

ICCMME

2026 the 11th International Conference on Composite Materials and Material Engineering

ICSMA

2026 the 9th International Conference on Smart Materials Applications

Tokyo, Japan
January 28-30, 2026

Conference Venue



東京理科大学
TOKYO UNIVERSITY OF SCIENCE

Morito Memorial Hall 森戸記念館



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CONFERENCE COMMITTEES

Conference Committee Chairs

Kazuo Umemura, Tokyo University of Science, Japan

Jong Hak Kim, Yonsei University, South Korea

Xiaohong Zhu, Sichuan University, China

Program Committee Chairs

Jung Tae Park, Yonsei University, South Korea

Teik-Cheng Lim, Singapore University of Social Sciences, Singapore

Seok-Keun Koh, C&G Hitech Co., Ltd, South Korea

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ZURUZI Abu Samah, Alfaisal University, Kingdom of Saudi Arabia

Sutanu Samanta, North Eastern Regional Institute of Science and Technology (NERIST), India

Kowit Piyamongkala, King Mongkut's University of Technology North Bangkok, Thailand

Punnama Siriphannon, King Mongkut's Institute of Technology Ladkrabang, Thailand

Bashir Ahmmad Arima, Yamagata University, Japan

Il Jeon, Sungkyunkwan university advanced institute of Nano Technology (SAINT), South Korea

Sergey Inozemtcev, National Research Moscow State University of Civil Engineering, Russia

Tomáš Homola, Masaryk University, Czech Republic

Norie Allafi Akeel, Sohar University, Sultanate of Oman

Peng Hao Wang, Purdue University, USA

Seongpil An, Sungkyunkwan university advanced institute of Nano Technology (SAINT), South Korea

Ratchadaporn Puntharod, Maejo University, Thailand

Nabam Teyi, North Eastern Regional Institute of Science and Technology (NERIST), India

Prashanth J., NIT Silchar, India

Nattakan Soykeabkaew, Mae Fah Luang University, Thailand

Suchart Chantaramanee, Rajamangala, University of Technology Srivijaya, Thailand

Kunasundari Balakrishnan, Universiti Malaysia Perlis, Malaysia

Juhyeong Lee, Utah State University, USA

Kungang Zhang, Northwestern University, USA

Olga Kulitckaya, University of Münster, Germany



CONFERENCE VENUE

Morito Memorial Hall

森戸記念館

Tokyo University of Science, Kagurazaka Campus

Address: 4-2-2 Kagurazaka, Shinjuku-ku, Tokyo

東京都新宿区神楽坂 4-2-2

<https://www.tus.ac.jp/en/campus/kagurazaka.html>



The Kagurazaka campus is located in the heart of Tokyo, making it convenient for commuting students but also providing easy access to the institutions and facilities students need to support their learning and research. The campus features a concentration of educational and research facilities and the rich university experiences available only to students in an urban setting.

In addition, this downtown campus offers opportunities to experience the connections between academics and the community, with sophisticated professional educational opportunities; collaboration among government, business, and academic organizations; and enhanced support functions for startup companies.

Note: The organizer doesn't provide free accommodation nor booking service. We suggest you to make early reservation!



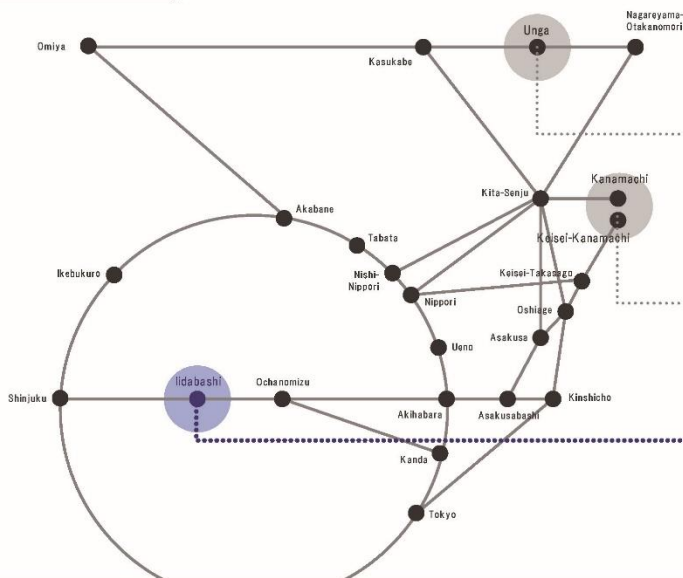



Tokyo University of Science Kagurazaka Campus

1-3 Kagurazaka, Shinjuku-ku, Tokyo 162-8601


Located 3 minutes' walk from Iidabashi Station, accessible via the JR Sobu Line, the Tokyo Metro Yurakucho, Tozai and Namboku Lines, and the Oedo Line.

ACCESS MAP






Noda Campus
26-41 Yamazaki, Noda-shi,
Chiba Prefecture 278-8510



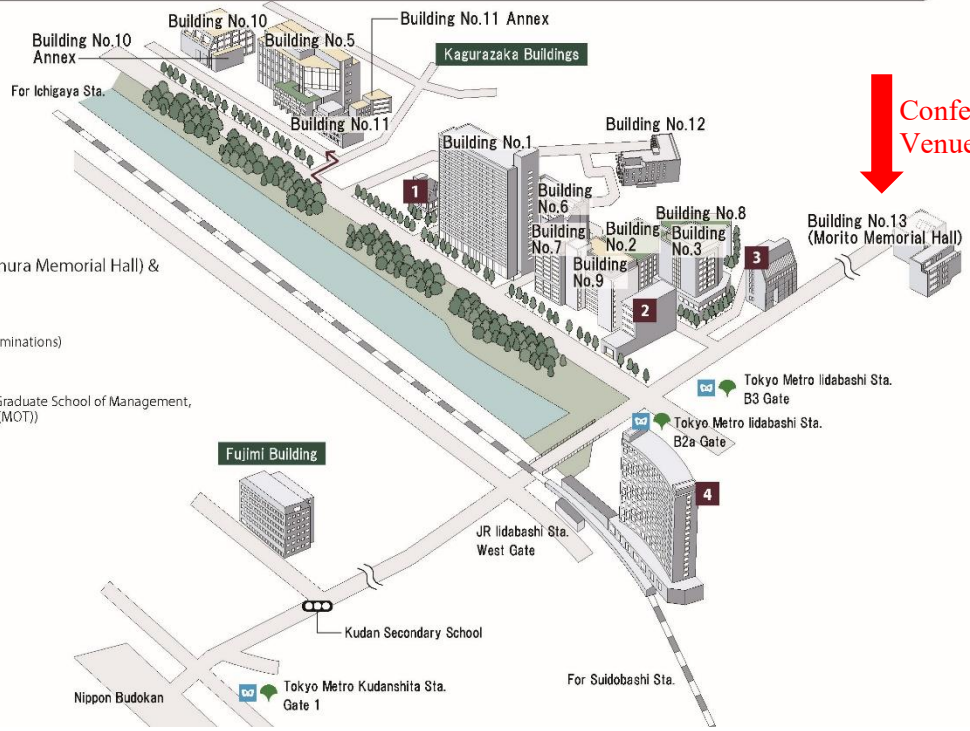
Katsushika Campus
6-3-1 Nijuku, Katsushika-ku,
Tokyo 125-8585



