



2025 the 14th International Conference on Material Science and Engineering Technology

2025 the 12th International Conference on Chemical and Material Engineering



ICMSET2025 & ICCME2025

November 21-24, 2025

Osaka International Convention Center

JAPAN, OSAKA



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Prof. Sung Gu Kang	University of Ulsan	Republic of Korea
Prof. Jin Suk Chung	University of Ulsan	Republic of Korea

Conference Venue

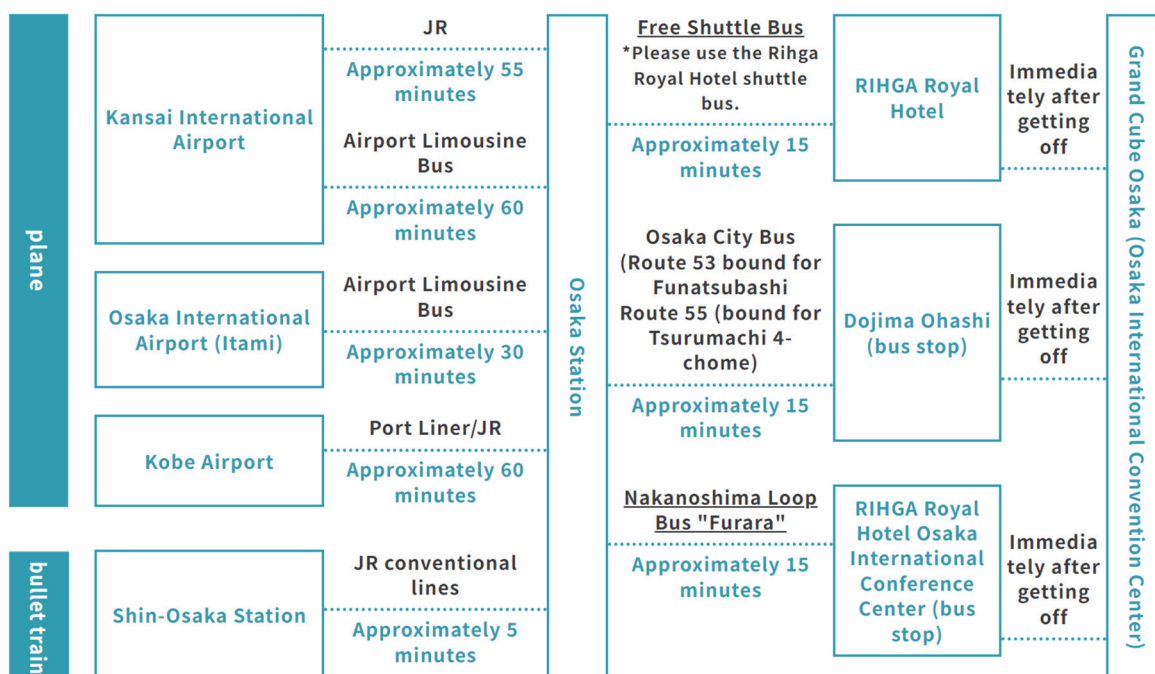
■ Osaka International Convention Center



Address: 5-3-51 Nakanoshima, Kita-ku, Osaka City, Osaka Prefecture, 530-0005 Japan

(Note: The organizer won't provide accommodation, and we suggest you make an early reservation.)

■ Transportation Guide



■ Floor Guide



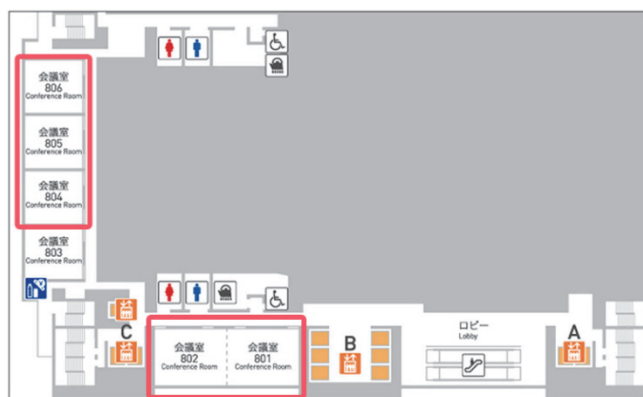
1101: Sign-in and conference kits collection



Event Hall-E: Opening Ceremony & Keynote Speech & Plenary Speech

Conference Venue

Floor Guide



801, 802, 804, 805, 806: Sessions room



701, 702: Sessions room

Sign-in

Spot 11F, Room 1101

Time 09:00-12:00, 13:30-17:30 | November 21st, 2025

Conference Rooms

Date	Activity	Level	Meeting Room
Nov. 22 nd , 2025	Opening Ceremony & Keynote Speech & Plenary Speech	3F	Event Hall-E
Nov. 22 nd , 2025	Session 1, 5	8F	801
Nov. 22 nd , 2025	Session 2, 6	8F	802
Nov. 22 nd , 2025	Session 3, 7	8F	804
Nov. 22 nd , 2025	Session 4, 8	8F	805
Nov. 22 nd , 2025	Poster Session 1, 2, 3, 4	7F	701~2
Nov. 23 rd , 2025	Session 9, 14, 19	7F	701
Nov. 23 rd , 2025	Session 10, 15, 20	7F	702
Nov. 23 rd , 2025	Session 11, 16, 21	8F	804
Nov. 23 rd , 2025	Session 12, 17, 22	8F	805
Nov. 23 rd , 2025	Session 13, 18, 23	8F	806

Notice

Free Wi-Fi

SSID: FREE-OICC

Password: grandcube

Scan to Get Conference Photos



Onsite Instructions

■ Time Zone: UTC/GMT+9 (Japan Time)

■ Language: English

■ 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. If you plan to use your own computer, please try the connection and make sure it works before your presentation.
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

1. The poster must not exceed the **A1, 594mm×841mm, upright/portrait format**. The poster must be printed beforehand and brought along to the conference by the author.
2. Please use an appropriate font size for the posters so that they are readable by the participants from 1 meter away. The poster message should be clear and understandable even without oral explanation.
3. Set up your printed poster before your session start time on the day you are scheduled to present.
4. Poster presenters are required to stand by the poster during the scheduled duration of the poster session to answer questions from attendees.
5. Presenters must remove their printed posters immediately after the poster session.

■ Dress Code

Please attend the conference in formal attire.

■ 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.

Program Outline

■ November 21st, 2025 (UTC/GMT+9, Japan Time)

■ Onsite Sign-in

Time	Activity	Venue
09:00-12:00 13:30-17:30	Sign-in Collecting Conference Materials for Onsite Participants ● Arrive at Registration desk ● Inform the staff of your paper ID and presentation session ● Sign-in ● Claim your conference kit including conference bag, conference identification badge, meal coupon, conference program, conference souvenir	11F Conference Room 1101

■ November 22nd, 2025 (UTC/GMT+9, Japan Time)

Venue: 3F, Event Hall-E

■ Opening Ceremony 09:00-09:10

09:00-09:10	Opening Remark from Prof. Ramesh K. Agarwal, Washington University in St. Louis, USA	
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■ Keynote Speech | 09:10-10:30

09:10-09:50	 Keynote Speech I: Prof. Ramesh K. Agarwal, Washington University in St. Louis, USA <i>"Multi-functional Layered Nanocomposites for Aircraft Applications"</i>	
09:50-10:30	 Keynote Speech II: Prof. Yusuke Yamauchi, The University of Queensland, Australia / Distinguished Professor, Nagoya University, Japan <i>"Mesoporous Matter 2.0: From Multi-Element Alloys and Single-Atom-Doped Metal Frameworks to Chalcogenides"</i>	
10:30-10:50	Group Photo & Coffee Break	

■ Plenary Speech | 10:50-11:50

10:50-11:10	 Plenary Speech 1: Prof. Ildoo Chung, Pusan National University, Korea <i>"Biodegradable and thermoresponsive hollow porous micro/nanoparticles for sustained drug release"</i>
11:10-11:30	 Plenary Speech 2: Prof. Junlei Qi, Harbin Institute of Technology, China <i>"New Methods for Joining Advanced and Dissimilar Materials"</i>
11:30-11:50	 Plenary Speech 3: Prof. Giorgio Vilardi, Sapienza University of Rome, Italy <i>"Nanofluids and Synthetic Enzymes for the intensification of carbon capture for the decarbonisation of hard to abate sectors"</i>

■ 12:00-13:00 | Lunch @ (8F) Conference Room 801 & 802

Program Outline

■ November 22nd, 2025 (UTC/GMT+9, Japan Time)

Venue: 7F, 701~2

■ Poster Sessions

13:00-14:00	Poster Session 1-<i>Materials Physics and Electronic Devices</i> ET25-2133-A, 2138-A, 289-A, 2276-A, 2274-A, 2214-A, 566-A, 2233-A, 2199-A, 2117-A, 2131-A, 258-A, 2147-A, 2289-A, 249-A, 2197-A, 225-A
14:15-15:15	Poster Session 2-<i>Energy Materials and Advanced Manufacturing Technologies</i> ET25-E01-A, 541-A, 2312-A, 573-A, 2297, 538-A, 2311-A, 569-A, 2127-A, 2121-A, 537-A, 571-A, 2186-A, 559-A, 284-A, 2169-A, 2250-A, 534-A
15:30-16:30	Poster Session 3-<i>Materials Chemistry and Chemical Engineering</i> ET25-2124, 2298-A, 224, 564-A, 567-A, 274-A, 555-A, 2175-A, 273-A, 552-A, 286-A, 565-A, 542-A, 572-A, 235-A, 553-A, 579
16:45-17:45	Poster Session 4-<i>Functional Materials and Biomedical Applications</i> ET25-238-A, 2210-A, 244-A, 252-A, 247-A, 2134-A, 253-A, 233-A, 234-A, 262-A, 2286-A, 2179, 250-A, 2290-A, 2142-A, 536-A, 299, 535-A

■ Technical Sessions

Venue: 8F, 801

Time	Activity
13:00-14:45	Session 1-<i>Biomaterials for Tissue Repair and Regenerative Medicine</i> ET25-221-A, ET25-2106-A, ET25-207-A, ET25-2328-A, ET25-2253, ET25-290-A, ET25-2263
15:15-16:45	Session 5-<i>Design and Structural Performance of Advanced Composite Materials</i> ET25-E02, ET25-568-A, ET25-2219, ET25-2161-A, ET25-2187-A, ET25-2335-A

Venue: 8F, 802

Time	Activity
13:00-14:30	Session 2-<i>Preparation, Processing, and Microstructure Evolution of Metallic Materials</i> ET25-2168-A, ET25-2295-A, ET25-294-A, ET25-2116-A, ET25-2304-A, ET25-2339-A
15:15-17:15	Session 6-<i>Catalyst Design and Catalytic Reaction Mechanism</i> ET25-563-A, ET25-556-A, ET25-2130-A, ET25-577-A, ET25-554-A, ET25-2154-A, ET25-560-A, ET25-551-A

Venue: 8F, 804

Time	Activity
13:00-14:15	Session 3-<i>Joining of Dissimilar Materials and Precision Manufacturing</i> ET25-2191, ET25-2235-A, ET25-202, ET25-2216, ET25-2248-A
15:15-17:00	Session 7-<i>Additive Manufacturing and Advanced Processing</i> ET25-2148-A, ET25-2194-A, ET25-263-A, ET25-2172-A, ET25-511-A, ET25-2105, ET25-2171-A

Venue: 8F, 805

Time	Activity
13:00-15:00	Session 4-<i>Waste Valorization and Engineering Material Development</i> ET25-2251-A, ET25-2227-A, ET25-236, ET25-2348, ET25-293-A, ET25-2115-A, ET25-2350, ET25-2249
15:15-17:00	Session 8-<i>Chemical Process Engineering and Molecular Synthesis</i> ET25-506-A, ET25-548-A, ET25-515-A, ET25-513-A, ET25-2129, ET25-507-A, ET25-518-A

- **18:00-20:00**
- **Dinner Banquet @ (12F) Grand Toque**

Program Outline

■ November 23rd, 2025 (UTC/GMT+9, Japan Time)

■ Technical Sessions

Venue: 7F, 701

Time	Activity
09:00-11:00	Session 9-Environmental Catalysis, Photocatalysis, and Pollutant Degradation ET25-2256-A, ET25-2273-A, ET25-2145, ET25-2279-A, ET25-2188-A, ET25-7070-A, ET25-2104, ET25-547-A
13:00-14:45	Session 14-Porous Materials and Membrane Separation Technology ET25-504-A, ET25-2180, ET25-524-A, ET25-512-A, ET25-296-A, ET25-505-A, ET25-2242
15:00-16:15	Session 19-Materials for Carbon Adsorption and Carbon Capture ET25-532-A, ET25-508-A, ET25-2196, ET25-514-A, ET25-539-A

Venue: 7F, 702

Time	Activity
09:00-10:45	Session 10-Electrocatalysis for Water Splitting and Green Hydrogen Production ET25-2136-A, ET25-2237-A, ET25-576-A, ET25-2238-A, ET25-264-A, ET25-2234-A, ET25-2189-A
13:00-14:45	Session 15-Bio-based and Biodegradable Polymer Materials ET25-271-A, ET25-2108, ET25-2306-A, ET25-270-A, ET25-291-A, ET25-279-A, ET25-516-A
15:00-16:15	Session 20-Advanced Sensor Materials and Detection Technology ET25-2246-A, ET25-283-A, ET25-2176-A, ET25-2109-A, ET25-260-A

