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Welcome Message

Polymer Engineering & Science International (PESI) Conference 2021

Invitation

Dear Colleagues,

On behalf of the Organizing Committee, it is our great pleasure to invite you to participate in the Polymer Engineering and Science International (PESI) 2021, which will be held in May 30 - June 3, 2021 at Kenting, Taiwan. The conference will take place in the Howard Beach Resort-Kenting inside the Kenting National Park. The park is well known for its tropical climate and sunshine, scenic mountain and beach, and has long been one of the most favorite resort places in Taiwan.

PESI-2021 will bring together the international research communities from various scientific disciplines of polymer engineering and science, to discuss new and exciting advances that involve polymeric materials, techniques and methodologies. Apart from the usual conference activities consisting of plenary and invited lectures, general symposia and poster presentation, there will be a series of Special Symposia focusing on up to date topics of polymer-related techniques and applications. Although an intensive science and technology experience is the driving force of PESI-2021 conference, the social and cultural part of a visit to Taiwan should not be missed. The Organizing Committee is putting in its best effort to organize this event and make it a memorable in one of the most attractive regions of Taiwan-Kenting.

We hope that you will be able to join us at the PESI-2021 conference and have a meaningful as well as an enjoyable time with your colleagues in the field of polymer engineering and sciences. All members of the Organizing Committee of PESI-2021 are looking forward to meeting you at the very beautiful town, Kenting of Taiwan.

Yours sincerely,

Shih-Jung (Sean) Liu
Chairman
Chang Gung University, Taiwan

Conference Committee

Chairman Liu SJ (Mechanical Engineering, Chang Gung University)

Secretariats Lee D (Mechanical Engineering, Chang Gung University)

Committee

Chang CY (Mold and Die Engineering, National Kaohsiung University of Sciences and Technology)

Chen JT (Applied Chemistry, National Chiao Tung University)

Chiu FC (Chemical and Materials Engineering, Chang Gung University)

Chung CY (Mechanical Engineering, National Central University)

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Huang CF (Chemical Engineering, National Chung Hsing University)

Huang CT (Chemical and Materials Engineering, Tamkang University)

Huang MS (Mechatronics Engineering, National Kaohsiung University of Science and Technology)

Hwang SJ (Mechanical Engineering, National Cheng Kung University)

Hwang SS (Mechanical Engineering, Chien Hsin University of Science and Technology)

Jeng RJ (Polymer Science and Engineering, National Taiwan University)

Jong WR (Mechanical Engineering, Chung Yuan Christian University)

Kuo CC (Molecular Science and Engineering, National Taipei University of Technology)

Kuo SW (Material and Optoelectronic Science, National Sun Yat-Sen University)

Lai SM (Chemical and Materials Engineering, National Ilan University)

Lee LT (Materials Science and Engineering, Feng Chia University)

Liu CL (Materials Science and Engineering, National Taiwan University)

Liu YL (Chemical Engineering, National Tsing Hua University)

Shih YF (Applied Chemistry, Chaoyang University of Technology)

Tseng SC (Mechanical Engineering, National Yunlin University of Science and Technology)

Tung KL (Chemical Engineering, National Taiwan University)

Wei PK (Research Center for Applied Sciences, Academia Sinica)

Wu CM (Materials Science and Engineering, National Taiwan University of Science and Technology)

Symposia

General symposia

G1. Processing and manufacturing

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. Biomedical materials

S2. Optical/Electrical applications

S3. Nanotechnologies and nanomaterials

S4. Benign polymers

S5. Food engineering and science

S6. Other techniques and applications

Plenary Speakers

Covas JA

University of Minho

A study of the printing stage in 3D printing by free form extrusion

Holzer C

Montanuniversität Leoben

Systematic approach to additive manufacturing of implants

Ho RM

National Tsing Hua University

Well-ordered nanonetwork materials from block copolymer templates for metamaterial applications

Hrymak A

Western University

Electrical conductivity of microinjection molded carbon filled polymer nanocomposites

Ito H

Yamagata University

New concept for mechanical strengthening for polymers prepared and controlled by millefeuille structure and kink deformation

