi Sato

032) #1104 **Structural analysis of polymer membranes formed by thermally induced phase separation (TIPS) using phase-field simulations and X-ray computed tomography**
Kenji Yoshimoto, Kosei Kita, Takeshi Sato, and Kentaro Taki

033) #1105 **Process Monitoring of Water-Assisted Devolatilization in a Twin-Screw Extruder using AE**
Kentaro Taki, Rintaro Masaki, Itsuki Yoshikawa, Masatoshi Ohara, Takeshi Sato

034) #1106 **Effect of photocuring conditions and sample thickness on elastic properties in SiC slurry**
Kentaro Taki, Y. Ogihara, T. Sato, K. Yoshimoto

035) #1108 **Statistical characterization of photodecomposition reaction**
Kenji Yoshimoto, Soma Tachibana, Takeshi Sato, Kentaro Taki

Poster Session 2

Date: Tuesday, June 30

Time: 17:00-18:00

Venue: Conference Room 6

Category: G10. Rheology and rheometry

036) #1020 **Flow-Induced Crystallization of Poly(lactic acid) blend with Cellulose Acetate Butyrate**

Ruiqi Feng, Masayuki Yamaguchi

037) #1023 **Enhanced flow-induced crystallization of poly(lactic acid) containing fibrous dispersion**

Rina Ogawa, Dai Hoang Giang Vo, Masayuki Yamaguchi

038) #1059 **Characterizing the drying process of polymer solutions using rheological measurements under normal force control**

Takeshi Sato, K. Ikoma, K. Taki

039) #1060 **Extensional flow characterization of low-viscosity polymer solutions using the dripping-onto-substrate method**

Takeshi Sato, T. Higuchi, K. Taki

040) #1103 **Extensional flow characterization of low-viscosity polymer solutions using the dripping-onto-substrate method**

Takeshi Sato, T. Higuchi, K. Taki

041) #1112 **Characterizing the drying process of polymer solutions using rheological measurements under normal force control**

Takeshi Sato, Kentaro Taki, Kotaro Furunishi, Itsuki Yoshikawa, Masatoshi Ohara

Category: S01. Additive manufacturing

042) #1022 **3D-printed tricalcium phosphate and CaO–MgO–SiO₂ (CMS) glass-ceramics for knee surfacing**

Chi Pin Hsu, Ngi-Chiong Lau, Yi-Sheng Chan, Pin Yi Chen, Che-Hao Yeh, Hsuan-Hung PIN Yeh

Category: S02. Biomedical materials

- 043) #1012 **Enhanced pullout strength for salvaging pedicle screw loosening using a modified cement augmentation technique in porcine vertebrae**
Ching-Lung Tai, Yu-Chen Lee, Demei Lee, Yun-Da Li, Ming-Kai Hsieh
- 044) #1024 **A novel bottom-up tissue engineering via cell-adhesive self-healing hydrogel capable of tissue environment emulation**
Won-Gun Koh, JaeWook Park
- 045) #1038 **Effects of Natural Citrate Ester Plasticizers on PMMA Provisional Restorative Resins**
I-Cheng Chen
- 046) #1043 **Optical sensing inside the eye with a moiré hydrogel-IOL device**
Won Tack Oh, W.G. Koh
- 047) #1044 **Bioorthogonal engineering of self-sustaining macrophage spheroids for durable pro-inflammatory cancer immunotherapy**
Won-Gun Koh, Taehyeon Kim
- 048) #1057 **Enhanced cell adhesion and antibacterial activity of 3D-printed scaffolds via electrospun quaternized gelatin nanofibers**
Kuo-Yu Chen, Wan-Yi Chen, Ching-Yao Chang
- 049) #1077 **UV-curable rapid self-healing PAM/PEI hydrogel for wound dressing applications**
Ying-Chih Liao, Chia Ching Huang, Chijan Fang
- 050) #1088 **Injectable Degradable Poly(ethylene glycol)-block-poly(propylene glycol)-block-poly(ethylene glycol) Hydrogels for Sustained Release of Sodium Tetradecyl Sulfate**
Pin-Chao Feng, Pang-Yun Chou, Zhao-Ding Su, Ulfia Nur Amallia, Shih-Jung Liu, Yen-Wei Liu, Hiroshi Ito
- 051) #1089 **A Versatile Degradable Polymeric Capsule for Sustained Delivery of Bioactive Molecules**
Tzu-Wei Huang, Chih-Yang Lai, Po-Ju Lai, Rifky Rahardian Setiawan, Chao-Tsai Huang, Yi-Hua Kuo, Shih-Jung Liu

