

Final Program



10th International Conference on Advanced Materials Development and Performance

Tokushima University, Tokushima, Japan
September 23-25, 2024



Organizer

Tokushima University, Japan

Co-organizers

National Taiwan University of Science and Technology, Taiwan (ROC)

National Korea Maritime and Ocean University, Republic of Korea

Sponsors

Organic/Inorganic Hybrid Material Dispersion Technology Alliance, Taiwan (ROC)

Tokushima Forum on Chemical Engineering (徳島化学工学懇話会)

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Welcome Message

It is a great honor to welcome you to the 10th International Conference on Advanced Materials Development and Performance (AMDP2024) which will take place in Tokushima, Japan, September 23-25, 2024. This conference is part of the triennial series of AMDP meetings with a long tradition, starting in 1997 – Auckland (New Zealand), 1999 – Tokushima (Japan), 2002– Daegu (Republic of Korea), 2005 – Auckland (New Zealand), 2008 – Beijing (China), 2011 – Tokushima (Japan), 2014 – Busan (Republic of Korea), 2017 – Pune (India), 2021 – Dalian (China). This conference was initiated by a network of researchers and engineers from academia and industry in advanced materials.

Materials science and technology have been going through rapid development in the last decades. Nanomaterials and related composites are now beyond the area of the laboratory. These emerging materials are getting more and more important in the industrial aspect due to ease of applicability in diverse application fields by fine tuning of properties. From energy harvesting to sensor technology, and membrane development to high strength fiber-reinforced composites - all fields of materials science have been engulfed with functional nanomaterials and their composites and related technologies.

AMDP2024 will provide a forum to impart new frontiers of knowledge and manifestations in current scientific evidence-based information and technical skills in the field of nanomaterials, advanced composites, and different technologies based on them. We assure you that the presentations will be balanced and exciting and serve your personal learning goals.

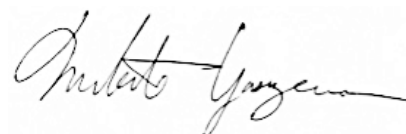
During these three days of the conference, experts from 8 countries will present 7 plenary talks, 28 Invited talks, 47 oral talks, and 72 posters in 26 sessions.

We are confident that with your contribution, whether in a plenary, invited, oral or poster presentations, in discussions, comments or questions, the conference will provide a great forum for exchanging ideas and information on this sector.

This meeting will be held face-to-face for all participants. We are committed to making AMDP2024 a meaningful and memorable conference.

We hope that you will enjoy the conference and find the AMDP2024 Technical Program exciting.

AMDP2024 Conference Chair Prof. Mikito Yasuzawa



Committees

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Mikito Yasuzawa, Tokushima University, Japan

Conference Co-Chair

Yun Hae Kim, Korea Maritime and Ocean University, Republic of Korea

Chang-Mou Wu, National Taiwan University of Sci. and Tech., Taiwan, R. O. C

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Yun Hae Kim, Korea Maritime and Ocean University, Republic of Korea

Chang-Mou Wu, National Taiwan University of Sci. and Tech., Taiwan, R. O. C

Toshihiro Moriga, Tokushima University, Japan

Daisuke Yonekura, Tokushima University, Japan

Keh-Moh Lin, Southern Taiwan University of Sci. and Tech., Taiwan, R. O. C.

Ri-ichi Murakami, Chengdu University, China

Pankaj Koinkar, Tokushima University, Japan

Cheong Kuan Yew, Universiti Sains Malaysia, Malaysia

Nandu Chaure, Savitribai Phule Pune University, India

Geoffrey Waterhouse, University of Auckland, New Zealand

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Akihiro Furube (Japan)

An-Ya Lo (Taiwan, R. O. C)

Atsushi Tabata (Japan)

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Chih-Chia Cheng (Taiwan, R. O. C)

Chih-Wei Chiu (Taiwan, R. O. C)

Chih-Yu Chang (Taiwan, R. O. C)

Chikanori Hashimoto (Japan)

Chin-Lung Chiang (Taiwan, R. O. C)

Do-Hoon Shin (Republic of Korea)