Jana SC

University of Akron

Mesoporous macroporous polymer gels and aerogels and their applications

Invited Speakers

Canevarolo Jr SV	Universidade Federal de São Carlos	Understanding the extrusion process by on-line and in-line rheo-optical techniques
Hong JS	Seoul National University	Design of electrical conductive PLA composite via self-induced particle aggregation
Jeng RJ	National Taiwan University	Thermoplastic polyurethanes prepared from chemical recycling of polycarbonate
Lamnawar K	Institut national des sciences appliquées de Lyon	Interfacial rheology-dynamics-modelling and processing of multi micro-/nanolayered polymeric systems: from fundamental studies to innovative engineering
Masubuchi Y	Nagoya University	Multi-chain slip-link simulations of elongational rheology of polymers
Pantani R	University of Salerno	Description of morphology evolution in injection molding
Saito T	Tokyo Institute of Technology	Study on thermal resistance at the interface of different polymer materials
Srithep Y	Rajaphat Maha Sarakham University	Injection molding and characterization of polylactide stereocomplex and poly (butylene succinate) blends
Taki K	Kanazawa University	Network structure and mechanical properties of UV curable resin for 3D printing
Wang C	National Cheng Kung University	Some interesting morphologies of electrospun fibers caused by flow-induced phase separation
Yao S	Fukuoka University	Upgrade mechanical recycle process based on self-resilience ability of polymer

Conference Information

Conference venue	Howard Beach Resort, Kenting, Taiwan	
Registration service	Sunday, May 30	14:00-17:30
	Monday, May 31	08:00-17:00
	Tuesday, June 1	08:00-17:00
	Wednesday, June 2	08:00-11:30
Conference badge	Please ensure to wear your badge at all times to enter the meeting rooms. There may also be coupons placed in your badge to exchange for additional purchase.	
Welcome reception	Date	Sunday, May 30
	Time	15:00-18:00
	Location	Conference Hall A
Conference Banquet	Date	Tuesday, June 1
	Time	18:30-21:00
	Location	Caesar Park Hotel