Venue: 8F, 804

Time	Activity
09:00-11:00	Session 11-Glass and Ceramic Materials ET25-267-A, ET25-2151, ET25-255-A, ET25-2264, ET25-2346-A, ET25-256-A, ET25-242, ET25-276-A
13:00-14:45	Session 16-Energy Storage Materials and Systems ET25-2240-A, ET25-2316-A, ET25-2241-A, ET25-2315-A, ET25-2302-A, ET25-254, ET25-530-A
15:00-16:30	Session 21-Nanomedicine and Drug Delivery Systems ET25-2220, ET25-2326-A, ET25-2299-A, ET25-2224-A, ET25-2301-A, ET25-509-A

Venue: 8F, 805

Time	Activity
09:00-11:00	Session 12-Design and Performance Tailoring of Functional Materials and Structures ET25-2110, ET25-2334-A, ET25-2232-A, ET25-243, ET25-546, ET25-2137-A, ET25-2278-A, ET25-277-A
13:00-14:45	Session 17-Advanced Optical Materials and Functional Applications ET25-2261-A, ET25-2259-A, ET25-2252-A, ET25-2260-A, ET25-2345-A, ET25-2257-A, ET25-2258-A
15:00-16:30	Session 22-AI-Driven Materials Discovery and Design ET25-2349-A, ET25-2314-A, ET25-2347-A, ET25-510-A, ET25-2320-A, ET25-2255-A

Venue: 8F, 806

Time	Activity
09:00-10:30	Session 13-Frontiers in Carbon-based Nanomaterials: From Synthesis to Applications ET25-265-A, ET25-2313-A, ET25-2139-A, ET25-259-A, ET25-2222-A, ET25-2174-A
13:00-14:45	Session 18-Design, Structure, and Properties of Magnetic Materials ET25-2193-A, ET25-2156-A, ET25-2165-A, ET25-2160-A, ET25-2173-A, ET25-2166-A, ET25-2283-A
15:00-16:30	Session 23-Controllable Synthesis and Self-Assembly of Nanomaterials ET25-281-A, ET25-2128-A, ET25-578-A, ET25-517-A, ET25-232-A, ET25-543-A

■ 11:30-13:00 | Lunch @ (8F) Conference Room 804 & 805 & 806

Program Outline

■ November 24th, 2025 (UTC/GMT+9, Japan Time)

■ One-Day Tour in Osaka

Time	Activity
10:00-19:00	Osaka International Convention Center - Nara Park - Todaiji Temple – Fushimi Inari Taisha - Kiyomizu-dera Temple – Ninen-zaka & Sannen-zaka - Hanamikoji - Osaka Downtown

● Nara Park

- ✧ **Deer Everywhere:** The park is famous for its hundreds of wild but friendly deer. You can buy special crackers to feed them, and they often bow to ask for food!
- ✧ **A Massive Buddha:** Inside Todaiji Temple is one of Japan's largest bronze statues of Buddha. It is incredibly huge and impressive.
- ✧ **A Giant Pillar:** Inside the same hall, there is a hole in a wooden pillar that is the same size as the Buddha statue's nostril. It is said that those who can crawl through it will gain enlightenment.

● Fushimi Inari Taisha

- ✧ **Thousands of Red Gates:** This is the most famous feature—a path of thousands of bright red torii gates winding up a mountain. It feels like walking through a tunnel of red.
- ✧ **Fox Statues:** The shrine is dedicated to the god of rice and business, whose messengers are foxes. You will see many fox statues throughout the grounds.
- ✧ **Hiking Trail:** The path through the gates goes all the way up the mountain. You can take a short walk or a longer hike for great views over Kyoto.

● Kiyomizu-dera Temple

- ✧ **The Wooden Stage:** The main hall features a huge wooden stage that juts out over the hillside, supported by tall pillars. It offers amazing views of cherry and maple trees in the seasons.
- ✧ **Pure Water:** The temple's name means "Pure Water." It comes from a waterfall underneath the main hall. Drinking from its three streams is said to grant wishes for health, love, or long life.
- ✧ **Love Stones:** There are two stones placed 18 meters apart. Walking from one to the other with your eyes closed is said to mean you will find true love.

● Ninen-zaka & Sannen-zaka

- ✧ **Traditional Streets:** These are two beautiful, preserved pedestrian streets leading up to Kiyomizu-dera. They are lined with old-fashioned wooden merchant houses.
- ✧ **Atmosphere:** Walking here feels like stepping back in time to old Kyoto. It's perfect for taking photos.
- ✧ **Souvenirs & Snacks:** The houses now contain charming shops selling traditional crafts, sweets, pickles, and green tea.

● Hanamikoji Street

- ✧ **Geisha Spotting:** This is the main street in the Gion district, famous for being a place where you might see Geiko or Maiko (Kyoto's geisha) walking to their appointments in the evenings.
- ✧ **Elegant Teahouses:** The street is lined with exclusive and beautiful traditional teahouses and restaurants with hidden entrances.
- ✧ **Historic Charm:** Even during the day, the architecture and atmosphere of the street are incredibly photogenic and elegant.

Keynote Speakers

November 22nd | 09:10-09:50



3F, Event Hall-E



Prof. Ramesh K. Agarwal

Washington University in St. Louis, USA

● Bio

Professor Ramesh K. Agarwal is the William Palm Professor of Engineering in the department of Mechanical Engineering and Materials Science at Washington University in St. Louis. From 1994 to 2001, he was the Sam Bloomfield Distinguished Professor and Executive Director of the National Institute for Aviation Research at Wichita State University in Kansas. From 1978 to 1994, he was the Program Director and McDonnell Douglas Fellow at McDonnell Douglas Research Laboratories in St. Louis. Dr. Agarwal received Ph.D in Aeronautical Sciences from Stanford University in 1975, M.S. in Aeronautical Engineering from the University of Minnesota in 1969 and B.S. in Mechanical Engineering from Indian Institute of Technology, Kharagpur, India in 1968. Over a period of forty years, Professor Agarwal has worked in various areas of Computational Science and Engineering - Computational Fluid Dynamics (CFD), Computational Materials Science and Manufacturing, Computational Electromagnetics (CEM), Neuro-Computing, Control Theory and Systems, and Multidisciplinary Design and Optimization. He is the author and coauthor of over 500 journal and refereed conference publications. He has given many plenary, keynote and invited lectures at various national and international conferences worldwide in over fifty countries. Professor Agarwal continues to serve on many academic, government, and industrial advisory committees. Dr. Agarwal is a Fellow eighteen societies including the Institute of Electrical and Electronics Engineers (IEEE), American Association for Advancement of Science (AAAS), American Institute of Aeronautics and Astronautics (AIAA), American Physical Society (APS), American Society of Mechanical Engineers (ASME), Royal Aeronautical Society, Chinese Society of Aeronautics and Astronautics (CSAA), Society of Manufacturing Engineers (SME) and American Society for Engineering Education (ASEE). He has received many prestigious honors and national/international awards from various professional societies and organizations for his research contributions.

● Speech Information

Multi-functional Layered Nanocomposites for Aircraft Applications

Abstract: In recent years, there has been increased emphasis on 'Environmentally Responsible Aviation (ERA)' with the dual aims of reducing the energy consumption as well as emissions. Several new concepts for the aircraft have been proposed to reduce drag, improve engine efficiency, and reduce mass. In addition to various aerodynamic and propulsion technologies that are being researched to achieve the goals of ERA, reduction of aircraft mass has become one of the major drivers in developing new aircraft design concepts, novel materials and manufacturing processes. Among the novel materials, nanocomposites with multi-functionality offer the promise of weight reduction, reduced complexity, and integrated health management of aircraft components/systems. The new aircraft structures using multi-functional nanocomposites can be built using additive manufacturing. The focus of this talk is on recent developments in layer-by-layer assembly of nanomaterials in developing new nanocomposite structures.

Macroscale assembly of the nanomaterials requires special techniques with molecular scale component manipulation; it is different from conventional composite processing techniques. This technique offers the possibility of controlling the structure of composite materials at nanometer scale with high degree of accuracy and therefore allows the establishment of design rules for composite structures initially at small scale and then their possible replication at a larger scale using other methods of composite manufacturing. It is a method of alternating deposition of oppositely charged components from dilute solutions or dispersions on a suitable substrate. It is becoming a widely used method for the preparation of multifunctional thin films due to its simplicity, robustness and versatility. Introduction of hybrid organic/inorganic films has further enriched the functionality and applicability of layer-by-layer assembly. While this field covers a vast number of molecular species and architectures, this talk reviews the state-of-the-art in synthesis and properties of multilayer hybrid nanocomposites based on two commercially available functional nanomaterials - the clay nanosheets and carbon nanotubes (CNTs). Each of these two building blocks possesses unique structural and physicochemical properties thus enabling preparation of variety of functional composites. Furthermore, they are only a few nanomaterials that allow evaluation of the efficiency of stress transfer in composites since the mechanical parameters of individual nanotubes and individual clay sheets are available. The properties and functionalities of clays- and CNT-based multilayered structures are discussed. In addition, some of the future challenges in this field are discussed.

Keynote Speakers

November 22nd | 09:50-10:30

3F, Event Hall-E



Prof. Yusuke Yamauchi

**The University of Queensland, Australia
 Distinguished Professor, Nagoya University, Japan**

● Bio

Professor Yusuke Yamauchi received his Bachelor's degree (2003), Master's degree (2004), and Ph.D. degree (2007) from Waseda University, Japan. After receiving his Ph.D., he joined the National Institute of Materials Science (NIMS) in Japan, to start his own research group. At the same time, he began to serve as an adjunct professor to supervise Ph.D. students at the Department of Nanoscience and Nanoengineering, Waseda University. After being granted the ARC Future Fellowship, in May 2016, he joined the Institute for Superconducting & Electronic Materials (ISEM), the Australian Institute for Innovative Materials (AIIM) at the University of Wollongong (UOW) as a professor. In 2017, he moved to the University of Queensland (UQ). Presently, he is a Senior Group Leader at the Australian Institute for Bioengineering and Nanotechnology (AIBN) (on secondment from the School of Chemical Engineering until 2026), a Professor at the School of Chemical Engineering, and a Director at the Australian Materials nanoTectonics Centre, UQ. He concurrently serves as an ERATO Research Director at the JST-ERATO Yamauchi Materials Space-Tectonics, a Distinguished Professor at Nagoya University (Japan), an Honorary Distinguished Professor at Yonsei University (South Korea), an Invited Researcher at the National Institute for Materials Science (NIMS), a Guest Senior Researcher (Guest Professor) at Waseda University, an Advisory Board Member of prestigious journals (Small, Small Structures, Precision Chemistry, ChemCatChem, J. Inorg. Organomet. Polym. Mater., etc.) and an Associate Editor of the Journal of Materials Chemistry A published by the Royal Society of Chemistry (RSC) and Chemical Engineering Journal (Elsevier).

● Speech Information

Mesoporous Matter 2.0: From Multi-Element Alloys and Single-Atom-Doped Metal Frameworks to Chalcogenides

Abstract: Porous materials with well-defined nanospace—such as zeolites, activated carbons, and silica gels—have long been studied for applications in catalysis, separation, energy, and environmental remediation. However, conventional mesoporous materials are mostly limited to insulating silica or semiconducting metal oxides, which restrict their functionality in electrochemical systems. To address these limitations, we have proposed the concept of second-generation mesoporous materials, characterized by electronically conductive frameworks composed of metallic and semi-metallic elements. Our work focuses on constructing new classes of mesoporous frameworks by integrating multiple elements and introducing atomic-level precision in their composition and structure. Three representative approaches are summarized as follows:

1. Mesoporous High-Entropy Alloys (HEAs):

Using a one-step micelle-assisted chemical reduction method, we synthesized uniform mesoporous PtPdRhRuCu nanoparticles. The resulting HEA framework exhibits excellent structural uniformity and stability, achieving high hydrogen evolution reaction (HER) activity in both acidic and alkaline media, with remarkable durability over 10,000 cycles. Density functional theory revealed that the high-entropy effect within mesopores optimizes the water dissociation barrier and hydrogen adsorption energy, leading to enhanced catalytic performance.

2. Single-Atom-Doped Amorphous Metal Frameworks:

Amorphous Ni–B mesoporous frameworks were utilized as hosts for atomically dispersed Pt sites via controlled substitution. The amorphous nature stabilized isolated Pt atoms, providing exceptional HER activity (11 mV overpotential at 10 mA cm⁻²) and a mass activity of 30 A mgPt⁻¹, far surpassing commercial Pt/C catalysts.

3. Mesoporous Chalcogenides:

Extending our soft-templated strategy, we developed mesoporous chalcogenides (e.g., Bi₂Se₃, CuTe, CdSe) with tunable bandgaps while maintaining structural periodicity. These materials exhibit promising potential in photo- and electrochemical sensing, including surface-enhanced Raman scattering (SERS) applications.