Kagurazaka Campus
1-3 Kagurazaka, Shinjuku-ku,
Tokyo 162-8601

- **From Narita Airport**
Take the JR Narita Express train to Tokyo Station. Transfer to the JR Yamanote Line / Keihin-Tohoku Line and take it to Akihabara Station. Transfer to the JR Sobu Line and take it to Iidabashi Station. Travel time: about 1 hour 30 minutes.
- **From Haneda Airport**
Take the Tokyo Monorail Line to Hamamatsuchō Station. Transfer to the JR Yamanote Line / Keihin-Tohoku Line and take it to Akihabara Station. Transfer to the JR Sobu Line and take it to Iidabashi Station. Travel time: about 45 minutes.
- **From Tokyo Station**
Take the JR Chuo Line to Ochanomizu Station. Transfer to the JR Sobu Line and take it to Iidabashi Station. Travel time: about 10 minutes.
- **From Shinjuku Station**
Take the JR Sobu Line to Iidabashi Station. Travel time: about 12 minutes.

CAMPUS MAP



- 1** The Museum of Science, TUS (Futamura Memorial Hall) & Mathematical Experience Plaza
- 2** Futaba Building
(First floor: Center for University Entrance Examinations)
- 3** PORTA Kagurazaka 4th & 5th floors
(Graduate School of Innovation Studies and Graduate School of Management, Department of Management of Technology (MOT))
- 4** CENTRAL PLAZA 2nd floor
(TUS Open College)

↓
Conference
Venue



GENERAL INFORMATION

Oral Presentation

1. Timing: a maximum of 15 minutes total, including speaking time and discussion. Please make sure your presentation is well timed. Please keep in mind that the program is full and that the speaker after you would like their allocated time available to them.
2. You can use USB flash drive (memory stick), make sure you scanned viruses in your own computer. Each speaker is required to meet her/his session chair in the corresponding session rooms 10 minutes before the session starts and copy the slide file(PPT or PDF) to the computer.
3. It is suggested that you email a copy of your presentation to your personal inbox as a backup. If for some reason the files can't be accessed from your flash drive, you will be able to download them to the computer from your email.
4. Please note that each session room will be equipped with a LCD projector, screen, point device, microphone, and a laptop with general presentation software such as Microsoft PowerPoint and Adobe Reader. Please make sure that your files are compatible and readable with our operation system by using commonly used fonts and symbols. We do not recommend using your own computer due to potential technical issues.
5. Videos: If your PowerPoint files contain video clips please make sure that they are well formatted and connected to the main files.

Poster Presentation

- Bring your high-resolution printed poster with you to the meeting (size must not exceed A1 [594mm×841mm]).
- Set up your printed poster one hour before your session start time on the day you are scheduled to present.
- Presenters must remove their printed posters immediately after the poster session.

Conference Photos

Scan the QR code to get conference photos



Accommodation

The conference organizer doesn't provide free accommodation or room reservation service. Participants should book rooms by themselves.

Safety Reminder: Secure Valuable Items at All Times

We remind you to secure your personal belongings at all times.

Please remember to:

- * Wear your Conference Identification Badge at all times. Do not throw away Badge.
- * If you are using a laptop computer, do not leave it unattended at any time.
- * Keep your purse, wallet and other valuables with you at all times.
- * The conference organizer will not be responsible for the loss or damage to any personal belongings.



SCHEDULE AT A GLANCE

January 28, 2026 Wednesday Meeting Room 2, 2F, Morito Memorial Hall			
13:00-17:00	Participants Registration & Conference Kits Collection		
January 29, 2026 Thursday Morito Memorial Hall			Room
09:45-09:50	Opening Remarks	Prof. Kazuo Umemura , Tokyo University of Science, Japan	The First Forum, B1F
09:50-10:30	Keynote Speech	“Copolymer Design Strategies for High-Performance Ion-Conducting Polymer Membranes” Prof. Jong Hak Kim , Yonsei University, South Korea	
10:30-11:00	Group Photo & Coffee Break		
11:00-11:30	Invited Speech	“Innovative and Sustainable Materials for the Selective Adsorption of Rare Earths” Prof. Domenico Pirozzi , University Federico II, Italy	The First Forum, B1F
11:30-12:00	Invited Speech	“Enhanced Surface Stability of Garnet-Type Solid-State Electrolyte via Atomic Layer Deposition” Assoc. Prof. Chih-Chieh Wang , National Sun Yat-sen University, Taiwan	
12:00-13:30	Lunch Box @ Meeting Rooms, 2F, Morito Memorial Hall		
13:30-15:15	Session 1	Natural Fiber Reinforced Composites: Design and Performance	The First Forum, B1F
	Session 2	Biobased and Sustainable Polymer Composite Materials	Meeting Room 1, 2F
	Session 3	Biomedical Materials and Drug Delivery Systems	Meeting Room 2, 2F
	Session 4	Green Materials and Technologies for Environmental Remediation	Meeting Room 3, 2F
15:15-15:30	Coffee Break		
15:30-17:15	Session 5	Advanced Functional Materials for Sensing and Photonics	The First Forum, B1F
	Session 6	Microstructure and Property Tailoring via Advanced Manufacturing	Meeting Room 1, 2F
	Session 7	Materials and Structural Response to Extreme Environments	Meeting Room 2, 2F
16:00-17:10	Poster Session	Advanced Materials and Devices for Emerging Technologies	Meeting Room 3, 2F
18:00-19:00	Dinner Banquet @ Dining Cafe BELTEMPO, Hotel Metropolitan Edmont Tokyo		



January 30, 2026 Friday Morito Memorial Hall			Room
10:00-12:00	Session 8	Multiscale Mechanical Modeling and Damage Behavior of Composites	The Second Forum, 1F
	Session 9	Advanced Materials and Multiphysics Devices for Sustainable Energy	Meeting Room 1, 2F
	Session 10	Intelligent Design and Green Sustainable Materials	Meeting Room 2, 2F
12:00-13:00	Lunch Box @ Meeting Rooms, 2F, Morito Memorial Hall		
13:00-14:00	Tokyo University of Science Lab Tour Gathering Point @ Morito Memorial Hall		

■ Conference Rooms

Please check the venue of your session and go to the corresponding room before your session starts.