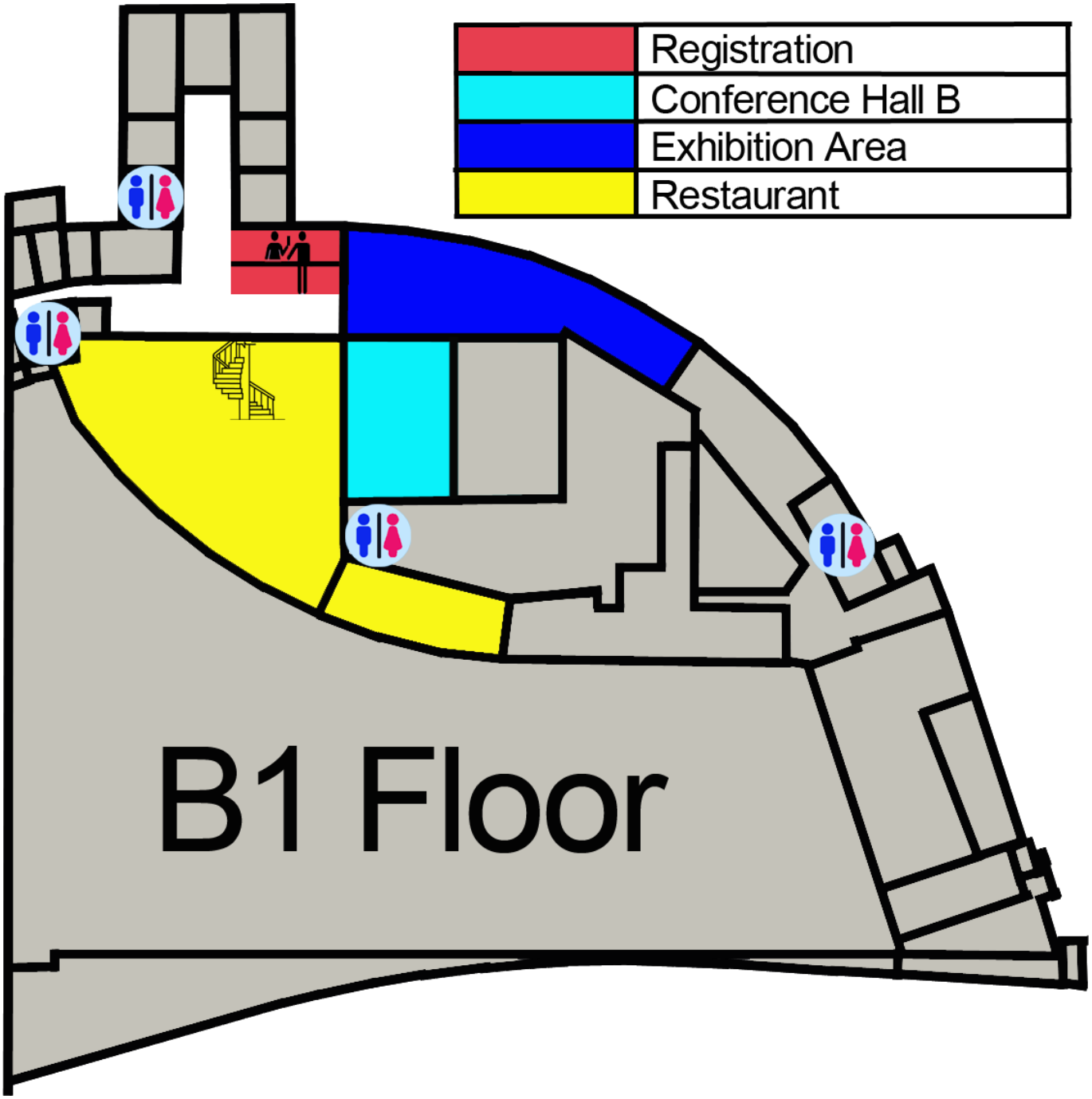
Oral Presentation Schedule

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.	12 min.	3 min.

Poster Presentation Schedule

Date	Schedule	Time
Tuesday, June 1	Poster Setup	08:00-15:30
	Poster Session	15:45-17:45
	Poster Removal	17:45-18:00

Floor Plan


Registration
Conference Hall B
Exhibition Area
Restaurant
B1 Floor

Program at a Glance

Sunday, May 30		
Time	**Venue**	**Activity**
14:00-17:30	B1 Floor	Registration
15:00-18:00	Conference Hall A	Welcome Reception

Monday, May 31	
Venue	**Conference Hall B**
08:20-08:30	**Opening Ceremony**
08:30-09:10	**Properties of polymeric microparts induced by high shear fields in microinjection molding** Andrew N. Hrymak, Musa R. Kamal, Shengtai Zhou, Renze Jiang, Zhongguo Zhao
09:10-09:50	**Well-ordered nanonetwork materials from block copolymer templates for metamaterial applications** Ho R.-M.
09:50-10:15	Invited Presentations
10:15-10:30	**Coffee Break**
Venue	**Conference Hall B**
10:30-10:55	Invited Presentations
10:55-12:10	Oral Presentations
12:10-13:10	**Lunch Time**
Venue	**Conference Hall B**
13:10-13:50	**New concept for mechanical strehgthening for polymers prepared and controlled by millefeuille structure and kink deformation** Y. Watanabe, K. Kano, A. Ishigami, S. Nishitsuji, T. Kurose, and Hiroshi Ito
13:50-14:15	Invited Presentations
14:15-14:55	**A study of the printing stage in 3D printing by fused filament fabrication** S. F. Costa, F.M. Duarte and J.A. Covas
14:55-15:20	Invited Presentations
15:20-15:30	**Coffee Break**
Venue	**Conference Hall B**
15:30-15:55	Invited Presentations
15:55-17:55	Oral Presentations

Tuesday, June 1	
Venue	**Conference Hall B**
08:10-08:50	**Mesoporous macroporous polymer gels and aerogels and their applications** Sadhan C. Jana
08:50-10:05	Invited Presentations
10:05-10:35	Oral Presentations
10:35-10:50	**Coffee Break**
Venue	**Conference Hall B**
10:50-11:15	Invited Presentations
11:15-12:00	Oral Presentations
12:00-13:00	**Lunch Time**
Venue	**Conference Hall B**
13:00-13:50	Invited Presentations
13:50-14:30	**Systematic approach to additive manufacturing of implants** Clemens Holzer
14:30-14:55	Invited Presentations
14:55-15:25	Oral Presentations
15:25-16:30	Poster Session
16:30-16:50	**Closing Ceremony**