Overall, this study establishes a new materials design concept that bridges nanostructural precision and electronic functionality, paving the way for next-generation conductive porous materials for energy and environmental technologies.

Plenary Speakers

November 22nd | 10:50-11:10

3F, Event Hall-E



Prof. Ildoo Chung

Pusan National University, Korea

● Bio

Professor Ildoo Chung joined the Department of Polymer Science and Engineering at Pusan National University, Korea, in 2005. Prior to this, he conducted postdoctoral research in the Department of Chemistry at the University of Tennessee, USA, and the Department of Biomedical Engineering at the University of Alabama at Birmingham, USA. He earned his Ph.D. from Pusan National University in 2000.

He has served as the Editor-in-Chief of the Journal of Adhesion and Interface and as a member of the board of directors for the Polymer Society of Korea, the Korea Society of Adhesion and Interface, the Korea Polyurethane Society, and the Asian Cyclodextrin Conference. He has published over 130 peer-reviewed articles and delivered more than 220 presentations at national and international conferences.

His research focuses on polymer synthesis methods such as atom transfer radical polymerization (ATRP) and reversible addition-fragmentation chain transfer (RAFT) polymerization, with applications in advanced polymeric biomaterials. These include drug delivery systems, polymers compatible with hard and soft tissues for dental and orthopedic applications, photocurable 3D-printable polymeric biomaterials, biodegradable polymers, and composite systems.

● Speech Information

Biodegradable and thermoresponsive hollow porous micro/nanoparticles for sustained drug release

Abstract: Various types of porous biodegradable polymers based on polycaprolactone (PCL), polylactide (PLA), and polyurethane were synthesized and used as drug delivery vehicles for bupivacaine and carboplatin. Porous biodegradable microspheres were fabricated by successful RAFT polymerization of methyl vinyl ketone (MVK) onto PCL and PLA, which was first synthesized by ring opening polymerization of lactide followed by an oil/water emulsion-evaporation method, then finally photodegradation of PMVK blocks by UV irradiation. Biodegradable porous polyurethane nanoparticles have also been fabricated using water-in-oil-in-water double emulsion and solvent evaporation methods. These nanoparticles are composed of biodegradable and biocompatible polyfumarateurethane (PFU) and L-threonine polyurethane (LTHU), designed for degradation through hydrolysis and enzymatic activity, facilitated by the presence of ester bonds and peptide bonds within the polymer backbone. The morphology of microspheres was spherical with smooth surfaces before UV irradiation. Microspheres fabricated only from PCL homopolymers could also retain their smooth surface after UV irradiation. However, those from PCL-PMVK and PCL-PLA-PMVK block copolymers had rough surfaces and porous structures after UV irradiation due to the photodegradation of PMVK blocks as a porous template. The porosity and shape of the microspheres and shape of microspheres were dependent on the PMVK contents and size of microspheres. In addition, the drug loading, encapsulation efficiency, and drug release profiles, using UV-Vis spectroscopy, showed the highest encapsulation efficiency with 2.5% drug, and sustained release profile.

Plenary Speakers

November 22nd | 11:10-11:30

3F, Event Hall-E



Prof. Junlei Qi

Harbin Institute of Technology, China

● Bio

Qi Junlei, born in 1982, male, is a Professor and Doctoral Supervisor with a Ph.D. in Engineering. He currently serves as the Deputy Director of the State Key Laboratory of Precision Welding and Joining of Materials and Structures at Harbin Institute of Technology. He has been recognized as a Distinguished Young Scholar by the Ministry of Education, a High-Level Talent in Heilongjiang Province, a recipient of the Excellent Youth Fund of Heilongjiang Province, and an Academic Leader of the Young Scientist Studio at Harbin Institute of Technology.

His research primarily focuses on the fundamental theories and applications of joining advanced materials and dissimilar materials. He has led more than 30 research projects, including the National Natural Science Foundation of China (NSFC) Young Scientists Fund, General Program, and Key Program of the Equipment Development Foundation. Additionally, he has played a key role in many key projects in aerospace and military industries. He has published over 200 papers in prominent academic journals, including more than 170 SCI-indexed papers with over 9,000 citations and an H-index of 51. Among these, more than 130 papers were published as first or corresponding author, including over 50 papers with an impact factor (IF) greater than 10, six cover papers, and more than 20 ESI Hot or Highly Cited Papers. As the first inventor, he has filed 53 Chinese invention patents, with 33 already authorized, and three technological achievements have been transferred for application. His research findings have been applied in the manufacturing of key products in aerospace, nuclear power, and new energy sectors, including aerospace engine, thermal barrier coatings, aerospace antenna covers, nuclear electrical equipment, and composite current collectors.

● Speech Information

New Methods for Joining Advanced and Dissimilar Materials

Abstract: Ceramic/ceramic-based materials are widely used in the processing and manufacturing of various structural and functional components in aerospace, electronic communication and other fields due to their excellent properties such as light weight, high strength, high temperature resistance and oxidation resistance. Due to the high hardness and brittleness of ceramic materials, as well as their poor machinability, in practical applications, they need to be brazed and connected with themselves or heterogeneous metals to achieve the manufacturing of components with complex geometric structures. However, ceramic-based material welding is confronted with bottleneck problems such as poor surface compatibility, complex interfacial reactions prone to the formation of brittle compounds, and large residual stress during welding, which makes the interface prone to cracking. In response to the above issues, the presenter and his team have made progress in recent years in advanced intermediate layer design, surface structure regulation, and the development of non-equilibrium welding technology, achieving the welding connection of various new materials such as ceramics, ceramic-based composites, and graphene/carbon nanotubes with themselves or heterogeneous metals. The key research focuses on breakthroughs in interface reaction regulation, interface structure regulation, property gradient transition, residual stress relief, and the application of wave transmission/thermal dissipation functions, providing crucial technical support for the manufacturing of ceramic-based material connection components.

Plenary Speakers

November 22nd | 11:30-11:50

3F, Event Hall-E



Prof. Giorgio Vilardi

Sapienza University of Rome, Italy

● Bio

Giorgio Vilardi (<https://sites.google.com/uniroma1.it/giorgiovilardi-eng/home?authuser=0>) is tenure-track Professor (Associate) of Chemical Engineering at Sapienza University of Rome, qualified as Full Professor at the end of 2023. He is ranked among the World's Top 2% Scientists (Elsevier-World Ranking of Top 2% Scientists) from 2019, he published 60 articles on nanoparticles synthesis and use for organic waste oxidation, acid gases capture and conversion, steelmaking and cement innovative and low-environmental impact cycle development, solid and liquid waste thermochemical conversion (CFD), with about 3000 citations and 39 H-index. He is part of the editorial board of 5 scientific journals, such as JTICE (Elsevier). Chair of ICRTEG 2020 and member of Program Committee of NESP 2022, member of Scientific Committee and invited lecturer at the 3rd GREENERING in 2025. Winner of Minerza Award for Scientific Research in 2021, of the Early Career Award-GRICU in 2022 and of the Bettersize – Particuology Excellent Article Award for his research output on iron extraction and metallic iron production. He is President of the Steelmaking National Working Group of AIDIC (Italian National Chemical Engineering Association).

● Speech Information

Nanofluids and Synthetic Enzymes for the intensification of carbon capture for the decarbonisation of hard to abate sectors

Abstract: Reactive absorption still represents the TRL9 technology adopted in post-combustion carbon (PCC) capture processes for the decarbonization of hard to abate industrial sectors. This technology is mainly based on the use of aqueous solutions of amines that are well-known from 1930 for their capacity to react with carbon dioxide and other acid gases (i.e. H₂S) in a reversible way. Two main drawbacks are related to this technology: environmental impact (amine aerosols, toxic leakages, carbon footprint related to their synthesis, hazardous handling) and high regeneration costs (>60% of total costs). The use of greener solvents, such as K₂CO₃, surely can lead to reduced environmental impact but to lower efficiency and generally to higher costs (in particular CapEx). To overcome these limits, the addition of metal oxide nanoparticles-NPs as well synthetic enzymes-SE (that mimic the carbonic anhydrase behavior) has been tested and demonstrated to be effective in CO₂ capture and sequestration. The coupling of this process with the mineralization of carbonates, by means of steelmaking solid waste and other possible alkaline waste is a very promising process, allowing to perform simultaneous storage and absorbent regeneration at mild operative conditions, with a notable savings on OpEx.

Poster Session 1

November 22nd | 13:00-14:00 | 7F, 701~2

■ Materials Physics and Electronic Devices

■ Chairperson: Assoc. Prof. Candy Cadang Mercado, University of the Philippines, Philippines

***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 ET25-2133-A	<i>Analysis of Graphene-FET Electrical Properties by Grain Boundaries and Surface/Interface Interactions</i> Eun Kyung Lee , Taejun Gu, Dongmok Whang, Byoung Lyong Choi Sung Kyun Kwan university, Republic of Korea
P02 ET25-2138-A	<i>Lumped-Element Circuit Modeling and Logic Gate Implementation Using Nanoscale Vacuum Channel Diodes</i> Deepak Sharma , Anthony Tricker-Reissig, Shruti Nirantar RMIT University, Australia
P03 ET25-289-A	<i>Electrospun Oxide Nanowire Gas Sensors: Fabrication and Sensing Mechanism for VOC Detection</i> Cheng-Hsien Tu, Yi-Hsin Teng, Wei-Hsiang Liao, Yu-Chun Lin, Cheng-Liang Hsu National University of Tainan, Taiwan
P04 ET25-2276-A	<i>Local structure and characterization of Cs-doped FAMAPb(IBr)₃ perovskite film</i> Tirapat Wechprasit , Wasan Maiaugree Thammasat University, Thailand
P05 ET25-2274-A	<i>α-Ga₂O₃ Thin Film On A-plane Sapphire By Sol-Gel Method</i> YoungHo Son , Chang-Hyeon Jo, Gwangseop Lee, Yoon-Young Huh, Masaya Ichimura, Jung-Hyuk Koh Chung-Ang University, Republic of Korea
P06 ET25-2214-A	<i>Determining 2D Emitter Nanomaterial Orientation via Polarization and Emission Image Pattern Analysis at Oblique Detection Angle</i> Danell Jeune C. Nagal , Lean L. Dasallas, Myles Allen H. Zosa University of the Philippines Diliman, Philippines
P07 ET25-566-A	<i>Characteristics of Sodium Silicate High-Temperature CO₂ Adsorbents</i> Ik Seong Ahn , Yoo Shin Kang, Chan Hyun Lee University of Ulsan, Republic of Korea

P08 ET25-2233-A	<i>Metal–Organic Framework-Based Functional Composites: Hemoglobin Encapsulation and Nanoparticle Proximity Effects</i> Yueqin Zhang , Li Zhou, Junchen Chen, Lien-Yang Chou Shanghai Tech University, China
P09 ET25-2199-A	<i>Unravelling the spectral imaging and quantum cutting effects in rare-earth doped nanophosphor</i> Ib Singh Deo , Mohini Gupta, G. Vijaya Prakash Indian Institute of Technology Delhi, India
P10 ET25-2117-A	<i>The Synthesis of Graphitic Carbon Nitride-doped ZnO Nanorods for UV photodetectors Studies</i> Bohr-Ran Huang , Pei-Bo Zhang National Taiwan University of Science and Technology, Taiwan
P11 ET25-2131-A	<i>High-k and Frequency-stable Dielectric Film Based on Oxygen-Mediated Nanocrystalline hBN</i> Sejin Nam , Sang Duck Park, Eun kyung Lee, Dongmok Whang Sungkyunkwan University, Republic of Korea
P12 ET25-258-A	<i>Autonomous-Gelation Hydrogel-Based Electronics for Strain-Immune Low-Pass Filtering</i> Qianxi Fan , Yufei Liu Chongqing University, China
P13 ET25-2147-A	<i>Tunable Polarity Control in MoTe₂ via Laser Irradiation for Multifunctional Device Applications</i> IRSA ZULFIQAR , DONGMOK WHANG Sungkyunkwan University, Republic of Korea
P14 ET25-2289-A	<i>Semiconductor Nanolayers Triggered by Dual Ultrasonic and Shear Stress for Piezoelectric-Driven Thrombolysis</i> Chenxin Lu , Fang Yang Southeast University, China
P15 ET25-249-A	<i>Photoresponsive Fluorescent Material through Synergistic Regulation of Solvent Polarity and Metal Ion: Photoinduced Fluorescence Enhancement and Blue Shift</i> Jiajing Zhang , Yaqin Han, and Yufei Liu Chongqing University, China
P16 ET25-2197-A	<i>Study of Sr(Ni_{1/3}Nb_{2/3})O₃ Thermoelectric Ceramics</i> Yu-Sheng Chen, Cheng-Hsing Hsu National United University, Taiwan
P17 ET25-225-A	<i>Designing 2D Carbon Materials For Nanoelectronics: Functionalization Driven Bandgap Engineering in alpha-4 Graphyne</i> Saswathy Rema Devi , Mohamad Akbar Ali Khalifa University, United Arab Emirates
Session Group Photo & Best Presentation Award	