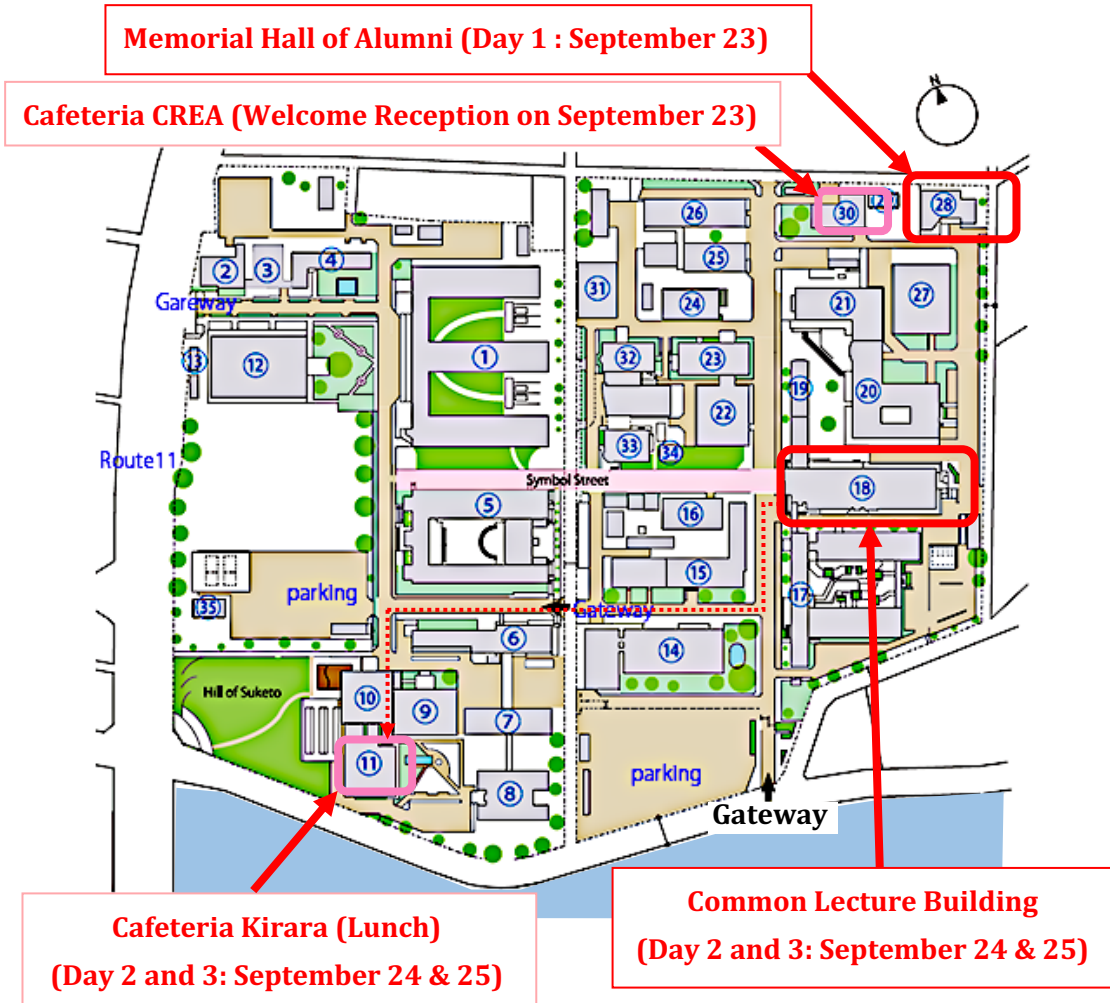
Fumitoshi Yagishita (Japan)	Sharmila Chaudhari (India)
Hitoshi Mizuguchi (Japan)	Sheng-Chang Wang (Taiwan, R. O. C)
Ho Hong Quyen (Vietnam)	Shin-ichiro Yanagiya (Japan)
Hsu-Chiang Kuan (Taiwan, R. O. C)	Shu-Mei Chang (Taiwan, R. O. C)
J. L. Kuo (Taiwan, R. O. C)	Soo-Jeong Park (Republic of Korea)
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Jin-Woo Lee (Republic of Korea)	Sung-Yeol Bae (Republic of Korea)
Jong-Do Kim (Republic of Korea)	Sushma Giripunje (India)
Jitendra Mahajan (India)	Tae-Gyu Kim (Republic of Korea)
Katsuya Sato (Japan)	Taka-aki Yano (Japan)
Kevena G. Motora (Taiwan, R. O. C)	Takeshi Watanabe (Japan)
Kei-ichiro Murai (Japan)	Tao-Hsing Chen (Taiwan, R. O. C)
Ken Yoshida (Japan)	Tetsuro Katayama (Japan)
Masaki Goto (Japan)	Tomohiro Hirano (Japan)
Masao Nagase (Japan)	Tomoki Yabutani (Japan)
Masamichi Ogasawara (Japan)	Toshihide Horikawa (Japan)
Masashi Ishikawa (Japan)	Vineet Rai (India)
Masatsugu Oishi (Japan)	Wei-Jen Chen (Taiwan, R. O. C)
Meng-Lin Tsai (Taiwan, R. O. C)	Wen-Cheng Ke (Taiwan, R. O. C)
Meng-Yi Bai (Taiwan, R. O. C)	Yasuhide Ohno (Japan)
Ming-Yuan Shen (Taiwan, R. O. C)	Yee-wen Yen (Taiwan, R. O. C)
Mohit Sood (Taiwan, R. O. C)	Yoshinobu Shimamura (Japan)
Munehiro Inukai (Japan)	Yow-Ling Shiue (Taiwan, R. O. C)
Naoki Noguchi (Japan)	Yu Jen Hsiao (Taiwan, R. O. C)
Pangpang Wang (Japan)	Yu-Sheng Lin (Taiwan, R. O. C)
Santosh Mahapatra (India)	Yukihiro Arakawa (Japan)
Se-Yoon Kim (Republic of Korea)	Yusuke Fuchiwaki (Japan)
Shang-Nan Tsai (Taiwan, R. O. C)	Yuusuke Takashima (Japan)

Local Committee

M. Katoh	H. Mizuguchi	M. Ogasawara	Y. Yamada
P. Koinkar	T. Moriga	M. Oishi	M. Yasuzawa
M. Kurashina	K. Murai	Y. Suzuki	D. Yonekura
K. Kusaka	A. N. Nakagaito	F. Yagishita	T. Watanabe

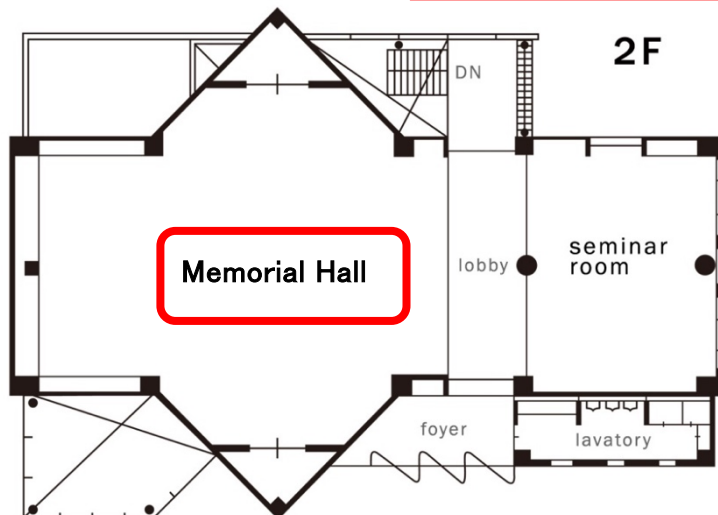
Maps

Josanjima Campus Map



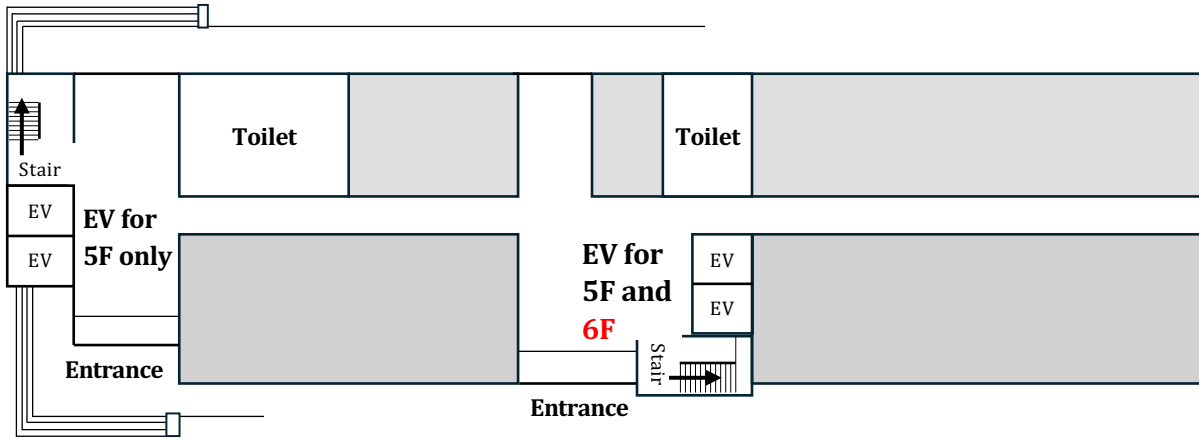
Memorial Hall of Alumni (September 23)