Date	Activity	Level	Meeting Room
Jan. 29 th , 2026	Opening Ceremony, Keynote & Invited Speech	B1F	The First Forum
Jan. 29 th , 2026	Session 1, 5	B1F	The First Forum
Jan. 29 th , 2026	Session 2, 6	2F	Meeting Room 1
Jan. 29 th , 2026	Session 3, 7	2F	Meeting Room 2
Jan. 29 th , 2026	Session 4, Poster Session	2F	Meeting Room 3
Jan. 30 th , 2026	Session 8	1F	The Second Forum
Jan. 30 th , 2026	Session 9	2F	Meeting Room 1
Jan. 30 th , 2026	Session 10	2F	Meeting Room 2



KEYNOTE SPEAKER

January 29th | 9:50-10:30
The First Forum, B1F



Prof. Jong Hak Kim

Yonsei University, South Korea

Bio: Prof. Jong Hak Kim received his Ph.D. in Chemical Engineering from Yonsei University, South Korea, in 2003. He subsequently worked as a postdoctoral researcher in the Department of Materials Science and Engineering at the Massachusetts Institute of Technology (MIT). In 2005, he joined Yonsei University as an assistant professor and is currently a full professor in the Department of Chemical and Biomolecular Engineering. His research interests focus on the synthesis of functional polymers and their applications in gas separation membranes and polymer electrolytes for electrochemical devices. Prof. Kim has published over 420 papers in peer-reviewed international journals, including *Nature Communications*, *Angewandte Chemie*, and *Advanced Materials*. His work has received more than 17,400 citations, and his current h-index is 69.

Copolymer Design Strategies for High-Performance Ion-Conducting Polymer Membranes

Abstract: Ion-conducting polymer membranes are central to the realization of carbon-neutral energy technologies, enabling high-efficiency and zero-emission systems. They serve as key components in a wide range of electrochemical devices, including polymer electrolyte membrane fuel cells (PEMFCs), anion exchange membrane water electrolyzers (AEMWEs), lithium-ion batteries, and supercapacitors, as well as in separation processes such as electro dialysis, desalination, and industrial ion removal. Despite significant progress over recent decades, the simultaneous achievement of high ionic conductivity and robust mechanical integrity remains a fundamental challenge in membrane design, often limited by an intrinsic trade-off between transport efficiency and structural stability. In this conference, I will talk about three complementary strategies to overcome this limitation. First, we demonstrate the synthesis of SEBS-g-PSSA block-graft copolymers derived from commercially available hydrocarbon triblock copolymers, enabling a favorable balance between high ionic conductivity and mechanical flexibility. Second, we present a rapid and energy-efficient fabrication route for poly(arylene piperidinium) (PAP)-based anion exchange membranes, which circumvents the reliance on high-boiling solvents (e.g., DMSO) and energy-intensive drying processes inherent to conventional solution casting. Third, we describe the development of thermoplastic elastomeric graft-copolymer “glue” electrolyte membranes featuring nanoscale phase-separated morphologies, dual-ion transport pathways, and universal interfacial adhesion, making them particularly attractive for advanced solid-state electrochemical devices. Collectively, these approaches provide scalable and versatile pathways for the design and manufacturing of next-generation ion-conducting membranes with enhanced electrochemical performance, mechanical robustness, and structural adaptability, thereby advancing sustainable energy conversion and storage technologies.



INVITED SPEAKER

January 29th | 11:00-11:30
The First Forum, B1F



Prof. Domenico Pirozzi

University Federico II, Italy

Bio: Domenico Pirozzi, Ph.D. is Professor of Biochemical Engineering Principles at the University of Naples Federico II (Italy), where he obtained his Ph.D. in Chemical Engineering with a specialization in Biochemical Engineering. His research activity is focused on the design, modeling, and optimization of sustainable bioprocesses, with particular emphasis on bioremediation of contaminated waters, biofuel production from residual and lignocellulosic biomasses, and the application of enzymes in non-aqueous and multiphase systems.

He has coordinated and contributed to numerous competitive national and international research projects and has collaborated with industry as a scientific consultant. Prof. Pirozzi is the author of more than 100 peer-reviewed publications in international journals and serves on the Editorial Board of international scientific journals. He is actively involved in the organization of international scientific events, including the First Frederician Euro-Mediterranean Days, MedLife 2025, and several international Winter Schools.

Prof. Pirozzi has held visiting professor and research appointments at Universidad Nacional del Litoral (Argentina), the University of Strathclyde (UK), and Tsing-Hua University (China). At the University of Naples Federico II, he teaches undergraduate and graduate courses in Chemical Engineering, Biomedical Engineering, and Industrial Biotechnology, and contributes to the development of advanced multimedia teaching through the Federica Web Learning platform.

Innovative and Sustainable Materials for the Selective Adsorption of Rare Earths

Abstract: The rapidly growing demand for rare earth elements (REEs), driven by their indispensable role in advanced electronics, renewable energy systems, has intensified the need for efficient, selective, and environmentally sustainable recovery strategies. In particular, the extraction of REEs from low-concentration and complex aqueous sources, such as industrial effluents, secondary resources, and recycling streams, remains a major technological challenge.

This lecture provides a comprehensive overview of adsorption-based approaches for the separation and recovery of rare earth elements, highlighting recent advances in material design and process understanding. The physicochemical foundations of adsorption are examined in detail, with a clear distinction between physisorption and chemisorption mechanisms. The advantages of adsorption over conventional separation techniques are critically assessed.