Poster Session 2

November 22nd | 14:15-15:15 | 7F, 701~2

■ Energy Materials and Advanced Manufacturing Technologies

■ Chairperson: Prof. Giorgio Vilardi, Sapienza University of Rome, Italy

***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 ET25-E01-A	<i>The influences of building direction on the fatigue properties of additive manufactured Corrax maraging stainless steel</i> Xue-Jun Zhuang, Ming-Hsiang Ku, Chien-Lun Li, Ming-Wei Wu National Taipei University of Technology, Taiwan
P02 ET25-541-A	<i>Study on the Effect of Process Temperature in Al/Cu Brazing Process</i> Changwoo - LEE , Dongjin - Oh, Sunchul - Ko Korea Institute of Industrial Technology, South Korea
P03 ET25-2312-A	<i>Microstructure and Mechanical properties of GTAWed 9% Ni steel at 15 K</i> KeunHyung Lee , You Sub Kim, Soo Yeol Lee Chungnam National University, Republic of Korea
P04 ET25-573-A	<i>Atomic-Scale Insights into the Synthesis of MXenes via Density Functional Theory Calculations</i> Incheol Jeong , Kimin Roh Korea Institute of Geoscience and Mineral Resources, South Korea
P05 ET25-2297	<i>Microstructure and Mechanical Properties of AA5052/AA6061 Layered Sheet Fabricated by Cold Roll-Bonding and Aging Treatment</i> Hyeon-Jun Heo, Seong-Hee Lee Mokpo National University, Republic of Korea
P06 ET25-538-A	<i>Machine Learning-Driven Optimization of Screw Extrusion Additive Manufacturing for Defect Reduction</i> Wonsik Lee , Jinman Jang Korea Institute of Industrial Technology, South Korea
P07 ET25-2311-A	<i>Deformation Behavior of TWIP Steel at Cryogenic Temperature: The Role of Strain Rate</i> Taeho Lee , Jun-Yun Kang, Soo Yeol Lee Chungnam National University, Republic of Korea
P08 ET25-569-A	<i>Synthesis and Etching of V/Ti MXenes for Zn-Ion Capacitor Applications</i> Kimin Roh , Sun Kyung Kim, Tae Joon Park, In Cheol Jung Korea Institute of Geoscience and Mineral Resources, REPUBLIC OF KOREA

P09 ET25-2127-A	<i>Surface functionalization of graphene sheet with C₆₀ for improved electrode-electrolyte interface in lithium-ion batteries</i> Eva Štěpanovská , Giovanni Ceccio, Kazumasa Takahashi, Yuto Kondo, Barbara Fazio, Martin Kormunda, Josef Novák, Anna Macková Nuclear Physics Institute of the Czech Academy of Sciences, Czech Republic
P10 ET25-2121-A	<i>Data-driven Prediction of Optimal Precycling Temperature via Ion Pairing Analysis for Lithium-ion Batteries</i> Fu Lun Tan , Song Yuan, Xiaodong Chen, Xian Jun Loh Agency for Science, Technology and Research (A*STAR) / Nanyang Technological University (NTU), Singapore
P11 ET25-537-A	<i>Synthesis and characterization of polyimide oligomer prepared by chemical imidization using various diamines</i> Si-hoon Jang , Seul-ki Yoon, Tae-hyun Kim, No-hyung Park Korea Institute of Industrial Technology (KITECH), Korea
P12 ET25-571-A	<i>Synthesis of Modified Ti₃C₂T_x MXene@ZnO Composites for Energy Storage Devices</i> Chae Min Han , Kwang Se Lee Gyeongbuk National University, South Korea
P13 ET25-2186-A	<i>Dual Strategies for Electrochemical Performance Recovery in Spent Graphite: Thermal and Electrochemical Re-graphitization</i> JeongA Kim , Jungpil Kim, Junghoon Yang Korea Institute of Industrial Technology (KITECH), Republic of Korea
P14 ET25-559-A	<i>Fluorine-doped graphene as a 2D filler for polymer electrolytes enabling ultra-low-temperature all-solid-state lithium batteries</i> ZIWEI XIA , Tam Van Tran, Won Mook Choi University of Ulsan, Republic of Korea
P15 ET25-284-A	<i>Impact of Ag and Cu ion implantation on the structural and functional properties of perovskite solar cell layers</i> Josef Novák , Eva Štěpanovská, Petr Malinský, Vlastimil Mazánek Nuclear Physics Institute of the Czech Academy of Sciences, Czechia
P16 ET25-2169-A	<i>Unveiling the Degradation Mechanism and Regeneration Pathways of Spent Carbon Materials for Rechargeable Batteries</i> Junghoon Yang Korea Institute of Industrial Technology, Republic of Korea
P17 ET25-2250-A	<i>Transforming Biochar into High-Quality Graphite through Molten Metal Pool</i> Ziyi Shi , Yanghao Jin, Pär Göran Jönsson, Weihong Yang KTH Royal Institute of Technology, Sweden
P18 ET25-534-A	<i>Development of Multifunctional PDMS-filler Composites for Advanced Thermal Management and rheological Applications</i> SeongHoon Jo , SiHoon Jang, No-Hyung Park Korea Institute of Industrial Technology (KITECH), Korea

Session Group Photo & Best Presentation Award

Poster Session 3

November 22nd | 15:30-16:30 | 7F, 701~2

■ Materials Chemistry and Chemical Engineering

■ Chairperson: Assoc. Prof. Ramuel John Inductivo Tamargo, University of the Philippines Diliman, Philippines

***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 ET25-2124	<i>A Comparative Study on the Effectiveness of Silane Coupling Agent and Epoxidized Natural Rubber as Compatibilizers in Polybutylene Succinate/Rice Flour Biocomposites</i> Pornsri Sapsrithong , Apaipan Rattanapan, Thritima Sritapunya, Surakit Tuampoemsab King Mongkut's University of Technology North Bangkok, Thailand
P02 ET25-2298-A	<i>Sustainable Passive Radiative Cooling Using Biodegradable PLA-Bleached Pulp Films</i> Youngjae Yoo , Seunghyuk Hong Chung-Ang University, South Korea
P03 ET25-224	<i>Preparation of activated carbon from juvenile durian fruit by activating KMnO₄ for methylene blue adsorption</i> Pornsawan Assawasaengrat , Wasan Chokelarb, Woatthichai Narkrugs, and Pongsert Sriprom King Mongkut's Institute of Technology Ladkrabang, Thailand
P04 ET25-564-A	<i>Simulation-Based Evaluation and Optimization of the Hydrogen Reduction (HyREX) Process</i> Yoo Ri Kim , Jeong Cheol Lee, Sang Hwan Son, Dong Hwi Jeong University of Ulsan, Republic of Korea
P05 ET25-567-A	<i>Effect of structural distortion of Na₂CO₃-doped CaO sorbents on high-temperature CO₂ sorption behaviors</i> Yoo shin Kang , Syhe Kamran Haider, Chan Hyun Lee University of Ulsan, Republic of Korea
P06 ET25-274-A	<i>Transforming denim waste: super glue-enhanced composite materials</i> Christina Gioti, Angeliki Karakasidi , Dimitris Moschovas, Simeon Agathopoulos, Athanasios B Bourlinos, Michael A Karakassides University of Ioannina, Greece
P07 ET25-555-A	<i>Coke-Resistant XW₉Ni@Al Catalysts via Initial and Long-Term Dynamic Active-Site Transformations in DRM</i> Azam Jamsaz , Nhiem Pham-Ngoc, Anh Phuong Nguyen, Chao Song, Woo Eun Shin University of Ulsan, South Korea
P08 ET25-2175-A	<i>Catalyst Design on CNT growth in a Two-Step Thermocatalytic Process for CO₂ conversion</i> Eunchae Oh , Junghoon Yang, Jungpil Kim Korea Institute of Industrial Technology (KITECH), Republic of Korea

P09 ET25-273-A	<i>CO₂ methanation over Ni nanoparticles dispersed on CeO₂ supports: the effect of support synthesis method and the resulting nano-configurations</i> Catherin Drosou, Ersi Nikolaraki, Dimitris Gournis, Michael A Karakassides , Ioannis Yentekakis University of Ioannina, Greece
P10 ET25-552-A	<i>Catalytic Performance of Ni/Macroporous Al₂O₃ Catalysts in Bi-reforming of Methane: Reaction Conditions vs Coking Behavior</i> Anh Phuong Nguyen , Nhiem Pham-Ngoc, Jamsaz Azam, Chao Song, Woo Eun Shin University of Ulsan, South Korea
P11 ET25-286-A	<i>Development of Sustainable Sisal Fiber-Reinforced Roofing Sheets Using Bio-Resin and Gelcoat Coating</i> Mhusa Nicholas Joseph , Choi Jun-Young, Jennifer Kalanga, Ahn Sung-Hoon Seoul National University, South Korea
P12 ET25-565-A	<i>A Data-Driven Soft-Sensor Model for Predicting CO Levels in Furnaces Based on Machine Learning</i> Yun Gyu Lee , Hojun Song, Gregorius Rionugroho Harvianto, Dong Hwi Jeong University of Ulsan, South Korea
P13 ET25-542-A	<i>Study on the Pyrometallurgical and Electrolytic Separation Processes for the Recovery of Copper and Palladium from Waste Printed Circuit Boards</i> Sung Cheol Park, Yong Hwan Kim, Seong Ho Son Korea Institute of Industrial Technology, Republic of Korea
P14 ET25-572-A	<i>Employment of enzyme co-localization strategy between CadA and AcnA in recombinant Escherichia coli for the efficient itaconic acid production</i> Jong Uk Lee , Saranya Shanmugasundaram, Soon Ho Hong University of Ulsan, Republic of Korea
P15 ET25-235-A	<i>Analysis and experimental study of two-phase flow-based heat transfer by air bubbles in cooling channels</i> Sung Myung Lee, Sung Jung Kim, Myung Jin Choi, Yu Seok Seo, Hae Woon Choi, Jong Hyun Kim Keimyung University, South Korea
P16 ET25-553-A	<i>Pt Agglomeration Behavior over Pt/g-C₃N₄ Catalysts for Photocatalytic H₂ Evolution: Metal-Support Interaction with O-containing Functional Groups over g-C₃N₄</i> Chao Song , Anh Phuong Nguyen, Nhiem Pham-Ngoc, Azam Jamsaz, Woo Eun Shin University of Ulsan, Republic of Korea
P17 ET25-579	<i>Comparative Performance of Molecular Sieve- and Resin-Coated Ceramic Honeycomb Beds for Carbon Dioxide Adsorption</i> Shi-Cheng Huang, Shun Gao, Tsair-Wang Chung Chung Yuan Christian University, Taiwan
Session Group Photo & Best Presentation Award	

Poster Session 4

November 22nd | 16:45-17:45 | 7F, 701~2

■ Functional Materials and Biomedical Applications

■ **Chairperson: Assoc. Prof. Roshafima Rasit Ali, Universiti Teknologi Malaysia, Malaysia**

***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 ET25-238-A	<i>Structural and Magnetic Properties of Gd-Substituted M-type Ca-La-Co Hexaferrites Synthesized by Sol-Gel Auto-Combustion Method</i> Yu-Chen Wu , Chun-Rong Lin, Chien-Chih Chen, Zi-Peng Hong National Pingtung University, Taiwan
P02 ET25-2210-A	<i>Enhanced Magnetic Hyperthermia of Tunable FeO/Fe₃O₄ Core-Shell Nanoparticles and their Superclusters</i> Manuel Wendell , Luu Dan, Gili Mon Bryan, Brown Dakota, Jan Shah Qasim, Nguyen Minh Dang, Lee Supawitch Hoijang, Ramtin Yarinia, Viktor G. Hadjiev, T. Randall, Srikanth Hari, Phan Manh-Huong, Vega Marienette University of the Philippines Diliman, Philippines
P03 ET25-244-A	<i>Sodium-Induced Structural and Magnetic Modifications in Thulium Iron Garnet</i> Zi-Peng Hong , Chun-Rong Lin, Yu-Chen Wu, Chien-Chih Chen National Pingtung University, Taiwan
P04 ET25-252-A	<i>A Semi-Open Functional Acoustic Metamaterial for Broadband Sound Absorption</i> Guanghao Yang , Ziming Wu, Qianxi Fan, Yufei Liu Chongqing University, China
P05 ET25-247-A	<i>Effect of Fe/Ba Molar Ratio on Phase Composition and Magnetic Properties of M-type BaFe₁₂O₁₉ Synthesized by Gel-Sol Auto-Combustion Method</i> CHIEN-CHIH CHEN , Chun-Rong Lin, Yu-Chen Wu, Zi-Peng Hong National Pingtung University, Taiwan
P06 ET25-2134-A	<i>Thermal quenching and poling engineering strategy for enhancement of piezoelectricity in the lead-free BiFeO₃-BaTiO₃ ceramics</i> Jinhao Hu , Boping Zhang University of Science and Technology Beijing, China
P07 ET25-253-A	<i>Emergence of Anomalous and Topological Hall Effects in Magnetic Topological Insulator Mn₂BiSbTe₅</i> Ankush Saxena , Shiu-Ming Huang, Yu-Chung, Chen, I-Yu Huang, Mitch Chou National Cheng Kung University, Taiwan
P08 ET25-233-A	<i>Micromagnetic Analysis of Electrodeposited Cobalt Films on Copper</i> Chun-Rong Lin , Chien-Chih Chen, Yu-Chen Wu, Zi-Peng Hong National Pingtung University, Taiwan