Registration 1F : September 23

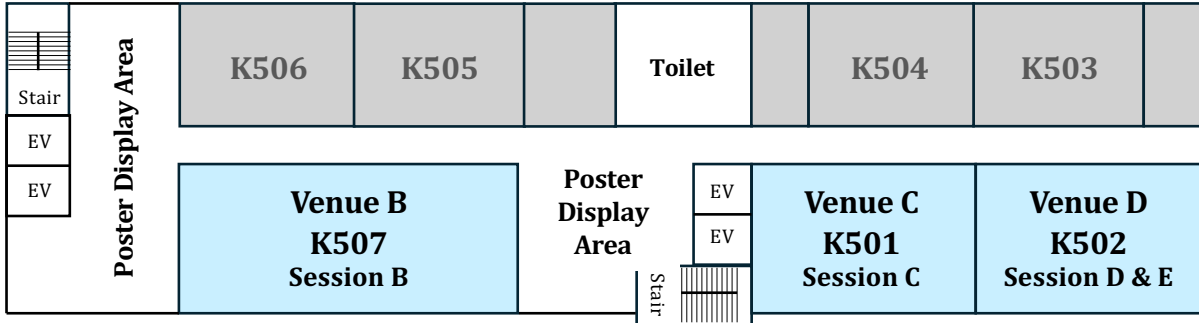


Floor Map

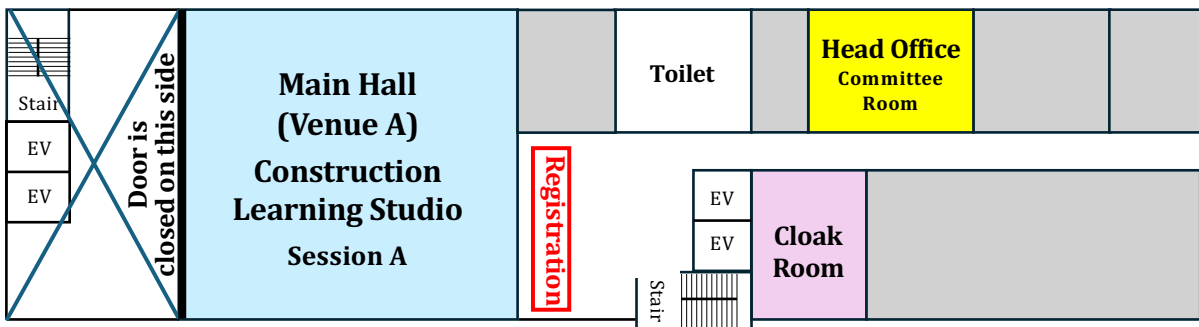
1F



5F



6F



Presentation Guidelines

Oral Presentation Guidelines

There will be four types of oral presentations: **Plenary Lecture, Invited talk, and Oral talk.** **Please use your own PC with HDMI port for presentation.**

Duration of presentation

Oral Presentation	Time Duration
Plenary Lecture	40 min (34 min talk + 5 min Q&A + 1 min switch)
Invited Talk	30 min (24 min talk + 5 min Q&A + 1 min switch)
Oral Talk	15 min (12 min talk + 2 min Q&A + 1 min switch)

1. Kindly finish your talk in time and keep 2 or 5 minutes for questions and answers.
2. If time permits, the session chair will ask the audience for questions to the speaker.
3. Please try to maintain the time limit, otherwise the session chair will have to interrupt and ask you to end your presentation in time.

As a speaker, please check the following:

1. Before starting the session

Prepare your ppt file in advance to ensure that the content of your presentation is ready.
Join the appropriate session where you will deliver your talk.

2. During the session

Confirm the time of the presentation before the start of your presentation.

Poster Presentation Guidelines

Poster Presentation Session

Please make your poster to fit on a poster board 940mm (width) x 1760mm (height). A0 size with 841mm (width) x 1180mm (height) or A0 size with 914mm (width) x 1292mm (height) are recommended.

Posters must be in place by 12:30 of September 24th, 2024. Poster sessions will be held from 13:00 to 14:30.

The venue for poster presentations is the common space on the 5th floor of The Common Lecture Building, Faculty of Science and Technology, Josanjima Campus, Tokushima University.

The location of the building is shown at

<https://www.tokushima-u.ac.jp/english/campusmap/#josanjima>

, which is numbered as #18 in the map.

Core time is allocated for poster presentations.

Core time for posters with odd numbers are from 13:00 to 13:45 (Poster Session A), and for posters with even numbers, from 13:45 to 14:30 (Poster Session B).

Poster presenters are requested to be in front of their posters during the core time.

Program at a Glance

Day 1 (September 23, 2024) Monday (Memorial Hall of Alumni 2F)		
Time	Activity	Place
14:00-14:40	Plenary Lecture PL01	Memorial Hall (Memorial Hall of Alumni 2F)
14:40-17:05	Session X	Memorial Hall (Memorial Hall of Alumni 2F)
18:00-19:00	Welcome Reception	Cafeteria CREA
Day 2 (September 24, 2024) Tuesday (Common Learning Building 5F and 6F)		
08:30-16:00	Registration	6F Common Space
09:00-09:30	Opening Ceremony	Main Hall & Venue A (6F)
09:30-10:50	Plenary Lectures PL02 and PL03	Main Hall & Venue A (6F)
11:00-12:15	Parallel Session A, B, C and D&E	Main Hall & Venue A (6F), Venues B, C, D (5F)
12:15-13:00	Lunch Break	Cafeteria Kirara
13:00-13:45	Poster Session A	5F Common space
13:45-14:30	Poster Session B	5F Common space
14:40-15:20	Plenary Lectures PL04	Main Hall & Venue A (6F)
15:30-17:15	Parallel Session A, B, C and D&E	Main Hall & Venue A (6F), Venues B, C, D (5F)
18:30-20:30	Banquet	JR Hotel Clement Tokushima
Day 3 (September 25, 2024) Wednesday (Common Learning Building 5F and 6F)		
08:30-13:00	Registration	6F Common Space
09:00-10:20	Plenary Lectures PL05 and PL06	Main Hall & Venue A (6F)
10:30-12:15	Parallel Session A, B, C and D&E	Main Hall & Venue A (6F), Venues B, C, D (5F)
12:15-13:00	Lunch Break	Cafeteria Kirara
13:00-13:40	Plenary Lectures PL07	Main Hall & Venue A (6F)
13:50-15:35	Parallel Session A, B, C and D&E	Main Hall & Venue A (6F), Venues B, C, D (5F)
15:35-16:10	Closing Ceremony	Main Hall & Venue A (6F)