Monday, May 31	
Venue	**Conference Hall B**
08:20-08:30	**Opening Ceremony**
Chair	**Liu SJ (Chang Gung University)**
08:30-09:10	**#1024：Properties of polymeric microparts induced by high shear fields in microinjection molding** Andrew N. Hrymak, Musa R. Kamal, Shengtai Zhou, Renze Jiang, Zhongguo Zhao
09:10-09:50	**#1025：Well-ordered nanonetwork materials from block copolymer templates for metamaterial applications** Ho R.-M.
09:50-10:15	**#1023：Thermoplastic polyurethanes prepared from chemical recycling of polycarbonate** Ru-Jong Jeng, Chien-Hsin Wu, Ying-Chi, Huang, Shenghong A. Dai
10:15-10:30	**Coffee Break**
Venue	**Conference Hall B**
Chair	**Shih YF (Chaoyang University of Technology)**
10:30-10:55	**#1045：Multi-chain slip-link simulations of elongational rheology of polymers** Y. Masubuchi
10:55-11:10	**#1041：Synthesis and characterization of the microcellular injection molded PLA/spent coffee grounds composites** S.S. Hwang, H.M. Li, S.C. Ho, Y.C. Kuo
11:10-11:25	**#1103：What can we learn from DFT and molecular dynamics simulations for designing low Dk/Df polymeric materials?** Tzu-Jen Lin
11:25-:11:40	**#1035：The flow-fiber coupling behavior and its effect on the dimensional variation of fiber-reinforced plastics (FRP) injection parts** Cheng-Hong Lai, Chao-Tsai Huang, Jia-Hao Chu, Wei-Wen Fu and, Sheng-Jye Hwang, Hsin-Shu Peng, Chih-Che Wu, and Chun-I Tu
11:40-11:55	**#1111：3D Printing continuous fiber-reinforced composites with thermosetting matrix** Y.-L. Cheng, C. Li, S.-H. Lin, and Y.-T. Guo
11:55-12:10	**#1162：Injection compression molding of nanostructure arrays for multiplex sensing applications** K. L. Lee, S. C. Lo and P. K. Wei
12:10-13:10	**Lunch Time**

Monday, May 31	
Venue	**Conference Hall B**
Chair	**Huang CT (Tamkang University)**
13:10-13:50	**#1184：New concept for mechanical strehgthening for polymers prepared and controlled by millefeuille structure and kink deformation** Y. Watanabe, K. Kano, A. Ishigami, S. Nishitsuji, T. Kurose, and Hiroshi Ito
13:50-14:15	**#1180： Study on thermal resistance at the interface of different polymer materials** T. Saito, T. Taguchi, R. Higuchi and T. Kawaguchi
14:15-14:55	**#1159：A study of the printing stage in 3D printing by fused filament fabrication** S. F. Costa, F.M. Duarte and J.A. Covas
14:55-15:20	**#1189：Interfacial rheology-dynamics-modelling and processing of multi micro-/nanolayered polymeric systems: from fundamental studies to innovative engineering** Khalid Lamnawar
15:20-15:30	**Coffee Break**
Venue	**Conference Hall B**
Chair	**Huang MS (National Kaohsiung University of Science and Technology)**
15:30-15:55	**#1183：Some interesting morphologies of electrospun fibers caused by flow-induced phase separation** Yu Wang, Chi Wang
15:55-16:10	**#1158：Additive manufacturing of metal material with low power diode laser based SLS 3D printer：** Chao Yu-deh, Wang Yi Shuan, Jeng-Ywan Jeng
16:10-16:25	**#1077：Effect of temperature control on interlayer adhesion of FDM 3D printing poly(lactic acid)** W. Prasong, A. Ishigami, S. Thumsorn and H. Ito
16:25-16:40	**#1171：Preparation and characterization of hydrophilic surface with metal oxide nanoparticles/polymer composites** Y. Hanzawa, A. Ishigami, H. Koseko, T. Kurose, H. Ito
16:40-16:55	**#1174：Evaluation of higher-order structure and mechanical properties of cellulose nanofibers reinforced biodegradable polymer composites** T.Ueda, A.Ishigami, T.Kurose, and H.Ito
16:55-17:10	**#1034：Study on the morphology variation of the core material penetration in co-injection fiber reinforced polypropylene system** Kuan-Yu Ko, Chao-Tsai (CT) Huang, Chih-Chung Hsu, You-Sheng Zhou, David Hsu, Rong-Yeu Chang and Shi-Chang Tseng