Special emphasis is placed on the bio-based magnetic composite adsorbents, emerging as a promising and environmentally friendly platform for sustainable rare earth recovery, as they offer the advantages of renewable materials, tunable surface functionality, and efficient magnetic separation. Structural, morphological, and surface chemistry analyses are discussed to elucidate the relationship between material architecture, functional group chemistry, and adsorption performance. In particular, the incorporation of tailored functional groups is shown to play a crucial role in improving selectivity toward specific REE ions.

The insights presented in this lecture aim to guide the rational design of next-generation adsorbent materials and contribute to the development of scalable, green technologies for securing critical raw materials.



INVITED SPEAKER

January 29th | 11:30-12:00
The First Forum, B1F

Assoc. Prof. Chih-Chieh Wang



National Sun Yat-sen University, Taiwan

Bio: Dr. Chih-Chieh Wang is an Associate Professor in the Department of Materials and Optoelectronic Science at National Sun Yat-sen University (2022 - present). From 2014 to 2018, he served on the faculty of the Department of Materials Science and Engineering at Feng Chia University, and from 2013 to 2014, he worked as a Principal Engineer at Lam Research in Taiwan. He received his PhD in Materials Science and Engineering from National Tsing Hua University in 2008 and completed his postdoctoral training at the National Center for Instrumentation Research, Taiwan (2009 - 2011), and at The University of Texas at Austin (2011 - 2013). His research interests include atomic layer deposition, energy nanomaterials, and electrochemical energy storage. He was a recipient of the MOST Special Outstanding Talent Award in 2018 and the NSYSU College of Engineering Young Scholar Award in 2025.

Enhanced Surface Stability of Garnet-Type Solid-State Electrolyte via Atomic Layer Deposition

Abstract: The garnet-type solid-state electrolyte (SSE) suffers from poor interfacial contact with Li metal and susceptibility to dendrite penetration. In this study, these issues are addressed by tailoring the grain-boundary and surface properties of $\text{Li}_{6.5}\text{La}_3\text{Zr}_{1.6}\text{Ta}_{0.4}\text{O}_{12}$ (LLZTO) through atomic layer deposition (ALD) of Al_2O_3 and TiO_2 , followed by sintering. The treatments enhance the mechanical robustness of LLZTO and suppress its electronic conductivity, attributed to the formation of LiAlO_2 phases at grain boundaries and a $\text{Li}_4\text{Ti}_5\text{O}_{12}$ interphase on the surface. Furthermore, the modified SSE pellets exhibit stable galvanostatic Li plating/stripping behavior with low polarization, owing to improved Li wettability, leading to enhanced electrochemical performance. This work demonstrates that atomic-scale interface engineering of garnet SSEs via ALD-derived coatings can effectively mitigate Li dendrite penetration and offers new insights into the design of high-performance solid-state batteries.



Session 1

January 29th | 13:30-15:15 | B1F, the First Forum

- **Natural Fiber Reinforced Composites: Design and Performance**
- **Chairperson: Prof. Kazuo Umemura, Tokyo University of Science, Japan**

*Note: The schedule of each presentation is for reference only. Authors are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

13:30-13:45	<p>EA26-3012 Study on the Properties of Water Bamboo Shoot Shell as Bio-Based Flame Retardant and Its Epoxy Composite Application</p> <p>Chin-lung Chiang National Chin-Yi University of Technology, Taiwan</p>
13:45-14:00	<p>EA26-357 Sustainable Epoxy Composites Reinforced with Water Hyacinth Powder: Effects on Mechanical Properties</p> <p>Naruemon Sumrith King Mongkut's University of Technology North Bangkok, Thailand</p>
14:00-14:15	<p>EA26-363 High-Speed Impact and Fracture Performance of Sustainable Banana Fibre-Graphite Epoxy Composites for Protective Structural Applications</p> <p>Abdul Rashid Othman Universiti Malaysia Perlis, Malaysia</p>
14:15-14:30	<p>EA26-3015 Thermal and Rheological Properties of Hemp Fiber/Polybutylene Succinate (PBS) Composites</p> <p>Laongdaw Techawinyutham King Mongkut's University of Technology North Bangkok, Thailand</p>
14:30-14:45	<p>EA26-3016 Processing and Drying Characteristics of Duckweed as a Candidate Bio-Based Material for Composites</p> <p>Jetsadaporn Priyadumkol Mahidol University, Thailand</p>
14:45-15:00	<p>EA26-3047 Additive Manufacturing of HDPE Composites Reinforced with Alkali Treated Saccharum munja Fibers: Processing, Characterization, and Properties</p> <p>Nitin Kumar Arya Indian Institute of Technology Bombay, India</p>
15:00-15:15	<p>EA26-360 Hybrid Reinforcement Effects of Water Hyacinth Fibers and Powder on the Mechanical Properties of Epoxy-Based Composites</p> <p>Khampon Pansod King Mongkut's University of Technology North Bangkok, Thailand</p>

Session Group Photo & Best Presentation Award



Session 2

January 29th | 13:30-15:15 | 2F, Meeting Room 1

- **Biobased and Sustainable Polymer Composite Materials**
- **Chairperson: Prof. Jong Hak Kim, Yonsei University, South Korea**

*Note: The schedule of each presentation is for reference only. Authors are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

13:30-13:45	<p>EA26-3010 LCA Comparison of Traditional and Bio-Based Epoxy Resin for Aerospace Composite Materials</p> <p>Andrea Bologna Politecnico di Milano, Italy</p>
13:45-14:00	<p>EA26-365 Polyvinyl Alcohol/ Cinnamon Essential Oils-loaded Porous Rice Starch Composite Film for Active Food Packaging with Slow Release</p> <p>Elok Pawening Maharani Universitas Gadjah Mada and Universitas Nahdlatul Ulama Yogyakarta, Indonesia</p>
14:00-14:15	<p>EA26-125A Effect of lignin and nanoparticles preparation methods on the properties of PLA-based biodegradable films</p> <p>YeJin Jeong Chonnam National University, Republic of Korea</p>
14:15-14:30	<p>EA26-3023-A Non-hydrolytic Sol–Gel Synthesis of Ti-Doped ZrV_2O_7 for Epoxy Composite Underfills in Advanced Electronic Packaging</p> <p>Yu-Hsuan Chen Tunghai University, Taiwan</p>
14:30-14:45	<p>EA26-3046 Effect of Welding Energy on Three Different Interlayers on the Strength of Ultrasonic Welded Bamboo Strips</p> <p>Panidpim Sawangbunditkun Chiang Mai University, Thailand</p>
14:45-15:00	<p>EA26-3055-A Active and Intelligent Gelatin – Chitosan Composite Films Incorporated with Rambutan (<i>Nephelium lappaceum</i>) Peel Anthocyanins Extract Co-pigmented with Gallic Acid</p> <p>Arum Widyastuti Perdani Universitas Gadjah Mada and Universitas Negeri Yogyakarta, Indonesia</p>
15:00-15:15	<p>EA26-3064-A Green recycling of waste carbon fiber reinforced polymer composite via hydrophobic deep eutectic solvents</p> <p>Chun-Chi Chen Feng Chia University, Taiwan</p>