P09 ET25-234-A	<i>Sensitive Electrochemical Sensing of Galectin-3 via a Dual Recognition Strategy</i> Rungtiva Poo-arporn , Phoomintara Longsompurana and Yingyot Poo-arporn King Mongkut's University of Technology Thonburi, Thailand
P10 ET25-262-A	<i>Au Single-Atom Nanozyme for Simultaneous Colorimetric and Electrochemical Detection of Mercury Ions</i> Xiaohui Zhu , Jiajing Zhang, Yaqin Han, Yufei Liu Chongqing University, China
P11 ET25-2286-A	<i>Precision Magnetogenetic Regulation of Iron Homeostasis with cIMagR-MSCs Improves Parkinson's Outcomes</i> Qing Ye , Jianfei Sun, Feiyan Lin, Xiaoli Mai Southeast University, China
P12 ET25-2179	<i>The Application of Polyether ether ketone (PEEK) Implants in Knee Surgery</i> Yaocong Fan , Li Fan National University of Singapore, Singapore
P13 ET25-250-A	<i>Polyamine-Derived Carbon Quantum Dots for On-Site Multimodal Fluorescence Sensing</i> Yaqin Han , Jiajing Zhang, Yufei Liu Chongqing University, China
P14 ET25-2290-A	<i>Macrophage-Membrane Encapsulated Microbubbles for Ultrasound Imaging and Targeted Drug Delivery of Tumors</i> Lin Cui , Fang Yang Southeast University, China
P15 ET25-2142-A	<i>Ultrathin Invisible and Imperceptible Ionic-conductive Epidermal Electrodes</i> Shujin Yu , Junqi Yi, Xiaodong Chen Nanyang Technological University, Singapore
P16 ET25-536-A	<i>Synthesis and Characterization of Organic-Inorganic Hybrid Polyimide Oligomers incorporating Amino-Functionalized POSS for Enhanced Thermal Stability</i> Seul-ki Yoon , Si-hoon Jang, Ji Ho Youk, No-Hyung Park Korea Institute of Industrial Technology (KITECH), Korea
P17 ET25-299	<i>Comparative Study of $MgFe_2O_4$ and $ZnFe_2O_4$ Nanoparticles Synthesized by Different Methods for Use in Magnetic Bioactive Glass for Hyperthermia Treatment</i> Thanaporn Boonchoo, Pannapat Promkrajang, Chonlathit Pitipoomsuksan, Wilaiwan Leenakul Rajamangala University of Technology Phra Nakhon, Thailand
P18 ET25-535-A	<i>Optimization of Laser-Patterned PI Nonwoven Sensors for NO_2 Gas</i> Yeongseok Seo , Yujin Lee, Sihoon Jang, Hyun-Woo Kim, No Hyung Park Korea Institute of Industrial Technology (KITECH), South Korea

Session Group Photo & Best Presentation Award

Session 1

November 22nd | 13:00-14:45 | 8F, 801

- **Biomaterials for Tissue Repair and Regenerative Medicine**
- **Chairperson: Dr. Adilah Marwa, University of Indonesia, Indonesia**

*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.

13:00-13:15	(ET25-221-A) <i>A collagen/silk fibroin/magnesium hydroxide multifunctional sponge with enhanced mechanical strength, rapid hemostasis, and antibacterial properties for promoting infectious wound healing</i> Jianwei Mao, Shaotang Xiong, Chuchao Zhou, Yanqing Yang, Qiang Yin Xiaogan Hospital Affiliated to Wuhan University of Science and Technology, China
13:15-13:30	(ET25-2106-A) <i>An Osteogenic Membrane based on Polycaprolactone with Chitosan and Magnesium ion for Bone Tissue Engineering</i> Atsadaporn Thangprasert, Panchita Aonpetch, Prapavarin Aekkachai, Sittichat Chukaew, Jirut Meesane, Pakorn Pasitsuparoad Prince of Songkla University, Thailand
13:30-13:45	(ET25-207-A) <i>3D printing haversian bone-mimetic scaffold with enhanced physicochemical, antibacterial, and osteogenic properties for infected bone repair</i> Wan Zhou, Xiangru Chen, Xin Liu, Zhiwei Sun, Zhi Zheng, Yanqing Yang, Chuchao Zhou Wuhan University of Science and Technology, China
13:45-14:00	(ET25-2328-A) <i>Multifunctional, photo-responsive and tissue-adhesive hydrogel for soft tissue repair</i> Feifei Zhou, Hongwei Ouyang Zhejiang University, China
14:00-14:15	(ET25-2253) <i>Surface characterization of titanium dental implant after long-term implantation</i> Eko Budiyo, Kusmono, Rini Dharmastiti, Maria Goreti Widiastuti Universitas Gadjah Mada, Indonesia
14:15-14:30	(ET25-290-A) <i>Preparation of Polyurethane (PU) Elastomer from Chemical upcycling Polylactic acid (PLA) postconsumer waste for Biomedical application</i> Chorney Eang, Bunthoeun Nim, Pakorn Opaprakasit Royal University of Phnom Penh, Cambodia
14:30-14:45	(ET25-2263) <i>Characterization of Pumpkin (Curcubita moschata) Peel Cellulose as Compatible Excipient in Product Formulation</i> Ronnel Caco Garcia, Josafat Espanol Cordial, Allieyah May Dumanil Molina, Michaela Mae Gramonte Mojica, Justine Calag Tolosa, Frederick Magno Francisco Mapúa Malayan Colleges Laguna, Philippines

Session Group Photo & Best Presentation Award

Session 2

November 22nd | 13:00-14:30 | 8F, 802

- **Preparation, Processing, and Microstructure Evolution of Metallic Materials**
- **Chairperson: Prof. Eden May Dela Pena, University of the Philippines, Philippines**

*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.

13:00-13:15	(ET25-2168-A) <i>Effect of Heat Treatment on the Microstructure and Mechanical Properties of Ti6321 Alloy</i> Dapeng Wang , Jixiang Zhang, Yunxiang Tong Harbin Engineering University, China
13:15-13:30	(ET25-2295-A) <i>Influence of Compaction Parameters on AZ80 Magnesium Chips Containing Residual Lubricants for Solid-State Recycling</i> Alberto Murillo-Marrodan , Taiki Nakata University of Deusto, Spain
13:30-13:45	(ET25-294-A) <i>Investigating Microstrain and Dislocation Evolution during GPII Zone Dissolution in Al-Zn-Mg-Cu Alloy via In Situ HRTEM</i> Tianshu Zhao , Hongyun Luo Beihang University, China
13:45-14:00	(ET25-2116-A) <i>Preparation of Mg-Li-Ce-Y Alloy in LiCl KCl molten salt</i> Xudong Wang , Mei Li, Rugeng Liu, Wei Han Harbin Engineering University, China
14:00-14:15	(ET25-2304-A) <i>Near-Solidus Forming of Austenitic Stainless Steels: Towards Fully Integrated Forming Routes without Post-Annealing Treatments</i> Alberto Murillo-Marrodan , John Damilola-Sunday, Phillip Krawec, Eduardo Garcia, Carl Slater University of Deusto, Spain
14:15-14:30	(ET25-2339-A) <i>Study on the Dynamic Strain Aging behavior of RE-containing Mg alloys</i> Tong Wang , Wenjie Yang, Can Wang Northeastern University, China

Session Group Photo & Best Presentation Award

Session 3

November 22nd | 13:00-14:15 | 8F, 804

- **Joining of Dissimilar Materials and Precision Manufacturing**
- **Chairperson: Dr. Taili Yang, Harbin Institute of Technology, China**

*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.

13:00-13:15	(ET25-2191) <i>Enhancing TIG Welding Efficiency through Systematic Time Study and Performance Rating</i> Mohd Faris Afiq Mohd Azhar, Anis Farhana Abu Bakar , Saliza Azlina Osman, Tay Sin Kiat and Shahrul Azmir Osman Universiti Tun Hussein Onn Malaysia, Malaysia
13:15-13:30	(ET25-2235-A) <i>Thermal Corrosion-Assisted Brazing: A Novel Technique for Joining SiO₂/SiO₂ Composites</i> Zhenyu Ye , Junlei Qi Harbin Institute of Technology, China
13:30-13:45	(ET25-202) <i>Elimination of Bond Pad Crack through Application of Initial Force via Force Profiling on Sensitive Bond Pads</i> Glenn Carlo Miranda Mapúa University, Philippines
13:45-14:00	(ET25-2216) <i>Comparative Study of YOLOv5, YOLOv8, and YOLOv11 for Dust Detection in Voice Coil Motor Assembly</i> Kreetiwat Chaibasin , Veena Phunpeng, Sorada Khaengkarn, Kitsana Khodcharad and Tanporn Hengmeechai Suranaree University of Technology, Thailand
14:00-14:15	(ET25-2248-A) <i>Preparation of three-dimensional meshed MgAl₂O₄ composite interlayer by Joule thermal shock and mechanism of brazing SiC and Al/SiC composites</i> Peixin Li , Yaotian Yan, Junlei Qi Harbin Institute of Technology, China

Session Group Photo & Best Presentation Award

Session 4

November 22nd | 13:00-15:00 | 8F, 805

- **Waste Valorization and Engineering Material Development**
- **Chairperson: Asst. Prof. Edgar S. Magas, Mapua Malayan Colleges Laguna, Philippines**

*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.

13:00-13:15	(ET25-2251-A) <i>From Palm Biomass Waste to Functional Materials: A Circular Economy Pathway for Environmental Remediation in Saudi Arabia</i> Mohanad El-Harbawi , Chun-Yang Yin King Saud University, Saudi Arabia
13:15-13:30	(ET25-2227-A) <i>Waste-derived Carbon Nano Onions for the Removal of Organic Dye from Wastewater and Phytotoxicity Studies</i> Diwakar Patel , Kumud Malika Tripathi, Ravi Kumar Sonwani Indian Institute of Petroleum and Energy, Visakhapatnam, India
13:30-13:45	(ET25-236) <i>Preparation of Vegetable Waste-Derived Paper Incorporated with Activated Carbon for Delay Mango Ripening and Its Application</i> Pongsert Sriprom , Phaewa Thongkham, Jurairat Taweessukyingjaroen, Apiruk Somphan, Kanjana Manamoongmongkol, Pornsawan Assawaseangrat King Mongkut's Institute of Technology Ladkrabang, Thailand
13:45-14:00	(ET25-2348) <i>Influence of Used Tea Powders on the Microstructure and Mechanical Properties of Recycled Aluminium 5083</i> Intan Syafiqah Isma Harisham , Idham Shahirudin Mohd Ali, Shahrul Azmir Osman, Tay Sin Kiat, Saliza Azlina Osman Universiti Tun Hussein Onn Malaysia, Malaysia
14:00-14:15	(ET25-293-A) <i>Synergistic CECS-ZnO Coated Cotton Textiles for Healthcare Filtration Applications</i> Mutiara Ayu , Punnama Siriphannon, and Pathavuth Monvisade King Mongkut's Institute Technology Ladkrabang, Thailand
14:15-14:30	(ET25-2115-A) <i>Electrodeposition of UO₂ from Molten Salt via Liquid Bi Electrode</i> Jiayi chen , Wei Han, Rugeng Liu, Mei Li Harbin Engineering University, China
14:30-14:45	(ET25-2350) <i>Biodegradable Properties Of PVA/AKD Incorporated With ZnO Nanoparticles For Food Packaging Application</i> FARAH Hanani Zulkifli , TONG Hui Shan, and MATSUMURA Kazuaki Universiti Malaysia Pahang Al-Sultan Abdullah, Malaysia
14:45-15:00	(ET25-2249) <i>Modular integration of 3D-printed solar-driven interfacial evaporation system for enhanced water purification efficiency</i> Andrea Shane M. Torres, Gilbert P. Lagman, Trisha Mariane G. Manalaysay, Joshua D. De Villa, Mariele T. Gamboa, Arman Ray N. Nisay, Bonifacio B. Tamparong Jr., Leonard D. Tijing, John Ryan C. Dizon Bataan Peninsula State University, Philippines

Session Group Photo & Best Presentation Award

Session 5

November 22nd | 15:15-16:45 | 8F, 801

- Design and Structural Performance of Advanced Composite Materials
- Chairperson: Dr. Tunsuda Suparanon, Prince of Songkla University, Thailand

*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.