Monday, May 31	
17:10-17:25	**#1039：Study on the degree of assembly for injected components in a multi-cavity mold system** Tsai-Wen Lin, Chao-Tsai (CT) Huang, Wen-Ren Jong and, Shia-Chung Chen
17:25-17:40	**#1106：Modeling of fiber behavior in a twin-screw extrusion process** Chen, B.C., Chen CH, Chau, SW

Tuesday, June 1	
Venue	**Conference Hall B**
Chair	**Hwang SJ (National Cheng Kung University)**
08:10-08:50	**#1063：Mesoporous macroporous polymer gels and aerogels and their applications** Sadhan C. Jana
08:50-09:15	**#1207：Understanding the extrusion process by in-line rheo-optical techniques** S. V. Canevarolo
09:15-09:40	**#1190：Design of electrical conductive PLA composite via self-induced particle aggregation** Ji Hwan Kim, Joung Sook Hong, Kyung Hyun Ahn
09:40-10:05	**#1182：A numerical simulation of stereolithography process** Kentaro Taki
10:05-10:20	**#1104：Properties and electromagnetic interference shielding effectiveness (EMI SE) of sandwich-structured protective composites** P.W. Hsu, P.Y. Hsu, C.W Lou, J.H Lin, C.H Huang
10:20-10:35	**#1146：Adaptive quality monitoring of injection molding process for materials with different viscosity** Jia-Chen Fan-Jiang, Chi-Wei Su, Sheng-Jye Hwang, Huei-Huang Lee, Hsin-Shu Peng and Hsiao-Yeh Chu
10:35-10:50	**Coffee Break**
Venue	**Conference Hall B**
Chair	**Hwang SS (Chien Hsin University of Science and Technology)**
10:50-11:15	**#1113：Multifunctional needle-bonded nonwoven fabrics with recycled nomex® selvage: manufacturing parameters and property evaluations** P.Y. Hsu, P.W. Hsu, C.W Lou, J.H Lin, C.H Huang
11:15-11:30	**#1032：Magnetic recyclable self-floating solar light-driven $WO_{2.72}/Fe_3O_4$ nanocomposites immobilized by janus membrane for photocatalysis of inorganic and organic pollutants** Kebena Gebeyehu Motora, Chang-Mou Wu and Saba Naseem
11:30-11:45	**#1033：Scalable preparation of ultrathin porous polyurethane membrane based triboelectric nanogenerator for mechanical energy harvesting** Gokana Mohana Rani and Chang-Mou Wu
11:45-12:00	**#1102：Improvement of f-MWCNTs in PAN dialyser membranes: performance and property evaluations** Jian-Hong Lin, Ying-Huei Shih, Jia-Horng Lin, Ching-Wen Lou
12:00-13:00	**Lunch Time**

Tuesday, June 1	
Venue	**Conference Hall B**
Chair	**Lee DM (Chang Gung University)**
13:00-13:25	**#1177：Injection molding and characterization of polylactide stereocomplex and poly(butylene succinate) blends** Y. Srithep and D. Pholharn
13:25-13:50	**#1186：Upgrade mechanical recycle process based on the self-resilience ability of the polymer** Shigeru. Yao
13:50-14:30	**#1061：Systematic approach to additive manufacturing of implants** Clemens Holzer
14:30-14:55	**#1062：Description of morphology evolution in injection molding** R. Pantani
14:55-15:10	**#1072：Electrical properties of MoO_3 thin films deposited by superimposed hipims system with different annealing temperatures** Sheng-Chi Chen, Chun-Hao Chang, Hui Sun, Rong-Zhi Chen
15:10-15:25	**#1073：Joining capability of Al6063 brazed with Al4047 filler metal based on heat treatment parameters** Sheng-Chi Chen, Chung-Hsuan,Yeh, Min-Chen Chuang, Ching-Ming Yang, Tzu-Yang Yeh
15:25-16:30	**Poster Session**
16:30-16:50	**Closing Ceremony**