Session Group Photo & Best Presentation Award



Session 3

January 29th | 13:30-15:15 | 2F, Meeting Room 2

- **Biomedical Materials and Drug Delivery Systems**
- **Chairperson: Prof. Domenico Pirozzi, University Federico II, Italy**

*Note: The schedule of each presentation is for reference only. Authors are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

13:30-13:45	<p>EA26-3077 Development of Aloe vera and Calendula Extract Loaded Hydrogel Microneedle for Wound Dressing</p> <p>Duangkanok Tanangteerapong Khon Kaen University, Thailand</p>
13:45-14:00	<p>EA26-3085-A Recent Progress in Intelligent Cancer Therapy: Medical Nanorobots for Active Targeted Drug Delivery Systems (ATDDS)</p> <p>Suyeon Kim Pontificia Universidad Católica del Perú</p>
14:00-14:15	<p>EA26-335-A Injectable Self-Healing NSC – HAD Hydrogel with Shear-Responsive Kartogenin Release and Enhanced In Vitro Chondrogenic Activity</p> <p>Paveena Tikakosol Chiang Mai University, Thailand</p>
14:15-14:30	<p>EA26-354-A Integration of piPSC-Derived Myogenic Cells and Dual-Crosslinked Edible Gelatin Scaffolds Reinforced with Ribose-mTG for Structured Cultured Meat</p> <p>Hwanhui Kim Korea University, Republic of Korea</p>
14:30-14:45	<p>EA26-336-A Ethyl Cellulose–MXene (Ti_3C_2Tx) Electrospun Membrane as a Composite Drug-Delivery System for Wound Care Applications</p> <p>Tharnthip Krasian Chiang Mai University, Thailand</p>
14:45-15:00	<p>EA26-3025 Effects of Magnesium Ions in Hydroxyapatite Extracted from Bovine Bone for Biomedical Applications</p> <p>Sharifah Adzila Universiti Tun Hussein Onn Malaysia</p>
15:00-15:15	<p>EA26-117A Nitrogen-Doped Graphene Quantum Dot – Layered Double Hydroxide Nanocomposite Coatings for Corrosion Protection and Biocompatibility of Magnesium Alloys</p> <p>Poovarasi Balan Monash University, Malaysia</p>

Session Group Photo & Best Presentation Award



Session 4

January 29th | 13:30-15:15 | 2F, Meeting Room 3

- **Green Materials and Technologies for Environmental Remediation**
- **Chairperson: Prof. Chih-Chieh Wang, National Sun Yat-sen University, Taiwan**

*Note: The schedule of each presentation is for reference only. Authors are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

13:30-13:45	<p>EA26-3028 Asymmetric Titanium Dioxide-Polylactic Acid Membranes for Microfiltration and Photocatalytic Dye Removal</p> <p>Amira Mohd Nasib Universiti Malaysia Perlis, Malaysia</p>
13:45-14:00	<p>EA26-3035-A Microstructural Optical Magnetic and Antibacterial Photocatalytic Properties of Green Synthesized Magnetite Carbon Dots Ferrofluids Prepared Using Plant Extracts</p> <p>Mercuryta Dewi Noviasuti Gadjah Mada University, Indonesia</p>
14:00-14:15	<p>EA26-3065-A Amorphous Pd-loaded carbon cocatalyst framework for the highly sensitive electrochemical determination of 2,4,6-trichlorophenol</p> <p>Chiaying Chen, Hsin-Jou Cheng, Min-Hsun Shih National Chung Hsing University, Taiwan</p>
14:15-14:30	<p>EA26-109A An Interfacial Engineering Enabling High Voltage and Low Temperature Aqueous Supercapacitors</p> <p>Taeksoo Jung Pusan National University, Republic of Korea</p>
14:30-14:45	<p>EA26-3037-A Enhanced Photocatalytic Activity of Green-synthesized Fe₃O₄/rGO/ZnO Nanocomposite utilizing Plant Leaf Extracts for Antibacterial Application</p> <p>Nugraheni Puspita Rini Gadjah Mada University, Indonesia</p>
14:45-15:00	<p>EA26-122A Properties of Enzyme-Immobilized Magnetic Biochar to Improve Enzyme Stability and Reusability</p> <p>Eun-Ju Lee Chonnam National University, Republic of Korea</p>
15:00-15:15	<p>EA26-343 Production and Application of Microalgae Residue-Based Biochar For Soil Amendment</p> <p>Umi Fazara Md Ali Universiti Malaysia Perlis, Malaysia</p>

Session Group Photo & Best Presentation Award



Session 5

January 29th | 15:30-17:15 | B1F, the First Forum

- **Advanced Functional Materials for Sensing and Photonics**
- **Chairperson: Prof.Chin-lung Chiang, National Chin-Yi University of Technology, Taiwan**

*Note: The schedule of each presentation is for reference only. Authors are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