15:15-15:30	(ET25-E02) <i>Numerical simulation of the twin-roll casting of Mg/Al clad strips</i> Feng Gengyan, Hotaka Tozuka, Hisaki Watari Tokyo Denki University, Japan
15:30-15:45	(ET25-568-A) <i>Engineering Phosphorus Doping on Graphitic Carbon Nitride for Advanced Fire-Retardant Epoxy Composite</i> Le Thi Chung , Jin Suk Chung, Thanh Truong Dang University of Ulsan, Republic of Korea
15:45-16:00	(ET25-2219) <i>Green Sandwich Composite Structures for UAV Wings: Experimental Validation and Numerical Simulation</i> Kitsana Khodcharad , Veena Phunpeng, Watcharapong Patangtalo, Kreetiwat Chaiyasin, and Wipada Boransan Suranaree University of Technology, Thailand
16:00-16:15	(ET25-2161-A) <i>Active Chitosan/Polyvinyl alcohol Nanocomposite Film Incorporated with Nanocellulose from Rambutan Peel and Rambutan Peel Extract</i> Pimjai Suwannawong , Anan Athipornchai, Karaked Tedsree, Thanida Trakulsujaritchok Burapha University, Thailand
16:15-16:30	(ET25-2187-A) <i>High-Temperature Fatigue Performance of Pre-Treated 2.5D SiCf/SiC Composites</i> Zhaoliang Guo , Hongyun Luo, Jie Cui, Ziyu Ba, Runze Wang Beihang University, China
16:30-16:45	(ET25-2335-A) <i>Seismic Behavior of a Hybrid Structural Steel-Reinforced Concrete Coupled Wall Building: From Numerical Prediction to Shaking-Table Test</i> Jupiter Lienardo , Fu-Pei Hsiao, Hsuan-Teh Hu, Chia-Chen Lin, Pu-Wen Weng, Yanuar Haryanto, Laurencius Nugroho, Santiago Pujol National Cheng Kung University, Taiwan

Session Group Photo & Best Presentation Award

Session 6

November 22nd | 15:15-17:15 | 8F, 802

- **Catalyst Design and Catalytic Reaction Mechanism**
- **Chairperson: Prof. Jin Suk Chung, University of Ulsan, Republic of 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.

15:15-15:30	(ET25-563-A) <i>Reconstructed Structures of Ni-Cu Metal-Organic Frameworks for Efficient Ammonia Oxidation Reaction</i> Pragyan Sharma , Jin Suk Chung University of Ulsan, Republic of Korea
15:30-15:45	(ET25-556-A) <i>Atomic Fe and Fe₃C Dual Active Sites Embedded in CNTs from Modified Fe-ZIF-8</i> Duc-Viet Nguyen , Nguyen Trinh Phuong Mai, Nam Le, Aniruddha Jaiswal, Jungwon Park and Seung Hyun Hur University of Ulsan, Republic of Korea
15:45-16:00	(ET25-2130-A) <i>Electrochemical Ammonia Oxidation Using FeCoNiCuSn High-Entropy Catalyst Synthesized in Various Solvents</i> Minseo Jeon , Chanmin Jo, Gyoung Hwa Jeong, Dae-kyo Oh, Sangmin Ha, Young-Hoon Yun, Uk Sim Korea Institute of Energy Technology, Republic of Korea
16:00-16:15	(ET25-577-A) <i>Unveiling a cooperation mechanism of Co nano cluster/NiSe₂ heterostructure for industrial-level Water splitting: Role of Janus effect</i> Le Tri Trung , Tran Van Tam, Choi Won Mook University of Ulsan, Republic of Korea
16:15-16:30	(ET25-554-A) <i>Coke Formation Behavior on Various Ni Active Sites over Ni/Al₂O₃ Catalysts for Dry Reforming of Methane</i> Nhiem Pham-Ngoc , Anh Phuong Nguyen, Jamsaz Azam, Chao Song, Woo Eun Shin, University of Ulsan, Republic of Korea
16:30-16:45	(ET25-2154-A) <i>Machine Learning-Assisted Activating lattice oxygen in Co₃O₄-based Catalyst for robust and durable water oxidation</i> Yaotian Yan , Junlei Qi Harbin Institute of Technology, China
16:45-17:00	(ET25-560-A) <i>Thermal Activation Unlocks Active Sites in ZIF-L-Derived Cu Catalysts for CO₂RR</i> Trinh Phuong Mai Nguyen , Viet Duc Nguyen, Nam Le, Jaiswal Aniruddha, Jungwon Park, Huynh Seung Hur University of Ulsan, Republic of Korea
17:00-17:15	(ET25-551-A) <i>Insights into Ptn Clusters Anchored on Ti-Based MXenes for Hydrogen Release from Methylcyclohexane</i> Thi Bich Tram Bui , K. S. S. V. Prasad Reddy, Sung Gu Kang University of Ulsan, Republic of Korea

Session Group Photo & Best Presentation Award

Session 7

November 22nd | 15:15-17:00 | 8F, 804

- Additive Manufacturing and Advanced Processing
- Chairperson: Dr. Glenn Carlo Miranda, Mapúa University, Philippines

*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.

15:15-15:30	(ET25-2148-A) <i>Tailoring the Piezoelectric Response of PVDF via MoS₂ Integration and Temperature-Controlled 3D Printing</i> Miguel Serrano-Romero, Yevgen Prokhorov, Gabriel Luna-Bárcenas, Ana Laura Martínez-Hernández, Daniel Bahena-Urbe, Jaime Santoyo-Salazar, Verónica Saucedo-Rivalcoba, Carlos Velasco-Santos Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional Unidad Zacatenco, Mexico
15:30-15:45	(ET25-2194-A) <i>Influence of Chamber and Bed Temperatures on Mechanical Properties of FDM-Printed Parts: SEM Evidence and Shrinkage Behavior</i> Wipada Boransan, Veena Phunpeng, Kitsana Khodcharad, Avirut Chinkulkijniwat, Kreetiwat Chaityasin Suranaree University of Technology, Thailand
15:45-16:00	(ET25-263-A) <i>New Methods to Determine the Processability Window of Material Extrusion-Based Additive Manufacturing of Semi-Crystalline Polymers: Towards Optimization</i> Trystan Domenech, Pierre Ovlaque, Yves Trolez, Dominique Olivier, Benjamin Bujeau, Sébastien Charlon, Jérémie Soulestin Université de Reims Champagne-Ardenne, France
16:00-16:15	(ET25-2172-A) <i>Microstructure and properties of TiC/Ti6Al4V gradient composites by laser melting deposition</i> Yuzhou Zeng, Jiandong Wang, Fengchun Jiang, Yunxiang Tong Harbin Engineering University, China
16:15-16:30	(ET25-511-A) <i>Evaluation of a novel high-γ'-content nickel-based alloy with yttrium addition for additive manufacturing through laser glazing</i> Yunting Li, Jun Wang, Maodong Kang Shanghai Jiao Tong University, China
16:30-16:45	(ET25-2105) <i>Modeling and investigation of 3D printing parameters on the melt flow behavior of polylactic acid</i> Peeraphat Suttipong, Chuanchom Aumnate, Jitrawee Suk-em, Jennarong Tungtrongpairoj King Mongkut's University of Technology North Bangkok, Thailand
16:45-17:00	(ET25-2171-A) <i>Numerical Investigation of Powder Bed Packing and Thermal Behavior using CFD-DEM</i> Yeldar Otyynshiyev, Zhazira Berkinova, Yi Nie, Christos Spitas, Boris Golman Nazarbayev University, Kazakhstan

Session Group Photo & Best Presentation Award

Session 8

November 22nd | 15:15-17:00 | 8F, 805

- Chemical Process Engineering and Molecular Synthesis
- Chairperson: Asst. Prof. Pakorn Pasitsuparoad, Prince of Songkla University, Thailand

*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.

15:15-15:30	(ET25-506-A) <i>Dynamic modeling and control optimization of ex-situ biological methanation in Power-to-Gas systems under variable hydrogen loading</i> Leonardo Colelli , Nicola Verdone, Claudia Bassano, Giorgio Vilardi Sapienza University of Rome, Italy
15:30-15:45	(ET25-548-A) <i>Radioactive Particle Tracking (RPT) based hydrodynamics investigation in slurry phase reactor for residue hydrocracking</i> Praneet Mishra , Ashutosh Yadav Indian Institute of Technology Jammu, J&K, India
15:45-16:00	(ET25-515-A) <i>Comparative Analysis of Iron Production via Direct Reduction: Use of Natural Gas, Grey Methanol, and Green Methanol</i> Edoardo Rossi , Giorgio Vilardi Sapienza University of Rome, Italy
16:00-16:15	(ET25-513-A) <i>Naphthalic anhydride-Akylamine Derivatives: Synthesis, Group-State Characterization, and DFT Studies</i> Sumita Boonnab , Charoensak Laongam Nakhon Ratchasima Rajabhat University, Thailand
16:15-16:30	(ET25-2129) <i>Palladium-catalyzed and microwave-assisted Suzuki-Miyaura cross-coupling to access carbazole intermediate using CyreneTM as a neoteric bio-based solvent</i> Jose Gabriel Hipolito Escorial , Jared Christian Navarro Español, Erika Mae Vicente Naquila, Ramuel John Inductivo Tamargo University of the Philippines Diliman, Philippines
16:30-16:45	(ET25-507-A) <i>Advanced Numerical Modeling of High-Temperature Waste Gasification: Development of a One-Dimensional Dynamic Model</i> Valentina Segneri , Alessia Borgogna, Nicola Verdone, Giorgio Vilardi Sapienza University of Rome, Italy
16:45-17:00	(ET25-518-A) <i>Synthesis of Ligand-Engineered Zn-MOF-74 with Abundant Coordinatively Unsaturated Sites and Their Application in Cyanosilylation of Benzaldehyde</i> Gipyo Kim , Byungkwan Lim Sungkyunkwan University, South Korea

Session Group Photo & Best Presentation Award

Session 9

November 23rd | 09:00-11:00 | 7F, 701

- **Environmental Catalysis, Photocatalysis, and Pollutant Degradation**
- **Chairperson: Asst. Prof. Eden Sumalapao Erasga, Mapua Malayan Colleges Laguna, Philippines**

*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.

09:00-09:15	(ET25-2256-A) <i>Magnetic Cellulose Microfiber Membranes Derived from Sugarcane Bagasse for Efficient Rhodamine B Degradation</i> Eden May Dela Pena , Joanne Rafael University of the Philippines, Philippines
09:15-09:30	(ET25-2273-A) <i>Hydroxyl-modified g-C₃N₄/Al₂O₃ heterojunction connected with oxygen bridge for boosting photocatalytic H₂O₂ production</i> Junnan Qu , Xinli Guo Southeast University, China
09:30-09:45	(ET25-2145) <i>Cu/Mn Oxidation Catalyst Integration into Recycled Carbon Fiber-based Filter for Diesel Soot Emission Control</i> Ramuel John Inductivo Tamargo , Apraille Hope Panit Dumrigue, Katrina Nadine Q. Cada, Roimela D. Carcer, Alea Angela M. Serrano University of the Philippines Diliman, Philippines
09:45-10:00	(ET25-2279-A) <i>Shock-wave-Induced Structural, Electronic, and Morphological investigations in Bismuth oxyiodide (BiOI): Toward Environmental Remediation Applications</i> Sivaprakash Paramasivam , Martin Britto Dhas S. A., Ikhyun Kim Keimyung University, Republic of Korea
10:00-10:15	(ET25-2188-A) <i>Bio-Assisted Synthesis of Nano-Co_{0.5}Zn_{0.5} Catalyst for Efficient Degradation of Quinolone Antibiotics via Persulfate Activation</i> Wenjing Liu Agro-Environmental Protection Institute Ministry of Agriculture and Rural Affairs, China
10:15-10:30	(ET25-7070-A) <i>Display of cobalt-specific peptide in recombinant bacteria and its application on the cobalt-contaminated wastewater treatment</i> Saranya Shanmugasundaram , Jong Uk Lee, Soon Ho Hong University of Ulsan, Republic of Korea
10:30-10:45	(ET25-2104) <i>Comparative Photocatalytic Performance of Pullulan-Assisted Copper Oxide, Zinc Oxide, and Their Composites for Methylene Blue Degradation</i> Eleen Dayana Mohamed Isa , Yu Lyn Tang, Nurfatehah Wahyuni Che Jusoh Universiti Teknologi Malaysia, Malaysia
10:45-11:00	(ET25-547-A) <i>Stabilization of transition metal hydroxides for photocatalytic applications</i> Rossella Greco University of Oulu, Finland

Session Group Photo & Best Presentation Award

Session 10

November 23rd | 09:00-10:45 | 7F, 702

- **Electrocatalysis for Water Splitting and Green Hydrogen Production**
- **Chairperson: Dr. Zatil Izzah binti Ahmad Tarmizi, Universiti Teknologi Malaysia, Malaysia**

*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.