Daily Program

Day 1 (September 23)

Plenary Lecture 1				
Memorial Hall (Memorial Hall of Alumni 2F)			Session Chair: Yun Hae Kim and Pankaj Koinkar	
No.	Type	Time	Title	Presenter
PL01	Plenary Lecture 1	14:00~14:40	A Novel combined approach to produce highly crystalline and compact thin films for solar cells	Nandu Bhanudas Chaure
Session X: Advanced Composites and Materials for Civil, Eco-Friendly and Mechanical Engineering Functional Materials and Technology				
Memorial Hall (Memorial Hall of Alumni 2F)			Session Chair: Pankaj Koinkar and Masamichi Ogasawara	
IX10	Invited Talk	14:40~15:10	Evaluations of Joule Heat Effect on Wire Electrode Discharge Machining of SiC/Al MMC: Machined Surface Defect	Chun Liang Kuo
IX11	Invited Talk	15:10~15:40	Indirect Tool Wear Prediction of Profiling Processes Using Machine Learning Algorithms and Sensor Fusion	Chunhui Chung
Tea break 15:40~15:50				
IX12	Invited Talk	15:50~16:20	Singlet Oxygen Mediated Photodegradation of Organic Compounds in Water Sensitized by Metallophthalocyanine/Nanosheet Hybrids	Takuya Fujimura
IX13	Invited Talk	16:20~16:50	Transport phenomena in complex systems elucidated using molecular dynamics simulations and bimolecular reaction theory	Kento Kasahara
OX14	Oral	16:50~17:05	Diastereoselective Supramolecular Formation with Planar Chiral Pillar[5]arenes in Solid State	Kiichi Yasuzawa
18:00~19:30		Welcome Reception at Cafeteria CREA		

Day 2 (September 24)

09:00-09:30	Opening Ceremony	at Main Hall (Common Lecture Bldg. 6F)
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Plenary Lecture 2 and 3				
Main Hall (Common Lecture Bldg. 6F)			Session Chair: Mikito Yasuzawa and Chang Mou Wu	
PL02	Plenary Lecture 2	09:30~10:10	Nanostructure Arrays Using Semiconductor-based Sputter Deposition and Photolithography: Fabrication and Application	Jinn P. Chu
PL03	Plenary Lecture 3	10:10~10:50	Optimizing Mechanical Performance of Thermoplastic and Thermoset Composites: Impact of Geometry, Temperature, Moisture, and Nano tube Reinforcement	Yun Hae Kim
Session A: Advanced Composites and Materials for Civil, Eco-Friendly and Mechanical Engineering				
Venue A (Main Hall) (Common Lecture Bldg. 6F)			Session Chair: Hsu-Chiang Kuan and Takeshi Watanabe	
IA20	Invited Talk	11:00~11:30	Improvement in thermal conductivity of epoxy composite by loading with β -Si ₃ N ₄ filler	Akihiro Shimamura
OA21	Oral	11:30~11:45	Recyclability and Mechanical Properties of Short Fiber Reinforced Modified-Epoxy	Shang-Nan Tsai
OA22	Oral	11:45~12:00	Enhancing Adhesive Performance of CF/Epoxy Composites with Toughened Epoxy and Nano particles	Tae-Sun Bang
OA23	Oral	12:00~12:15	AI-based Optimization of Ceramic Fiber Reinforced Polymer Composite Design for UAM Doors	Jaewan Choi
Session B: Advanced Nanomaterials, Nanotechnology and Applications				
Venue B K507 (Common Lecture Bldg. 5F)			Session Chair: Sushama Milind Giripunje and Yoshihisa Suzuki	
IB20	Invited Talk	11:00~11:30	GaN-based light-emitting diodes grown on the graphene interlayer/patterned sapphire substrate	Wen Cheng Ke
OB21	Oral	11:30~11:45	Fabrication of silicon nanoparticles using laser annealing for highly sensitive fluorescence sensing	Tatsuya Fukuta
OB22	Oral	11:45~12:00	Light Emitting Dysprosium Doped Gadolinium Zirconate (GdZr ₂ O ₇ :Dy ³⁺) Electrospun Nanofibers for Flexible Display Application	Sanchita Sanjiv Kasturwar
OB23	Oral	12:00~12:15	High-entropy Prussian blue analogues derived metal phosphidation for electrocatalytic hydrogen evolution reaction in alkaline media	Yu-Ru Liu
Session C: Advanced Energy Materials and Technology				
Venue C K501 (Common Lecture Bldg. 5F)			Session Chair: Ken Yoshida and Kei-ichiro Murai	
IC20	Invited Talk	11:00~11:30	Charge-Discharge Reaction Analysis and Electrode Material Optimization of Lithium Sulfur Battery with Sulfolane based Electrolyte by <i>in-situ</i> EIS Method	Hikari Watanabe