15:30-15:45	EA26-3031 Absorption of Low Loss Polymer Composite Optical Waveguide Nur Najahatul Huda Saris Universiti Teknologi Malaysia, Malaysia
15:45-16:00	EA26-3036-A Electric Field-Tuned Localized Surface Plasmon Resonance Enhancement in Green-Synthesized Silver-Based Nanocomposites for Biosensor Applications Rafli Fandu Ramadhani Gadjah Mada University, Indonesia
16:00-16:15	EA26-3044-A Metal – TCPP MOF Nanosheet – Based Ion-Gated FETs and Stress-Responsive Packaging Interface Films Yu-An Lo Tunghai University, Taiwan
16:15-16:30	EA26-3075 Tunable Plasmonic Enhancement of Silver Nanoparticles on Flexible Teflon for Effective SERS-assisted Environmental Monitoring Kais Daoudi University of Sharjah, UAE
16:30-16:45	EA26-3066 Characterization of Vanadium Zinc Carbide Saturable Absorber for Ultrafast Laser Application Azura Hamzah Universiti Teknologi Malaysia, Malaysia
16:45-17:00	EA26-3045 The Study of the Effect of Multilayer MXene Incorporation on the Properties of Polyacrylate Composites Fabricated by Stereolithography Kanat Anurakparadorn King Mongkut's Institute of Technology Ladkrabang, Thailand
17:00-17:15	EA26-3038-A Green-Synthesized $\text{Fe}_3\text{O}_4/\text{SiO}_2$ Nanocomposite Magnetic Labels for Magnetoresistance-based Biosensor Muhammad Rizki Gadjah Mada University, Indonesia

Session Group Photo & Best Presentation Award



Session 6

January 29th | 15:30-17:15 | 2F, Meeting Room 1

- **Microstructure and Property Tailoring via Advanced Manufacturing**
- **Chairperson: Dr.Sumit Sharma, Dr BR Ambedkar National Institute of Technology Jalandhar, India**

*Note: The schedule of each presentation is for reference only. Authors are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

15:30-15:45	<p>EA26-3053-A Research on Geometric Structure Design and Intelligent Mold Control for Micro-Roller Embossing of Flexible Polymer Composites</p> <p>Yung-Jin Weng National Chiayi University, Taiwan</p>
15:45-16:00	<p>EA26-3071 Precipitation Hardening of the Additive-manufactured 17-4 PH Stainless Steel for Medical Applications</p> <p>Chonnakan Wittayawongsarужи King Mongkut' s Institute of Technology Ladkrabang International Demonstration School, Thailand</p>
16:00-16:15	<p>EA26-3070 Influence of Nickel on Microstructure and Property in Die-Cast Ductile Iron</p> <p>Nidchanan Wanmai Suranaree University of Technology, Thailand</p>
16:15-16:30	<p>EA26-129A Process-Encoded Spatiotemporal Photothermal Actuation in DIW-Printed High-Tg Polyimide-rGO Composites</p> <p>Maxim M. Trubyanov National University of Singapore, Singapore</p>
16:30-16:45	<p>EA26-3080-A Digital Light Processing 3D Printing of Large-Scale and Crack-Free Ceramics with Perforated Internal Honeycomb Structures</p> <p>Siqian Wu Southern University of Science and Technology, China</p>
16:45-17:00	<p>EA26-3061-A Mechanical Characteristics of Aluminum Matrix Composites Reinforced with Si3N4 and HEA Fabricated by Spark Plasma Sintering</p> <p>Kun Xu Hosei University, Japan</p>
17:00-17:15	<p>EA26-3029-A Power-Dependent Ar and N₂ Plasma Treatment for Enhanced {111} Crystal Orientation in Electroless Copper Deposition: Electrochemical and Structural Analysis</p> <p>Yu-Jie Huang Tunghai University, Taiwan</p>

Session Group Photo & Best Presentation Award



Session 7

January 29th | 15:30-17:15 | 2F, Meeting Room 2

- **Materials and Structural Response to Extreme Environments**
- **Chairperson: Dr.Chia-Hua Lin, Tunghai University, Taiwan**

*Note: The schedule of each presentation is for reference only. Authors are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

15:30-15:45	EA26-334-A Structural Response Analysis of Fireproof Doors in Nuclear Facilities Under Internal Blast Loads Hyeona Kwon Korea National University of Transportation, Republic of Korea
15:45-16:00	EA26-371 Thermal Mechanical Performance Mapping of Insulation Material Under Extreme Desert Conditions: A Modeling-Based Comparative Study Abeer Abdullah Al Anazi Australian University, Kuwait
16:00-16:15	EA26-3073 Study on the Setting Characteristics, Mechanical Properties, and Volumetric Stability of Alkali-Activated Metakaolin-Based Composite Materials Pin Chien Cheng National Ilan University, Taiwan
16:15-16:30	EA26-347-A Seismic and Structural Monitoring of the San Pedro Apostol Church in Peru Rafael Aguilar Pontificia Universidad Catolica del Peru, Peru
16:30-16:45	EA26-338-A A Deep Learning-Based System for Pothole Risk Classification Using Car Tire Criteria Arim Gwon Korea National University of Transportation, Republic of Korea
16:45-17:00	EA26-3050 Conjugate Heat Transfer Analysis of Teflon-Coated Steel Surfaces Exposed to Premixed Flame Jets Panit Kamma King Mongkut' s University of Technology Thonburi, Thailand
17:00-17:15	EA26-301E Structural Changes of a Type of Polydiacetylene Single Crystal Obtained via Physical Vapor Transport Technique Induced by UV Irradiation Sadaharu JO Aichi Gakuin University, Japan

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Poster Session

January 29th | 16:00-17:10 | 2F, Meeting Room 3

- **Advanced Materials and Devices for Emerging Technologies**
- **Chairperson: Prof. Simon M. Jung, Hankyong National University, Republic of Korea**

*Note: Please paste poster on the designated display board at least 10 minutes before the session starts. Please take it away after the session, otherwise conference team will dispose the posters.