Poster Session

Tuesday, June 1	
Time:	**15:25-16:30**
Location:	**Exhibition Area**
Category：G5. Polymer composites	
001) #1055	**EMI shielding thin film of conductive polymer and magnetic reduced graphene oxide nanosheets** Chi-Ming Liu, Ting-Yu Liu
002) #1065	**Research on environmentally friendly flame retardant wood plastic composite material** Y.F. Shih, Y. H. Chen, S. Y. Lai, Y. Q. Ke, Z. T. Chen, Y. X. Chen, S. P. Zang, S. C. Wang
003) #1067	**Discussions on non-isothermal crystallization of ternary biodegradable polymer composites in the presence of functional nucleation agent** Cheng-Yu Tsai, Yun-Chi Tung, Hsiang-Yun Tseng, and Li-Ting Lee
004) #1109	**Development of room temperature process for CFRP robot arm using additive manufacturing technology** J.Y. Deng, C.Y. Yu, B.H. Liu, R.C. Luo, Y.L. Cheng
005) #1120	**PBI-GO nano-structured polyelectrolyte for direct methanol fuel cell** Sz-Chieh Huang, Shingjiang Jessie Lue
006) #1128	**Highly sensitive polymer visible photodetector based on citrus pectin through solution processing** Ting-Yin Wang, Ya-Lan Hsu, Hong-Bin Chen and Yu-Chi Chang
007) #1153	**Dielectric properties of metal multilayer/graphene oxide/nano cellulose composite** Hou-Ren Lu, Tsen-Yueh Chu, Chien-Tsung Lai , Chao-Yu Lee
Category：G6. Fiber, membrane and film	
008) #1042	**Biocomposites based on agar and cellulose nanofibers prepared from carrot slag** Y.F. Shin, W.S. Su and Y. H. Chen
009) #1123	**Polysulfone sulfonated graphene nanocomposites for ion exchange membranes of the vanadium redox flow battery** Ming-Yen Chien, Chia-Tzu Hsu, Yun-Chih Chao, Chao-Chi Lai and Ting-Yu Liu
Category：G8. Modeling and simulation	
010) #1141	**Design of advanced sandwich structure for CFRP robot arm using additive manufacturing and finite element analysis** C.Y. Yu, J.Y. Deng, B.H. Liu, R.C. Luo, Y.L. Cheng

Category：S1. Biomedical materials	
011) #1095	**Polymeric microtube-array membrane as a porous scaffold for stem cell encapsulation** T.A.T. Nguyen, A. Czosseck, C.C. Chen and D.J. Lundy
Category：S2. Optical/Electrical applications	
012) #1038	**Oblique-flat-sheet based metamaterial perfect absorber for broad bandwidth and incident angles** Tsung-Yu Huang, Cheng-Yu Lu, Chin-Chien Chung and Jing-Hao Huang
013) #1040	**Design a nano-resonators composed of six concentric rings for subwavelength lasing** Tsung-Yu Huang and Jia-Hsin Bai
014) #1047	**Non-toxic kesterite solar cells by atomic-layer-deposited wide bandgap (Zn,Sn)O buffer layers** Jing-Jie Che, Pei-Chi Liu, Kuei-Hsien Chen, Li-Chyong Chen and Cheng-Ying Chen
015) #1048	**The effect of different annealing conditions on selenium thin-film photovoltaic absorbers** Tzu-Yu Hung, Ting-Wen Lin, Kuei-Hsien Chen, Li-Chyong Chen and Cheng-Ying Chen
016) #1049	**Material characterizations on an earth abundant thin-film photovoltaic material: CBTS** Yu-Lin Zhang, Je-Ming Lin, You-Syuan Ye, Kuei-Hsien Chen, Li-Chyong Chen and Cheng-Ying Chen
017) #1135	**Optimization of annealing parameters for spray-coated perovskite solar cells** Y.C. Huang, C.W. Wu, H.C. Cha
018) #1137	**Lower dark current and high external quantum efficiency for near-infrared organic photodetectors using a new fullerene acceptor** Yu-Ching Huang, Tai-Yung Wang, Zhi-Hao Huang, Zih-Ting Chen, Kun-Mu Lee
Category：S3. Nanotechnologies and nanomaterials	
019) #1028	**Preparation of flexible superamphiphobic film for water energy harvesting** Meng-Hsueh Chuang, Ying-Lin Chen and Meng-Fang Lin
Category：S6. Other techniques and applications	
020) #1051	**Perfromance analysis of CH_4/NH_3 blended fuels applied in a micro gas turbine** C. Cheng, D. Chen, H. Y. Shih, S. R. Yao