OC21	Oral	11:30~11:45	Effect of electrolyte concentration on the electrochemical performance of LiFePO ₄ /graphene composite	Diganta Kuar
OC22	Oral	11:45~12:00	Evaluation of Air Electrode Properties of Perovskite-type Mn Oxides Doped with Ag for Solid Oxide Fuel Cells	Kounosuke Mitsushio
OC23	Oral	12:00~12:15	Evaluation of Deteriorated Gaskets Through Full-Scale Watertightness Testing	Masayuki Tsukagoshi
Session D: Functional Materials and Technology Session E: Biomaterials and Biosensors				
Venue D K502 (Common Lecture Bldg. 5F)			Session Chair: Hitoshi Mizuguchi and Mohit Sood	
IE20	Invited Talk	11:00~11:30	Design and Fabrication of Microfluidic Immunoassay Chips through Integrated Inkjet Printing and Laser Modification	Yusuke Fuchiwaki
OE21	Oral	11:30~11:45	Preparation and properties of MAO/ZrO ₂ -Y ₂ O ₃ composite film on zirconium hydride surface	Zhan-Lin Li
OE22	Oral	11:45~12:00	Mo ₂ TiAlC ₂ Saturable Absorber for Nanosecond Pulse Fiber Laser Generation at 1.55-micron Region	Muhammad Aizat Zaim Zaini
OE23	Oral	12:00~12:15	Controlling of the colloidal suspension droplet size using the T-junction microfluidic device for preparing monodisperse photonic ball	Taiki Maekawa
Poster Presentations A (Odd number 13:00~13:45) Poster Presentations B (Even number 13:45~14:30)				
Poster Session 5F Common Space (Common Lecture Bldg. 5F)				
Plenary Lecture 4				
Main Hall (Common Lecture Bldg. 6F)			Session Chair: Toshihiro Moriga and Geoffrey I. N. Waterhouse	
PL04	Plenary Lecture 4	14:40~15:20	Designing morphology and chemical composition of bioceramic materials	Shao Ju Shih
Session A: Advanced Composites and Materials for Civil, Eco-Friendly and Mechanical Engineering				
Venue A (Main Hall) (Common Lecture Bldg. 6F)			Session Chair: Akihiro Shimamura and Shang-Nan Tsai	
IA24	Invited Talk	15:30~16:00	Mechanical properties of surface-bounded lattice under the seeding effect of strut lattice	Mohit Sood
OA25	Oral	16:00~16:15	Near Zero Poisson's Ratio in a Surface-based 3D Printed Perforated Structure	Muhammad Irfan Fareed
OA26	Oral	16:15~16:30	Optimizing Adhesion Performance of CF/PEKK Composites: The Role of the Modified Nanoparticles PEI Films	Kang-Min Kim
OA27	Oral	16:30~16:45	The Microstructure and Electrical Property of M-doped NbN Thin Films	Ying Chieh Lee
OA28	Oral	16:45~17:00	Preparation and characterization of biobased halogen-free flame retardant thermoplastic polyurethane composite materials corresponding with circular economy and net-zero trends	Hsu-Chiang Kuan
OA29	Oral	17:00~17:15	Preparation and characterization of eco-friendly flame retardant thermoplastic polyurethane composites based on bio-based Chitosan	Chen-Feng Kuan

Session B: Advanced Nanomaterials, Nanotechnology and Applications

Venue B K507 (Common Lecture Bldg. 5F)

Session Chair: Wen Cheng Ke and Yoshinobu Shimamura

IB24	Invited Talk	15:30~16:00	Development of efficient triboelectric nanogenerators for green and waste energy harvesting, and their practical applications in charging of electronic devices	Chang-Mou Wu
IB25	Invited Talk	16:00~16:30	Numerical Assessment of Laser Annealing Effects on Optoelectronic Performance of Sputter-Prepared ITO/Ag/ITO Electrodes	Keh-Moh Lin
IB26	Invited Talk	16:30~17:00	Facile Synthesis of NiCoP2O7 Nanofibers as a Promising Pseudocapacitive Material Towards High-Performance Electrochemical Capacitors	Sushama Milind Giripunje
OB27	Oral	17:00~17:15	Graphene-controlled metallic nanostructures for surface-enhanced Raman spectroscopy	Shinnosuke Ozeki

Session C: Advanced Energy Materials and Technology

Venue C K501 (Common Lecture Bldg. 5F)

Session Chair: Masashi Kurashina and Pangpang Wang

IC24	Invited Talk	15:30~16:00	Enhancing Supercapacitor Performance: Strategies for Modifying 2D Materials and Their Nanocomposites	Santosh Kumar Mahapatra
IC25	Invited Talk	16:00~16:30	A CB-PWM technique for five-phase three-level voltage source inverter	Bhimrao Sitaram Umre
OC26	Oral	16:30~16:45	Optimizing Electrochemical Performance of 1D Copper Pyrophosphate in Various Aqueous Electrolytes for Asymmetric Supercapacitors	Nutan Vasanta Mangate
OC27	Oral	16:45~17:00	Intelligent Wearable Self-Powered Sensing Technology Enabled by Efficient and Stable Flexible Triboelectric Nanogenerators	Chih-Yu Chang
OC28	Oral	17:00~17:15	Influence of pore structure on the penetration efficiency of surface impregnating agents in concrete	Ayuka Morita

Session D: Functional Materials and Technology

Session E: Biomaterials and Biosensors

Venue D K502 (Common Lecture Bldg. 5F)

Session Chair: Meng-Yi Bai and Sangeeta Gopichandra Itankar

IE24	Invited Talk	15:30~16:00	Track-etched Membrane Electrode Systems: Development, Applications, and Advancements in Electrochemical Detection and Sensing	Hitoshi Mizuguchi
IE25	Invited Talk	16:00~16:30	Studies for beneficial functions of melanin pigments and melanogenesis through free radical reactions	Mika Tada
OE26	Oral	16:30~16:45	Increasing graphene selectivity for H ₂ O ₂ electro-production using phosphorus-doped carbon nitride quantum dots as self-anti-biofouling dissolved oxygen sensor	Kung-Hsing Chen
OE27	Oral	16:45~17:00	Effect of anodic oxidation on corrosion resistance of AZ31 magnesium alloy	Yu-Xin Kang
OE28	Oral	17:00~17:15	A Study of Moisture Resistance Improvement in CFRP for High Temperature and Humid Environment	Woo-Hyuk Son

18:30~20:30

Banquet at JR Hotel Clement Tokushima

Day 3 (September 25)