P01 EA26-3049	Synthesis of Lanthanum Vanadate Nanopowders at Low Temperature Using the Ultrasonic Method Hao-Long Chen National Pingtung University of Science and Technology, Taiwan
P02 EA26-313-A	Engineering Surface Dipole Moment by Self-Assembled Monolayers for High Performance Quantum Dot Light Emitting Diodes Hyo-Jun Lim Kyungpook National University, Republic of Korea
P03 EA26-3058-A	High-Speed Wavelength Recognition in Self-Powered Cu ₂ O/Si Photodetector Arrays Using Deep Learning on Truncated Signals Chun-Ying Huang National Chi Nan University, Taiwan
P04 EA26-314-A	Fabrication of high-efficiency QLEDs based on Oxide Hole-Injection Layers through Improved Electrical Properties Jae Jun Lee Kyungpook National University, Republic of Korea
P05 EA26-3076	Accessing the Residual Strain Development in Thick FRP Composite Laminates using Embedded Temperature and FBG Strain Sensor Santoshi Mohanta KIIT Deemed to be University Bhubaneswar, India
P06 EA26-315-A	Composition Design of NiO-based Co-Doped Hole Injection Layer and Improvement of QLED Device Characteristics Jang Heewon Kyungpook National University, Republic of Korea
P07 EA26-119A	Laser-Engineered Graphene – Gold Nanocomposite Potentiometric Sensor for Real-Time Sweat Electrolyte Monitoring Nipapan Ruecha Chulalongkorn University, Thailand
P08 EA26-317-A	Charge-Balanced Quantum Dot Light-Emitting Diodes Using Sputtered Li-doped NiO and a Dual-Functional Self-Assembled Monolayer Nayoon Lee Kyungpook National University, Republic of Korea



P09 EA26-3024-A	EDA Epoxy with PEG/PEGDE and Ionic Liquids: A Molecular Dynamics Study on Mechanical Properties Yujin Park Changwon National University, South Korea
P10 EA26-326-A	Mechanisms underlying chloride-enhanced pitting corrosion in pipeline steels Brahim Aissa Hamad Bin Khalifa University, Qatar
P11 EA26-3026-A	Electric Field – Mediated Modulation of Mechanical Stability in Amyloid- β Mutants Songhee Lim Changwon National University, South Korea
P12 EA26-322-A	Aluminum – Carbon nanotube Composite Foils for Durable Lithium-Ion Battery Anodes Woo Jin Kim Hongik University, South Korea
P13 EA26-3027-A	Density Functional Theory Study of Cu ₃ P@NCO Core – Shell Heterostructure for Enhanced Electrochemical Performance Junbin Yeom Changwon National University, South Korea
P14 EA26-327-A	Quantitative Strain Analysis of DED 316L Steel via Digital Image Correlation and FFT: Role of Hydrogen and Heat Treatment Brahim Aissa Hamad Bin Khalifa University, Qatar
P15 EA26-337-A	Synthesis and Characterization of Styrene-Maleic Acid Block Copolymers with Acrylic and Methacrylic Acids for Potential Use in Membrane Extraction Thidarat Khaojanta Chiang Mai University, Thailand
P16 EA26-346-A	Performance Evaluation of Anti-inflammatory Biodegradable Nanofiber Membranes Bongju Kim and Young-Jun Lim Seoul National University Dental Hospital, Republic of Korea
P17 EA26-120A	Enhancement of Soil Physicochemical Properties by Nano-Biochar/Wood Vinegar Composite Yoon-Jung SHIN Chonnam National University, Republic of Korea
P18 EA26-3014-A	Carbonation Treatment of Electric Arc Furnace Reducing Slag: Towards Durable and Sustainable Building Materials Cheng-Hsiu Yu National Taiwan University of Science and Technology, Taiwan
P19 EA26-3008	Application of Zero-Waste Ingredient Economy and Circular Tableware under Low-Carbon Subsidy Policy: A Case Study of Guai Shou Kitchen Chia Fang Tsai Shu-Te University, Taiwan



P20 EA26-3033-A	Cryogenic Printing of GelMA Scaffolds Reinforced by Microfibers Anderson Oliveira Lobo Federal University of Piau�, Brazil
P21 EA26-3081-A	Enabling High-RAP-Content Recycling in Asphalt Pavements through Epoxy Modification: Durability and Life Cycle Assessments Maijian Liu Southeast University, China
P22 EA26-3034-A	Hydroxyapatite and Iron Oxide Coatings on Ti6Al4V Alloy for Enhanced Osseointegration and Biocompatibility Fernanda Roberta Marciano Federal University of Piau�, Brazil
P23 EA26-304-A	Water Resistance Enhancement Mechanism of Alkyl-Modified Polyurethane Paving Materials: A Multiscale Simulation and Experimental Study Peixing Yang Southeast University, China
P24 EA26-361	Vacancy formation and trapping by carbon in ferritic iron: a first-principles study Olga Kulitckaya University of M�nster, Germany
P25 EA26-307-A	Effect of Defect Density on Thermal-Mechanical Properties of Defect-functionalized Graphene-Modified Asphalt Binder via Multi-Scale Analyses Zhiheng Wu Southeast University, China
P26 EA26-362	Vacancy Formation and Diffusion in FeCr Alloys Olga Kulitckaya University of M�nster, Germany
P27 EA26-3018-A	Meniscus Inspired Segmented Network Intercalation Drives an Evolution from Stiff to Stiff and Tough in Marine Antifouling healable Materials Junhao Xie Southeast University, China
P28 EA26-103A	Thickness-dependent properties of free-standing SnTe nanoplates grown without substrate Yan Xu Peking university, China

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Session 8

January 30th | 10:00-12:00 | 1F, the Second Forum

- **Multiscale Mechanical Modeling and Damage Behavior of Composites**
- **Chairperson: Prof.Kais Daoudi, University of Sharjah, UAE**

*Note: The schedule of each presentation is for reference only. Authors are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

10:00-10:15	<p>EA26-3013 Dynamic Contact Area Analysis of Composite Material Tractor Tires on Rigid Surfaces Using a Validated Finite Element Model</p> <p>Siwakorn Phakdee Assumption University, Thailand</p>
10:15-10:30	<p>EA26-3042 Investigation of Shear Band Effects on Energy Dissipation in Agricultural Non-Pneumatic Tires</p> <p>Juthanee Phromjan King Mongkut' s University of Technology Thonburi, Thailand</p>
10:30-10:45	<p>EA26-3048 Finite Element Analysis of Ply Orientation Effects in Carbon Fiber/Epoxy Composite External Fixators</p> <p>Karunamit Saensuriwong and Tharathep Phiboon Suranaree University of Technology, Thailand</p>
10:45-11:00	<p>EA26-306-A Influence of Wear Damage on Ballistic Performance and its Contribution in Environmental Aging of Soft Composite Laminates</p> <p>Rohan Jadhav IIT Kharagpur, India</p>
11:00-11:15	<p>EA26-106A Developing a Composite Materials Hardness Testing System Based on a Hemispherical Penetrator and the Rapid Measurement of Average Material Hardness</p> <p>Sheng-Hung Weng National Hsinchu Industrial High School, Taiwan</p>
11:15-11:30	<p>EA26-332 A Damage Mechanics – Based Analysis of CNT-Modified Self-Sensing Cementitious Composites</p> <p>Seungyeol Oh Korea National University of Transportation, Republic of Korea</p>
11:30-11:45	<p>EA26-356-A High-fidelity Prediction of Compression-After-Impact Response of Multidirectional Laminate with a Semi-Discrete Continuum Damage Mechanics Approach</p> <p>Manish Kumar Indian Institute of Technology Kanpur, India</p>
11:45-12:00	<p>EA26-111 A Preliminary Study on Designing a Composite Materials Hardness Testing Range Expander</p> <p>Pei-Tzu Weng National Hsinchu Industrial High School, Taiwan</p>