Category: S03. Optical/Electrical applications

- 052) #1015 **Highly specific molecularly imprinted polymers synthesized in a deep eutectic solvent for ractopamine electrochemical sensing_**
Yi-Ting Hsieh, Chin-Chun Hsu, Shih-I Lu
- 053) #1054 **PVDF-HFP-Modified Perovskite Solar Cells under Space-Relevant Coupled Vacuum, Light, and Thermal Stress Conditions**
Kun-Mu Lee, Hung Lin Chih, Yean San Long, Min-An Tsai, Harini Srikanth Rao, Wei-Hao Chiu
- 054) #1090 **Enhanced Triboelectric Properties of Graphene-Filled Poly(vinylidene difluoride-co-hexafluoropropylene) (PVDF- HFP) Nanofibers**
Chen-Hung Lee, Wei-Kang Huang, Meng-Fang Lin, Yi-Hua Kuo, Shih-Jung Liu, Hiroshi Ito

Category: S04. Nanotechnologies and nanomaterials

- 055) #1005 **Polymer-engineered interfacial and microstructural modulation in silver selenide thermoelectric films**
Cheng-Lung Chen
- 056) #1009 **Multifunctional nanoemulsions of ulvan and Cinnamomum zeylanicum essential oil: antioxidant, and anti-melanogenic effects**
Chung-Hsiung Huang, Fang-Ling Liu
- 057) #1039 **Cytotoxicity of Nanoparticles-Encapsulated Antrodia camphorata extracts**
Yu-Chen Tsai, H .Miyajim, S.Fujita, MY.Chou
- 058) #1078 **Design and applications of a plasmon–exciton coupling sensing platform utilizing AuNPs–MXene nanosheet hybrid structures**
Yu-Xiang Wang, Hsiang-Ting Lan, YongYi Lo, Chi-Chieh Huang, Kuan-Xyun Wang, Ting-Yu Liu
- 059) #1084 **Flexible SERS substrate based on petal-like 1T-MoS₂/Au heterostructures for real-time monitoring of environmental toxins**
Ting-Yu Liu, Kuan-Xyun Wang, Yu-Xiang Wang, YongYi Lo, Chi-Chieh Huang
- 060) #1100 **Improvement of the electrical conductivity of CNT yarns through CO₂ laser heat treatment**
Wataru Takarada, Hayato Kinosita
- 061) #1119 **Design and characterisation of stable AuNP-POSS hybrid nanomaterials**
Ewa Czechowska, Mateusz Janeta, Sławomir Szafert

Category: S05. Benign polymers

062) #1026 **Sustainable bio-upcycling of biodegradable plastic wastes into polyhydroxyalkanoates**

Beom Soo Kim, Intasit Rawitsara

063) #1029 **Temperature-Dependent Crystal Structure and Higher-Order Crystalline Structure in Novel Long-Chain Aliphatic Polyesters**

Hiroki Takeshita, Miku Yamashita, Katsuhisa Tokumitsu, Takumitsu Kida, Kotohiro Nomura

Category: S04. Nanotechnologies and nanomaterials

064) #1002 **Phloretin enhances anti-HER2 antibody–drug binding to cancer cells as an adjuvant strategy against therapy-resistant HER2-positive breast tumors**

Chen Li-Ching, Yuan Soon Ho

065) #1080 **Application of citric acid-doped carbon quantum dot embedded polymer films for pH-sensitive wound and food monitoring**

YongYi Lo, Kuan-Xyun Wang, Yu-Xiang Wang, Ting-Yu Liu, Hsiang-Ting Lan

Category: S07. Other techniques and applications

066) #1018 **PVDF-HFP polymer additive for highly stable perovskite solar cells under vacuum and gamma-ray conditions**

Kun-Mu Lee, Seoungjun Ahn, Wei-Hao Chiu

067) #1085 **Application of sulfur-doped graphene quantum dots (S-GQDs) modified carbon felt in vanadium redox flow batteries**

Mei-Jun Chen, Mei-Yu Chen, Kuan-Xyun Wang, Ting-Yu Liu