Plenary Lecture 5 and 6				
Main Hall (Common Lecture Bldg. 6F)			Session Chair: Meng-Yi Bai and Pankaj Koinkar	
PL05	Plenary Lecture 5	09:00~09:40	Femtosecond Charge Transfer Dynamics at the Interface of Plasmonic Metals and Semiconductor Nanostructures: Advancing Photocatalysis under Visible Light	Akihiro Furube
PL06	Plenary Lecture 6	09:40~10:20	Development of Sustainable Bio-Organic Based Resistive Switching Memory	Kuan Yew Cheong
Session A: Advanced Composites and Materials for Civil, Eco-Friendly and Mechanical Engineering				
Venue A (Main Hall) (Common Lecture Bldg. 6F)			Session Chair: Kazuya Kusaka and Chen-Feng Kuan	
IA30	Invited Talk	10:30~11:00	Strategies to mold all-cellulose plates based on nanofibers extracted from residual fruit parenchyma tissue	Antonio Norio Nakagaito
OA31	Oral	11:00~11:15	Evaluation of Mechanical Property and Environmental Resistance in Repaired srPET Composites	Se-Yoon Kim
OA32	Oral	11:15~11:30	Residual Stress Estimation of C/C Composite by X-ray Diffraction	Kota Tsukahara
OA33	Oral	11:30~11:45	Novel WS ₂ /MoO ₃ /Au Hybrid Composites for Cutting-Edge Environmental and Energy Applications	Akash Vishwanath Sawate
OA34	Oral	11:45~12:00	Interfacial Reactions in the Liquid/Solid Lead-free Solders/Cu-Ni-Si-Mg Alloy (C7025) Couples	Ting Chen
OA35	Oral	12:00~12:15	Study on solar light driven gold doped black TiO ₂ @BiOCl nanocomposites for photodegradation of organic pollutants	Yasuyuki Maeda
Session B: Advanced Nanomaterials, Nanotechnology and Applications				
Venue B K507 (Common Lecture Bldg. 5F)			Session Chair: Harutoshi Asakawa and Yoshihisa Suzuki	
IB30	Invited Talk	10:30~11:00	Halide Perovskite/Cellulose Nanocrystal Papers for High Stability Optoelectronic Applications	Meng-Lin Tsai
IB31	Invited Talk	11:00~11:30	Characterization of the electronic and mechanical properties of two-dimensional sheet of metal nanoparticles using scanning probe microscopy	Pangpang Wang
OB32	Oral	11:30~11:45	Exploring the UV Luminescent Properties of Y ₃ Al ₅ O ₁₂ : Gd ³⁺ Electrospun Nanofibers	Khushbu Ashokkumar Rathi
OB33	Oral	11:45~12:00	Effect of Substrate Temperature on the Crystallinity and Surface Topography Properties of Aluminum Nitride (AlN) Thin Films Deposited by RF Magnetron Sputtering	Angel Lou Dagala Liwagong
OB34	Oral	12:00~12:15	Handling-Free and Room Temperature Synchrotron X-ray Analyses of Glucose Isomerase Crystals Grown from Precipitant-Free Solutions by Using Polyimide Tubes	Yoshihisa Suzuki

Session C: Advanced Energy Materials and Technology

Venue C K501 (Common Lecture Bldg. 5F)

Session Chair: Santosh Kumar Mahapatra and Masatsugu Oishi

IC30	Invited Talk	10:30~11:00	Thermophysical properties of semiclathrate hydrates for heat storage and gas capture	Sanehiro Muromachi
OC31	Oral	11:00~11:15	Synthesis of proton conductors	Toshihiro Moriga
OC32	Oral	11:15~11:30	Crystal structure and persistent luminescence properties of garnet-type $\text{Ca}_{3-x}\text{Ta}_{1.5}\text{Ga}_{3.5}\text{O}_{12}:\text{xPr}^{3+}$ phosphor	Tomoya Onoe
OC34	Oral	11:45~12:00	NiCoP@P-Doped g- C_3N_4 Nanocomposites for Hydrogen Evolution Reaction in Alkaline Electrolyte	Sheng-Chang Wang

Session D: Functional Materials and Technology

Session E: Biomaterials and Biosensors

Venue D K502 (Common Lecture Bldg. 5F)

Session Chair: Yusuke Fuchiwaki and Shu-Mei Chang

IE30	Invited Talk	10:30~11:00	Dual repurposing drugs loaded in chemical-modified inulin as an oral administration drug carrier for liver cancer combination therapy	Meng-Yi Bai
IE31	Invited Talk	11:00~11:30	Development of Nano-Biopolymer Nanocomposites for Enhanced Biomedical Applications and Environmental Remediation	Atul Kulkarni
OE32	Oral	11:30~11:45	Iron carbonyl polymer microspheres for simultaneously high-speed adsorption and desorption of dye-emulsified micelles with frequency manipulation under an alternating electric field	Jem-Kun Chen
OE33	Oral	11:45~12:00	Investigation of Biodegradable and Piezoelectric Properties of Chitosan Fibers by Electrospinning	Cheng-Tang Pan
OE34	Oral	12:00~12:15	Plasmon-Mediated Chemical Reaction: Formation of Amide bonds in the Vicinity of Metallic Nanoparticles	Balaji Sanap

Plenary Lecture 7

Main Hall (Common Lecture Bldg. 6F)

Session Chair: Toshihiro Moriga and Nandu Chaure

PL07	Plenary Lecture 7	13:00~13:40	Designing Metal Single Atom Catalysts for Tomorrow's Energy Sector	Geoffrey I. N. Waterhouse
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Session A: Advanced Composites and Materials for Civil, Eco-Friendly and Mechanical Engineering

Venue A (Common Lecture Bldg. 6F)

Session Chair: Antonio Norio Nakagaito and Chikanori Hashimoto

OA36	Oral	13:50~14:05	Properties of Low Cement Type Concrete with Ground Granulated Blast Furnace Slag and Lithium Nitrite	Yuji Yamada
OA37	Oral	14:05~14:20	Influence of Pore Structure Transformation Induced by Cement Addition on Drying Shrinkage Properties of Fly Ash-Based Geopolymer	Horhok Lim
OA38	Oral	14:20~14:35	Effect of Cover and Surface Crack Width on Water Movement along Reinforcing Steel in Concrete	Ryo Takeshita
OA39	Oral	14:35~14:50	A Simple Test Method and Calculation from Accelerated Neutralization Test Results for Evaluating CO_2 Fixation in Concrete Structures	Yuta Nomura

Session B: Advanced Nanomaterials, Nanotechnology and Applications

Venue B K507 (Common Lecture Bldg. 5F) Session Chair: Meng-Lin Tsai, Yoshihisa Suzuki and Harutoshi Asakawa

IB34	Invited Talk	13:50~14:20	Surface Melting of Organic Crystals Unlocked by In-Situ Observation	Harutoshi Asakawa
IB36	Invited Talk	14:20~14:50	Development of highly efficient solar light active bismuth oxyhalides based nanocomposites for photocatalytic treatment of organic pollutants	Kebena Gebeyehu Motora
IB37	Invited Talk	14:50~15:20	Observation of Fracture Portions of Carbon Nanotubes Fragmented by Ultrasonication	Yoshinobu Shimamura