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Session 9

January 30th | 10:00-12:00 | 2F, Meeting Room 1

- **Advanced Materials and Multiphysics Devices for Sustainable Energy**
- **Chairperson: Prof.Hao-Long Chen, National Pingtung University of Science and Technology, Taiwan**

*Note: The schedule of each presentation is for reference only. Authors are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

10:00-10:15	EA26-3060-A Advancing OER Catalysis with Mn-Doped CoFe-LDH: A Scalable 3D Nanostructured Catalyst for Sustainable and High-Performance Energy Technologies Rajini Murugesan SRM Institute of Science and Technology (SRMIST), India
10:15-10:30	EA26-3009 Investigation of Membrane Thickness Effects on PEM Fuel Cell Performance Using OpenFOAM Chakrit Suvanjumrat Mahidol University, Thailand
10:30-10:45	EA26-3005 The Application of Magnesium Nitrate Hexahydrate/Carrot Nanocellulose/ Graphene-Based Phase Change Aerogel in Solar Thermal Energy Storage Teng-Hsiang Hsu Chaoyang University of Technology, Taiwan
10:45-11:00	EA26-3032-A Exploring the Effect of Liquid Viscosity on Charge Transfer of Liquid-Solid Triboelectric Platform Sangeun Lee Kyung Hee University, South Korea
11:00-11:15	EA26-340 Hemp Fiber Derived Cellulose Separator Modified with Sodium Alginate for Stabilizing Zinc Anode Suphaphit Natheetumrong Chulalongkorn University, Thailand
11:15-11:30	EA26-3017-A Design and Application of a Buckling-Induced Hybrid Energy Harvester for Maximized Synergistic Effect Hyeonyeong Choi Kyung Hee University, South Korea
11:30-11:45	EA26-3043 Material and Geometric Design of Helical and Finned Tube Heat Exchangers for Ice Thermal Energy Storage in Infrastructure Cooling Suppawut Laohachote Mahidol University, Thailand
11:45-12:00	EA26-3020-A Sustainable Dust Collection Using a Triboelectric Nanogenerator-based Electrostatic Precipitator with Integrated Water Electro spray System Seonghun Hwang Kyung Hee University, South Korea

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Session 10

January 30th | 10:00-12:00 | 2F, Meeting Room 2

- **Intelligent Design and Green Sustainable Materials**
- **Chairperson: Prof. Brahim Aissa, Hamad Bin Khalifa University, Qatar**

*Note: The schedule of each presentation is for reference only. Authors are required to attend the whole session, in case there may be some changes on conference day. Please join in the room 5-10 minutes earlier.

10:00-10:15	EA26-3041-A Transformer Attention Mechanisms for Generating High-Strength Silk Fibers Hongchul Shin Changwon National University, South Korea
10:15-10:30	EA26-3003-A Molecular Dynamics Analysis of Polymer-Derived Ceramics Sumit Sharma Dr BR Ambedkar National Institute of Technology Jalandhar, India
10:30-10:45	EA26-114 Feasibility of AMPS Hydrogel for Surface Cleaning in Art Conservation Passanun Chuangjaroen Silpakorn University, Thailand
10:45-11:00	EA26-3006 Preparation of Sugarcane Bagasse-Derived Cellulose Nanofibers via Deep Eutectic Solvent and Chemical Oxidation Yi-Hsien Chung Chaoyang University of Technology, Taiwan
11:00-11:15	EA26-349-A Effect of Solvent Type on the Formation and Stability of UV-Curable PSA Prepolymers SangMyung Kim and Simon MoonGeun Jung Hankyong National University, Republic of Korea
11:15-11:30	EA26-3030 An adaptive RVE Generation Algorithm for CFRP Composites Considering Pore Morphology and Spatial Statistics Ling Yan Zhejiang University, China
11:30-11:45	EA26-115A A Comparative Evaluation of A different of Conservation-Grade Resin for Treatments of Thai Enamelled Goldware Sutinee Girdthep Silpakorn University, Thailand
11:45-12:00	EA26-102A Applying Smart Interactive Technologies in Dementia Care from Caregivers' Perspectives on Companion Robots Dorothy Bai Taipei Medical University, Taiwan

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Delegate List

Taeyoung Yoon	Changwon National University, South Korea
Sungmin Yoon	Changwon National University, South Korea
Chia-Hua Lin	Tunghai University, Taiwan
Pichanan Vissanuyothin	The Newton Sixth Form School, Thailand
Wathit Methabu	The Newton Sixth Form School, Thailand
Athicha Jintawattanagul	The Newton Sixth Form School, Thailand
Siraphat Jintawattanagul	The Newton Sixth Form School, Thailand
Seongwon Hong	Korea National University of Transportation, Republic of Korea
Manuel Aparicio Razo	Benemerita Universidad Autonoma de Puebla (BUAP), Mexico
Kwang-Suk Jang	Hanyang University ERICA, Republic of Korea
Helena KHOURY MOUSSA	Université de Pau et des Pays de l'Adour, France
Jaewon Chang	Pukyong National University, South Korea
Junghwan Kim	Pukyong National University, South Korea
Hyungbum Park	Incheon National University, Republic of Korea
Kyoung Jin Kim	Yonsei University, South Korea
Soo-Kil Kim	Chung-Ang University, South Korea
Sung Hoon Ahn	Chosun University, South Korea
Hwankyu Lee	Dankook University, South Korea
Minjun Kim	Kyonggi University, South Korea
Haiying Jiang	HUAWEI TECHNOLOGIES JAPAN K.K., Japan
Mohamed Abo El Seoud	Egyptian Armed Forces, Egypt
Sameh Yaken Aref Ahmed	Egyptian Armed Forces, Egypt