09:00-09:15	(ET25-2136-A) <i>Active role of ZrO_{2-x} support to the electrocatalytic performance in hydrogen evolution reaction</i> Jonghwan Park , Dongmok Whang Sungkyunkwan University, Republic of Korea
09:15-09:30	(ET25-2237-A) <i>Significantly enhanced HER performance of MoO₂ in alkaline seawater through a Ni and C dual co-doping strategy</i> Ruonan Liu , Xiaohang Zheng Harbin Institute of Technology, China
09:30-09:45	(ET25-576-A) <i>Ru-doped WO₃/NiWO₄ cubic-like morphology as a binder-free electrode for bifunctional hydrogen and oxygen evolution reactions</i> Sanjay Kumar Arasumani , Won Mook Choi University of Ulsan, Republic of Korea
09:45-10:00	(ET25-2238-A) <i>Self-supported N-doped amorphous C layers encapsulated Mo₂C nanocrystals for efficient alkaline seawater hydrogen evolution</i> Xiaohang Zheng, Ruonan Liu Harbin Institute of Technology, China
10:00-10:15	(ET25-264-A) <i>Versatile role of oxygen rich micropore sites for electron structure engineering of supported Ru clusters for robust hydrogen evolution reaction via facile spray drying method</i> Hyuck Gu Choi , Ui Young Lee, Jiwon Kim, Mangyu Hur, Dae Ho Yoon Sungkyunkwan University, Republic of Korea
10:15-10:30	(ET25-2234-A) <i>Engineering Twins within Lattice-Matched Co/CoO Heterostructure Enables Efficient Hydrogen Evolution Reactions</i> Taili Yang , Yaotian Yan, Junlei Qi Harbin Institute of Technology, China
10:30-10:45	(ET25-2189-A) <i>Exploring Synergy: Pd/HyMn_{0.8}Co_{0.2}O₂ Nanocomposite for enhanced Overall Water Splitting towards Sustainable Green Hydrogen Production</i> Phulladweepa Patra , Somnath Ghosh, Sourav Laha Indian Institute of Petroleum and Energy, India

Session Group Photo & Best Presentation Award

Session 11

November 23rd | 09:00-11:00 | 8F, 804

- **Glass and Ceramic Materials**
- **Chairperson: Dr. Ajay Tiwari, 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.

09:00-09:15	(ET25-267-A) <i>Impact of Heat Treatment on Optical Properties of Tellurite Glass Containing Bimetallic Nanoparticles</i> Auni Mardhiah Machinin , Asmahani Awang, Chee Fuei Pien, Shirley Arvilla Andrew Universiti Malaysia Sabah, Malaysia
09:15-09:30	(ET25-2151) <i>Low-Temperature Firing of Clay Tiles Incorporating Waste Glass, Sediment Soil, Volcanic Soil, and Local Illite Clay</i> Chonlathit Pitipoomsuksan , Witsanu Loetchantharangkun, Wilaiwan Leenakul and Ubolrat Wangrakdiskul Rajamangala University of Technology Phra Nakhon, Thailand
09:30-09:45	(ET25-255-A) <i>Investigation of Photoluminescence and Scintillation Properties in Eu³⁺-Doped Silico-Tellurite Glass Matrices</i> Winut Wongwan , Patarawagee Yasaka, Kitipun Boonin and Jakrapong Kaewkhao Nakhon Pathom Rajabhat University, Thailand
09:45-10:00	(ET25-2264) <i>Eco-Friendly Non-Fired Tiles by Utilizing Waste Glass and Limestone Dust</i> Witsanu Loetchantharangkun , Chonlathit Pitipoomsuksan, Purinut Maingam and Ubolrat Wangrakdiskul King Mongkut's University of Technology North Bangkok, Thailand
10:00-10:15	(ET25-2346-A) <i>Development of High-Emissivity Ceramics Using Rice Husk Ash and Their Application to Thermal Storage Media</i> Hideki KITA , Xin Zhou Harbin Engineering University, China; Heat Piece Co., Ltd., Japan
10:15-10:30	(ET25-256-A) <i>Enhanced Optical Gain in Nd-Doped Borosilicate Glass with Gold Nanoparticles for Optical Amplifiers</i> Pornnapha Mangthong , Nattapon Srisittipokakun, Raja Rajaramakrishna, Jakrapong Kaewkhao Nakhon Pathom Rajabhat University, Thailand
10:30-10:45	(ET25-242) <i>Eu (II) Incorporation in Calcite: Phase Transformation and Photoluminescence</i> Jonathan B. Junio , Marlon T. Conato, Arnold M. Guloy, Candy C. Mercado University of the Philippines Diliman, Philippines
10:45-11:00	(ET25-276-A) <i>Tailoring Relaxor Antiferroelectric Response in AgNbO₃ Ceramics through Li/Nd/Ta Co-doping for High-Efficiency Energy Storage</i> Seonhwa Park , Yuho Min Kyungpook National University, Republic of Korea

Session Group Photo & Best Presentation Award

Session 12

November 23rd | 09:00-11:00 | 8F, 805

- Design and Performance Tailoring of Functional Materials and Structures
- Chairperson: Dr. Xianda Zhang, Harbin Institute of Technology, China

*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.

09:00-09:15	(ET25-2110) <i>Compressive Response of Smart Mg-NiTi Interpenetrating Phase Composites Comprising Functionally Graded Schwarz-P Surfaces: A Numerical Study</i> Shahzaib Ilyas , Mohamad Mustafa Khalil, Wael Zaki, Marwan El-Rich Khalifa University of Science and Technology, United Arab Emirates
09:15-09:30	(ET25-2334-A) <i>Etching-Spraying Fabrication of Superhydrophobic Cu Surfaces Integrating Excellent Corrosion Resistance, Self-cleaning, Stability and Self-Healing</i> Hang You , Yi Peng, Ting Li, Zhengwen Zhang Guizhou University, China
09:30-09:45	(ET25-2232-A) <i>Expediting Photo-charging of Semiconductors through a Bipolar Charge Storage Junction for Responsive Dark Photocatalysis</i> Bingzhen Yan , Qiushi Ruan, Shiqi Wang, Lingqiao Kong, Peigen Zhang, Hui Wang, Zhengming Sun Southeast University, China
09:45-10:00	(ET25-243) <i>Enhancing Energy Harvesting from Low-Frequency Vibrations via Topology Optimization of Bimorph PVDF Cantilevers</i> Patricia Aguilar, Louise Rayos Del Sol, Candy Mercado University of the Philippines, Philippines
10:00-10:15	(ET25-546) <i>Influence of Interphase on Piezoelectric Composites with Negative-stiffness Inclusions</i> Khin Lae Lae Oo , Yasothorn Sapsathiarn, Yun-Che Wang Mahidol University, Thailand
10:15-10:30	(ET25-2137-A) <i>Multifunctional Nanocrystalline hBN Films Combining Flexibility, Thermal Stability, and High Transparency</i> Sang Duck Park , Sejin Nam, Eunkyung Lee, Dongmok Whang Sungkyunkwan University, Republic of Korea
10:30-10:45	(ET25-2278-A) <i>Reversible Phase Transitions in Telluride Compounds under Acoustic Shock Waves: Experimental Insights</i> Martin Britto Dhas Sathiyadhas Amalapushpam , Oviya S, Irine Maria Bincy F, Ikhyun Kim Keimyung University, Republic of Korea
10:45-11:00	(ET25-277-A) <i>Efficient Glycolytic Depolymerization of PET Using Surface-Modified CoFe₂O₄@CaO Catalysts for Enhanced BHET Recovery</i> Chanyeong Lee , Seonhwa Park, Yuho Min Kyungpook National University, Republic of Korea

Session Group Photo & Best Presentation Award

Session 13

November 23rd | 09:00-10:30 | 8F, 806

- **Frontiers in Carbon-based Nanomaterials: From Synthesis to Applications**
- **Chairperson: Asst. Prof. Kwang Se Lee, Gyeongbuk National 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.

09:00-09:15	(ET25-265-A) <i>Synthesis, characterization and simulation of up conversion epoxy – graphene nanocomposites</i> Jevet Emiliano Damixi Lopez-Campos, Gonzalo Ramírez-García, Ma. Concepción Arenas-Aroccena, Jose Reinoso-Cuevas, Genoveva Hernández-Padrón Universidad Nacional Autonoma de Mexico, Mexico
09:15-09:30	(ET25-2313-A) <i>Lightweight and Recyclable Polyamide Elastomer/Carbon Nanotube Foams for High-Performance Electromagnetic Interference Shielding Applications</i> Chia-Hsing Lin, Chia-Wei Lee, Lyu-Ying Wang and Yi-Huan Lee National Taipei University of Technology, Taiwan
09:30-09:45	(ET25-2139-A) <i>Deciphering Charge Transport in Graphene FETs with Grain Boundaries via Equivalent Circuit Modeling</i> Taejun Gu, Eun Kyung Lee, Dongmok Whang, Byoung Lyong Choi Sung Kyun Kwan University, Republic of Korea
09:45-10:00	(ET25-259-A) <i>Structural and Chemical Modifications of Graphene Oxide Thin Films Effect From Electron Beam Irradiation</i> Nur Syafiqah binti Md Nasir, Norsakinah Johrin, Fuei Pien Chee, Pak Yan Moh, Megat Muhammad Ikhsan bin Megat Hasnan, Bablu Kumar Ghosh, Jackson Hian Wui Chang Universiti Malaysia Sabah, Malaysia
10:00-10:15	(ET25-2222-A) <i>Optimized Atomic-Level Bonding at SiC/Graphene Heterointerface for Enhanced Thermal Conductivity</i> Yihong Liu, Yaotian Yan, Meng Liu, Zhenyu Ye, Peixin Li, Jiping Chen, Chun Li, Xiaoqing Si, Jian Cao, Junlei Qi Harbin Institute of Technology, China
10:15-10:30	(ET25-2174-A) <i>Design of a Tandem Process for CNT Synthesis from Greenhouse Gases: Overcoming Gas composition limitations of Direct process</i> Jaewon Jang, Junghoon Yang, Jungpil Kim Korea Institute of Industrial Technology (KITECH), Republic of Korea

Session Group Photo & Best Presentation Award

Session 14

November 23rd | 13:00-14:45 | 7F, 701

- Porous Materials and Membrane Separation Technology
- Chairperson: Dr. Eleen Dayana Mohamed Isa, Universiti Teknologi Malaysia, Malaysia

*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.

13:00-13:15	(ET25-504-A) <i>Development of Novel Solvometallurgical Systems, using Deep Eutectic Solvents and Ion Exchange resins in the extraction of critical metals from catalytic waste</i> Victoria R. Shields , Thomas J Robshaw, Oliver Murray, Jordan Miller, Joan Cordiner, Mark D. Ogden Canadian Nuclear Laboratories, Canada
13:15-13:30	(ET25-2180) <i>Synthesis and Performance Evaluation of Chitosan-PEG-Cellulose Acetate Nanofiltration Membrane for Calcium Removal in Groundwater</i> Eden Sumalapao Erasga , Diana P. Tolentino, Jayvee C. Valenzuela, Renzo D. Veyra Mapua Malayan Colleges Laguna, Philippines
13:30-13:45	(ET25-524-A) <i>In-situ construction of UiO-66 on bacterial cellulose membranes for enhanced CO₂ separation</i> Nongnapat Budsrijaoen , Bhumini Than-ardna, Hathaikarn Manuspiya Chulalongkorn University, Thailand
13:45-14:00	(ET25-512-A) <i>Liquid-Liquid Extraction (LLE) and Mesoporous Material MCM-41 as Solid Phase Extraction (SPE) Sorbent Combined with High Performance Liquid Chromatography (HPLC) for The Analysis of Oxolinic Acid Residue in Shrimp</i> Maliwan Subsadsana , Suriya Homkun, Bunpot Klinpratoom, Sira Sansuk Nakhon Ratchasima Rajabhat University, Thailand
14:00-14:15	(ET25-296-A) <i>Influence of Formulation and Processing Parameters on the Properties of Seaweed-Based Foams</i> Virginia Martin Torrejon , Lorna Anguilano Brunel University of London, United Kingdom
14:15-14:30	(ET25-505-A) <i>Theory and simulations of branched gels</i> Filip Uhlik , Oleg V. Borisov, Ekaterina B. Zhulina Charles University, Czech Republic
14:30-14:45	(ET25-2242) <i>Fabrication of Eggshell Membrane-templated CuO-ZnO Nanocomposite for Microbial Desalination Cell (MDC)</i> Edgar Santillan Magas , Ronald Allan de los Reyes, Gustav Euael Trovela, Sheila Marie Repunte Mapua Malayan Colleges Laguna, Philippines

Session Group Photo & Best Presentation Award

Session 15

November 23rd | 13:00-14:45 | 7F, 702

- **Bio-based and Biodegradable Polymer Materials**
- **Chairperson: Asst. Prof. Trystan Domenech, Université de Reims Champagne-Ardenne, France**

*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.