Session C: Advanced Energy Materials and Technology

Venue C K501 (Common Lecture Bldg. 5F) Session Chair: Sanehiro Muromachi and Naoki Noguchi

IC35	Invited Talk	13:50~14:20	The Significance of Cage Occupancy on C-H Stretching Vibrations of Methane in Structure H Clathrate Hydrate using Ab Initio Molecular Dynamics Simulations	Ken Yoshida
OC36	Oral	14:20~14:35	Synthesis And Photoluminescent Study Of PAN/Eu ³⁺ And PEO/Eu ³⁺ Electrospun Nanofibers In Smart textile Applications	Sangeeta Gopichandra Itankar
OC37	Oral	14:35~14:50	Formation of WO ₃ / MoS ₂ / rGO nanocomposite prepared by integration of pulse laser ablation and hydrothermal method to enhance optical and photocatalytic activity	Niloy Paul

Session D: Functional Materials and Technology

Session E: Biomaterials and Biosensors

Venue D K502 (Common Lecture Bldg. 5F) Session Chair: Taka-aki Yano and Atul Kulkarni

IE35	Invited Talk	13:50~14:20	High Specific Glucagon Assay System Using the Peptides Sensor Derived from Receptor Sequence	Hajime Shigeto
IE36	Invited Talk	14:20~14:50	Investigation of the adhesion of liquid phase exfoliated graphene to surface modified substrates	Masashi Kurashina
OE37	Oral	14:50~15:05	The Study of High Solid Content Waterborne Polyurethane Ink for Direct-ink-writing 3D printing	Shu-Mei Chang
OE38	Oral	15:05~15:20	The Study of Waterborne Polyurethane as a Fluoride-Free Water-Repellent Agent for Cotton Textile	Kai-Yen Chin

15:35-16:10

Closing Ceremony

at Main Hall (Common Lecture Bldg. 6F)

Poster Presentation List

Poster Session A (Odd number 13:00~13:45, September 24)		
Poster Session B (Even number 13:45~14:30, September 24)		
No.	Title	Presenter
PA01	Improvement of Fretting Fatigue Life of Ti ₆ Al ₄ V with Cr/CrN Multilayer Coatings by Increasing Layers	Ryosuke Ohnishi
PA02	Grain Refinement of Industrial Pure Iron by Electron Beam Alloying with Ti and Nb	Keigo Sasaki
PA03	In-situ Thermal Stress Measurement of W/Cu Composite by Neutron Diffraction using Time-of-Flight Method in High Temperature Cycling	Masayuki Nishida
PA04	Effect of Zn Content on Bonding Strength of Sn-Zn Solder to Glass Plate Prepared by Ultrasonic Assisted Soldering Method	Daisuke Yonekura
PA05	Study on the Preparation of an Eco-Friendly Effective Flame Retardant with Modified Tea Saponin to Enhance Thermal Stability of Epoxy	Chin-lung Chiang
PA06	Classification of Copper-based Old Coins Using X-ray Diffraction and the Influence of Inclusions	Reo Nakagawa
PA07	In-situ residual stress measurement in mechanically loaded multilayer thin films	Tomoya Sato
PA08	Residual Stress Change in Aluminum Alloy Material by FSW Joining with Mechanical Loadin	Rui Murakami
PA09	Evaluating Structural Safety of Composite Radar Masts for Ships under Various 6-DOF Loads	Sungwon Yoon
PA10	Study on the synergy effects of inorganic flame retardants, expanded graphite, and phase change materials to improve flame retardancy of epoxy resin	So Youn Mun
PA11	Development of low energy consumption MEMS semiconductor gas sensing modules	Yu-Jen Hsiao
PA12	Effect of Zn Content on the Bond Strength of Bi-Zn Solder to Glass	Koushi Hayashi
PA13	A Study on Optimization Design of Boom Structures in UAM Aircraft	Jihun Seok
PA14	Weaving Characteristics and Impacting Properties of Sandwich Composites Utilizing a 3D Honeycomb Preform as the Core Layer	Jieng-Chiang Chen

PA15	Characteristics and Mechanical Properties of Regenerated Carbon Fiber Reinforced Thermoplastic Composite	Ming-Yuan Shen
PA16	Effect of Projected Particle Shape on Erosion Properties of Cr/CrN Multilayer Coating	Takumi Maruo
PA17	X-ray Stress Measurement of Polyphenylene Sulfide (PPS)	Yuzuki Kanaji
PA18	Study on the properties of halogen-free flame retardant polybutylene succinate composites prepared using spent coffee grounds	Chane-Yuan Yang
PA19	X-ray elastic constant measurement of chromium nitride film deposited by arc ion plating method on aluminum alloy substrate	Kazuya Kusaka
PA20	Study on fresh concrete flowing through the deformed pipe by a concrete pump and fresh concrete mixing in bi-axial forced-mixing type mixer with help of visualization technique	Chikanori Hashimoto
PA21	Research on the possible replacement of bulletproof materials using basalt composites	Wooseung Noh
PA22	Classification and Exploration of Bismuth Iron Garnet Compounds by Machine Learning	Huan-Chia Chang
PA23	Application of Paper-Based Systems for Lung Cancer Detection	Yu-Sheng Lin
PB24	Active control of surface plasmon resonances using uniaxially-stretched graphene substrates	Chihiro Yamano
PB25	Surface-enhanced Raman spectroscopy using optically-resonant silicon nanoparticles	Daiki Hanano
PB26	One-step Hydrothermal Synthesis of Manganese Molybdate@Cobalt Tungstate Nanosheets Hybrid as Advanced Materials for Supercapacitor Applications	Chelliah Koventhan
PB27	Fabrication of Nanobullet structure composed of gold nanoparticle and titanium dioxide	Akihiro Yamamoto
PB28	CO ₂ photoreduction efficiency of surface modified V ₂ O ₅ nanostructures under UV irradiation	Chih-Chiang Wang
PB29	Carbon Dioxide Reduction using Copper Hydroxide Nanosheet Modified Electrode	Yuzuki Tomisaka
PB30	Improved reproducibility of glucose oxidation of copper hydroxide nanosheet-modified electrode with polyurethane coatings	Kaito Nishimura
PB31	Photocatalytic evaluation of SnS quantum dots made by Surfactant-assisted hydrothermal method	Youhei Ohira
PB32	Anisotropy of Step Velocities of Monoclinic Lysozyme Crystals Induced by Anisotropy of the Properties of Kink Sites	Satoshi Doto

PB33	All-Atom MD Analysis of Crystal-Growth Control of Glycine with Additive	Takuma Matsuda
PB34	High Stretchability and Conductive Stability of Flexible Hybrid Electronic Materials and Their Application in Smart Clothing for ECG and EMG Monitoring	Jia Wun Li
PC35	Evaluation of Electrochemical Properties of B-site Mixed Brownmillerite-type Oxide $\text{Ca}_2\text{Fe}_2\text{O}_5$ as Cathode for SOFC	Hiroki Takemura
PC36	A universal multifunctional cation doping strategy towards stabilized high nickel cobalt-free lithium layered oxide cathode	Yi Hao
PC37	Optimizing Macroporous Photocatalysts for Carbon Dioxide Reduction through Pore Size Control	An-Ya Lo
PC38	Evaluation of Li-rich layered oxide $0.5\text{Li}_2\text{MnO}_3 \cdot 0.5\text{LiNi}_{0.5}\text{Mn}_{0.5}\text{O}_2$ by pair distribution function analysis	Raku Hamamoto
PC39	Developing an Electroluminescence Image Recognition System for Monocrystalline Silicon Solar Modules Using YOLO and GAN Technologies	Ya-Xiu Liang
PC40	Piezoelectric Property Enhancement of rGO /PVDF Nanofiber Films for Human Body Movement Monitoring	Jian Xun Chen
PC41	Preparing a Dense Pd Membrane via the Vacuum-Assisted Plating of Spherical Silica Particles onto a Porous SUS Tube	Masahiro Katoh
PC42	CANCELLED	
PC43	<i>In situ</i> measurement of pressure-induced amorphization of ice Ih and tetrahydrofuran hydrate by Raman and infrared spectroscopy	Haruki Fujii
PC44	High-pressure Synthesis of Chalcogen/platinum Group Metal-doped Black Phosphorous and Investigation of Local Structure by EXAFS	Naoki Noguchi
PC45	Engine Performance Optimization for UTeM Bus Using Hydrogen Enrichment- System	Abdinor Gas
PC46	An Over Modulated PWM Strategy with Minimum Voltage Distortion for Five Phase Open End Winding Induction Motor Drive	Lavudya Charan
PC47	Comparative Design and optimization of three phase 6/4, 12/8 and four phase 8/6 Switched Reluctance Motors for Automotive Applications	Lata-Sushil Dufare
PC48	Study of a GaN HEMT Based Single-Phase Inverter Used for Lithium-ion Battery Energy Storage Systems	Xiangfan Qiu
PE49	Dissolution state of a fluorescent probe in a lipid bilayer evaluated through enhanced sampling molecular dynamics simulation	Ryo Okabe
PE50	Analysis of phenolic compounds in beverages by HPLC equipped with a multi-anode cathode pair detection system	Yusuke Kita

PE51	A visible sensing device for selenium (IV) using a microcolumn packed with β -cyclodextrin modified octadecyl silica	Yohei Yamada
PE52	Volumetric Study on Cholesterol-Containing Binary Bilayer Membrane of Dimyristoylphosphatidylcholine	Nobutake Tamai
PE53	Dopamine monitoring in a mouse brain using a microdialysis-integrated HPLC equipped with a track-etched membrane double-electrode detector	Yuka Torii
PE54	An Attempt to Evaluate Detailed Structural Properties of Phospholipid Vesicles by Static and Dynamic Scattering	Nono Kiriama
PE55	Determination of glucose in fruit juice beverages using N-GQD/NiWO ₄ - supported track-etched membrane electrode system	Sayaka Tani
PE56	Synthesizing composite materials using zwitterionic polymers and tricalcium phosphate	Hisui Shimahara
PE57	Introducing Biocompatibility into Polypropylene Implant Devices Using 2-(Methacryloyloxy)ethyl Choline Hydrogen Phosphate Copolymers	Yumeng Zhao
PE58	The in vitro evaluations of photo-curing 2-(methacryloyloxy)ethyl hydrogen choline phosphate bio-printing scaffold	YuanChih Tsai
PE59	Preparation of zwitterionic polymer brush surface using optical ATRP method and its inhibitory effect on protein adsorption	Kiichi Nakano
PE60	Synthesis and characterization of conductive polyamide 6/spandex/polyaniline elastic fabrics	Cheng-Ho Chen
PE61	The Mechanical Property and Fracture Analysis of Fe-based Bulk Metallic Glasses Alloy with Different Elements addition	Tao-Hsing Chen
PE62	Synthesis and Properties of Biodegradable Polyurethane Based on Poly (L-Lactic Acid)	Chun-Chun Huang
PE63	Enhancing the Electromechanical Performance of PNN-PT Piezoelectric Ceramics through Domain Engineering	Jianning Liu
PE64	Analysis of Precision Processing Characteristics according to Heat Source for Ship Piping Process	Chang Wook Park
PE65	Investigation of Insulating Film Formation Method for Fabrication of Pt Nanoelectrodes for Intracellular Measurement	Takanari Kido
PE66	Glucose Oxidation Using Electrode Modified with Nickel Hydroxide Nanosheets	Akihiro Matsuyama
PE67	Synthesis of copper hydroxide nanosheet-conjugated Au@Pt nanoparticles for electrode modification	Zheng-Wei Qiu
PE68	Dewatering of cellulose nanofiber with a cloud point extraction using 1-dodecanol and production of acryl resin composites by a high-share kneading	Tomoki Yabutani

PE69	Synthesis of Boron Complexes Based on <i>N,N</i> -Type Bidentate Imidazopyridine Ligands and Evaluation Their Photophysical Properties	Itsuki Ogawa
PE70	Evaluation of the Corrosion Inhibition Effect of Film-Forming Amines on Iron Surfaces	Minori Takasugi
PE71	Formation Process and Structure of Protective Film on Copper from Dilute Aqueous Solutions of Aliphatic Amine Corrosion Inhibitors	Rika Shibahara
PE72	The effect of pH on boron removal using Amberlite IRA 743 resin	Quyên-Hồng Hồ
PE73	Synthesis of insoluble beads of glycosylated chitosan nanofibers for boron adsorption	Yuta Ishii