13:00-13:15	(ET25-271-A) <i>Fabrication of green polylactide/polybutylene adipate-co-terephthalate blend foams by using environmentally friendly bowing agent</i> Tunsuda Suparanon , Worasak Phetwarotai Prince of Songkla University, Thailand
13:15-13:30	(ET25-2108) <i>Development of Functional Fish Gelatin-Based Biomaterial Films Reinforced with Astaxanthin-Rich Oil Extracted from Penaeus monodon Byproducts via Green NADES-Ultrasonication</i> DANIEL TUA PURBA , Pichayada Somboon King Mongkut's Institute of Technology Ladkrabang, Thailand
13:30-13:45	(ET25-2306-A) <i>A Self-Healable and Biodegradable Polymer Network System for Electromagnetic Interference Shielding</i> Lyu-Ying Wang , Chin-Hsien Chiang, Chun-Chieh Chueh, You-Rong Lin, Chia-Hsing Lin, Chia-Wei Lee, Yi-Huan Lee National Taipei University of Technology, Taiwan
13:45-14:00	(ET25-270-A) <i>PA11/PLA/Lignin bio-sourced ternary blends: Effect of lignin on morphological, rheological, and antioxidant properties</i> Bao Anh HUYNH , Trystan DOMENECH, Françoise BERZIN INRAE, UMR Fractionation of AgroResources and Environment, France
14:00-14:15	(ET25-291-A) <i>Chemical Recycling of Polylactide by employing Transesterification with long-chain diols in a Microwave reactor</i> Bunthoeun Nim , Chorney Eang, Pakorn Opaprakasit Royal University of Phnom Penh, Cambodia
14:15-14:30	(ET25-279-A) <i>Ultrasound-assisted complexation of polyphenols with starches: development of functional materials with enhanced digestive modulation</i> SANDRA KUSUMAWARDANI , NAPHATRAPI LUANGSAKUL King Mongkut's Institute Technology Ladkrabang, Thailand
14:30-14:45	(ET25-516-A) <i>Development of Bio-Based Chitosan and Ethyl Cellulose Coatings for Paper-based Packaging Applications</i> Oraya Sraphaengnoi , Lunjakorn Amornkitbamrung, Sarawut Rimdusit Chulalongkorn University, Thailand

Session Group Photo & Best Presentation Award

Session 16

November 23rd | 13:00-14:45 | 8F, 804

- Energy Storage Materials and Systems
- Chairperson: Dr. Sivaprakash Paramasivam, Keimyung University, Republic of 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.

13:00-13:15	(ET25-2240-A) <i>Ti₂SnC MAX phase with in-situ generated Sn nanoparticles for lithium-ion storage</i> Jingwen Tang , Wei Zheng, Hanning Zhang, Peigen Zhang, Jianxiang Ding, Congyuan Zeng, Wei Zhang, Nosipho Moloto, Zhengming Sun Southeast University, China
13:15-13:30	(ET25-2316-A) <i>Enhanced Ether-Based Electrolyte Systems for Stable Lithium Metal Batteries</i> Panpanat Tesatchabut , Adisak Promwicha, Naruemon Apinyakul, Panida Muangkasem, Pimpa Limthongkul, Priew Eiamlamai National Science and Technology Development Agency, Thailand
13:30-13:45	(ET25-2241-A) <i>A Highly Reversible Aqueous Tin Battery Enabled by Solvation Chemistry</i> Pei Ding , Peigen Zhang, Wei He, Feiyue Hu, Jingwen Tang, Min Zhou, Jian Liu, Wei Zheng, Haijiao Xie and Zhengming Sun Southeast University, China
13:45-14:00	(ET25-2315-A) <i>Balancing capacitance, and Self-Discharge in Modified Biomass-based Activated Carbon Electrodes for Supercapacitor Applications</i> Priew Eiamlamai , Kemchat Ruenroengrit, Thanathon Sesuk, Panpanat Tesatchabut, Adisak Promwicha, Ukrit Sahapatsombut, and Pimpa Limthongkul National Science and Technology Development Agency (NSTDA), Thailand
14:00-14:15	(ET25-2302-A) <i>A Fluorine-plasma-treatment lithium phosphorus oxynitride electrolyte for the high-performance and stable all-solid-state lithium-ion battery</i> Xinyi He , Xiaodong Huang Southeast University, China
14:15-14:30	(ET25-254) <i>A Novel Graphene-Enhanced Phase Change Material Based Composite Aggregate for Energy Storage Concrete Applications</i> Mahsa Salimi , Luigi De Nardo, Valter Carvelli Politecnico di Milano, Italy
14:30-14:45	(ET25-530-A) <i>Fabrication of Three-Dimensional Carbon Substrate for High Performance Pseudocapacitive Electrodes</i> Xiaoxia Liu Northeastern University, China

Session Group Photo & Best Presentation Award

Session 17

November 23rd | 13:00-14:45 | 8F, 805

- **Advanced Optical Materials and Functional Applications**
- **Chairperson: Dr. Deepak Sharma, RMIT University, Australia**

*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.

13:00-13:15	(ET25-2261-A) <i>Minute-level Dynamic Time-Gating Anti-Counterfeiting Based on Lead-Free Manganese Halide Perovskites</i> Yao Ju , Shuhong Xu, and Chunlei Wang Southeast University, China
13:15-13:30	(ET25-2259-A) <i>Stimuli-Responsive Anti-Counterfeiting Film Based on Carbon Dots-MOFs Nanofibers</i> Kaitian Zhao , Shuhong Xu, Chunlei Wang Southeast University, China
13:30-13:45	(ET25-2252-A) <i>Unravelling the Mechanism of Visible Light Emission in Guanine Crystals</i> Aditya Prasun , Tridib K. Sarma Indian Institute of Technology Indore, India
13:45-14:00	(ET25-2260-A) <i>Room-Temperature Phosphorescent Carbon Dots@Homogenous Matrix Composite Prepared by Controllable-Carbonization Technology</i> Hongcan Sun , Shuhong Xu, and Chunlei Wang Southeast University, China
14:00-14:15	(ET25-2345-A) <i>Emerging Oriented Copper Halide Scintillators for Low-Afterglow Linear-Array X-ray Imaging</i> Tengyue He KAUST, Saudi Arabia
14:15-14:30	(ET25-2257-A) <i>Design of a Self-Powered Smart Window Based on Luminescent Solar Concentrators</i> Shichao Huang , Shuhong Xu, Chunlei Wang Southeast University, China
14:30-14:45	(ET25-2258-A) <i>Self-powered luminescent solar concentrators with temperature sensitivity</i> Haotian Guo , Shuhong Xu, Chunlei Wang Southeast University, China

Session Group Photo & Best Presentation Award

Session 18

November 23rd | 13:00-14:45 | 8F, 806

- Design, Structure, and Properties of Magnetic Materials
- Chairperson: Asst. Prof. S.A. Martin Britto Dhas, Keimyung University, Republic of 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.

13:00-13:15	(ET25-2193-A) <i>The microstructure, magnetic and mechanical properties of nanoheterogeneous FeCo-(2V)-Cu alloys</i> Jianjie Du , Ximing Jin, Jingmin Wang, Chengbao Jiang Beihang University, China
13:15-13:30	(ET25-2156-A) <i>Magnetic Field and Spin-Reorientation Induced Ferroelectric Polarization in Fe-Based magnetic oxides</i> Ajay Tiwari , D. Chandrasekhar Kakarla, C. Dhanasekhar, J. -Y. Lin, H. C. Wu, C. W. Wang, H. D. Yang National Sun Yat-sen University, Kaohsiung City, Taiwan
13:30-13:45	(ET25-2165-A) <i>Microstructure and magnetostrictive effect in Fe₈₁Ga₁₉ single crystals during stress aging</i> Shuoyu Zhao , Jichao Yao, Jingmin Wang, Chengbao Jiang Beihang University, China
13:45-14:00	(ET25-2160-A) <i>Magnetocaloric, Nanomechanical and Structural Properties of GdGeSi-based Alloys Modified with Ce, Pr, Nd and Ni: Impact of Selective Alloying on Phase Evolution, Magnetic Properties and Entropy Change</i> Mariusz Hasiak , Amadeusz Łaszcz Wroclaw University of Science and Technology, Poland
14:00-14:15	(ET25-2173-A) <i>Synergistic Regulation of Magnetostrictive and Mechanical Properties in Fe-Ga Single Crystals: Compositional Design and Rare-Earth Doping</i> Jichao Yao , Boying Qiao, Shuoyu Zhao, Jingmin Wang*, Chengbao Jiang Beihang University, China
14:15-14:30	(ET25-2166-A) <i>Large Magnetic Anisotropy and High Spin State in 2D MnIn₂Se₃l₂</i> Yanyan Yang , Xinyu Chen, Guitao Zhang, Kang Li, Jinlan Wang and Qian Chen Southeast University, China
14:30-14:45	(ET25-2283-A) <i>The effect of Fe content on the magnetic energy product of Sm₂Co₁₇- type sintered magnets: intrinsic magnetism, microstructure, and microchemistry</i> Mingze Li , Ziheng Liu, Chengbao Jiang Beihang University, China

Session Group Photo & Best Presentation Award

Session 19

November 23rd | 15:00-16:15 | 7F, 701

- **Materials for Carbon Adsorption and Carbon Capture**
- **Chairperson: Dr. Valentina Segneri, Sapienza University of Rome, 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.

15:00-15:15	(ET25-532-A) <i>Novel Carbon Xerogel Materials for Blue Hydrogen Production</i> Benjamin Duheric , Stefano Brandani, Enzo Mangano, Francisco Rafael García-García The University of Edinburgh, United Kingdom
15:15-15:30	(ET25-508-A) <i>Carbon Dioxide Capture Using Biomimetic Absorbents</i> Alice Chillè , Giorgio Vilardi Sapienza University of Rome, Italy
15:30-15:45	(ET25-2196) <i>Preliminary Study on CO₂ Sequestration in High-Calcium Fly Ash Geopolymer Cement via Direct Air CO₂ Capture</i> Kasidin Patcharapat , Teewara Suwan, Chotiros Boonpeng, Tawatchai Tanchaisawat, Peerapong Jitsangiam, Mizi Fan Chiang Mai University, Thailand
15:45-16:00	(ET25-514-A) <i>Process Simulation of Nanoparticle-Enhanced CCU with Multi-Pathway Valorization</i> Mattia Micciancio , Giorgio Vilardi Sapienza University of Rome, Italy
16:00-16:15	(ET25-539-A) <i>Carbon-negative ammonia synthesis through lithium loop</i> Dingqi Wang , Xue Yan, Jining Guo, Longbing Qu, Chao Wu, Zhe Jefferson Liu, Ali Zavabeti, Gang Kevin Li University of Melbourne, Australia

Session Group Photo & Best Presentation Award

Session 20

November 23rd | 15:00-16:15 | 7F, 702

- **Advanced Sensor Materials and Detection Technology**
- **Chairperson: Dr. Neelam Vishwakarma, CSIR-Central Scientific Instruments Organisation, 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.

15:00-15:15	(ET25-2246-A) <i>Molecularly imprinted polymer-based novel conductometric biosensor for rapid, sensitive, and non-invasive detection of trypsin</i> Ayushi Singhal, Ganganath S. Perera, Fateme Akhlaghi Bagherjeri, Madhu Bhaskaran, Sharath Sriram, Raju Khan RMIT University, Australia; Academy of Scientific and Innovative Research (AcSIR) & CSIR-Advanced Materials and Processes Research Institute (AMPRI), India
15:15-15:30	(ET25-283-A) <i>Indium oxide thin films as a highly sensitive and selective dual gas sensor at room temperature</i> Roopa ., M. Senthil Kumar, Shruti Nirantar, Madhu Bhaskaran RMIT University, Australia
15:30-15:45	(ET25-2176-A) <i>Self-standing fluorine-functionalized COFs Membrane for the fatty acid removal in pesticide residue detection</i> Guanlian Mo, Hongxin Jiang, Zeying He Ministry of Agriculture and Rural Environment protection research and monitoring Institute, China
15:45-16:00	(ET25-2109-A) <i>Griess reaction for colorimetric detection of large excesses of nitrite in aqueous</i> Atsadaporn Thangprasert, Tarawee Taweekarn, Aree Choodum, Worawit Wongniramaikul, Pakorn pasitsuparoad Prince of Songkla University, Thailand
16:00-16:15	(ET25-260-A) <i>Doping Engineering and Interface Engineering Synergy: A Self-Powered Solar-Blind UV Photodetector with InZrO/Graphene Heterostructure</i> Ziming Wu, Guanghao Yang, Yufei Liu Chongqing University, China

Session Group Photo & Best Presentation Award

Session 21

November 23rd | 15:00-16:30 | 8F, 804

- **Nanomedicine and Drug Delivery Systems**
- **Chairperson: Dr. Aditya Prasun, Indian Institute of Technology Indore, 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.

15:00-15:15	(ET25-2220) <i>The Influence of 2-Dimethylamino Ethyl Methacrylate (DMAEMA) Concentration on Thermosensitive Nanogel Size</i> R. R. Ali , S. Rajendran, J. Z. Chan, M.S.N Salleh Universiti Teknologi Malaysia, Malaysia
15:15-15:30	(ET25-2326-A) <i>Green-Synthesized Selenium Nanoparticles for Antibacterial Skin Tissue Engineering</i> Afifah Mardhiah Mohd Radzi, Zatil Izzah Ahmad Tarmizi , Roshafima Rasit Ali, Sabariah Md Noor, Zakaria Dris Universiti Teknologi Malaysia, Malaysia
15:30-15:45	(ET25-2299-A) <i>From Hours to Days: PEGylated Liposomal-Hydroxypropyl-β-Cyclodextrin System for Sustained Release and Enhanced Bioavailability of Resveratrol</i> Adilah Marwa , Mahdi Jufri, Anton Bahtiar, Witta Kartika Restu University of Indonesia, Indonesia
15:45-16:00	(ET25-2224-A) <i>Strategy for restoring the microenvironment in tendinopathy: Modulating macrophages polarization and promoting regeneration via injectable decellularized tendon extracellular matrix hydrogel loaded with tendon-derived stem cells exosomes</i> Danmei Li , Jian Xu Zhejiang University, China
16:00-16:15	(ET25-2301-A) <i>A Biomimetic Magnetic Hollow Nanoplatform for Targeted Inflammation Modulation</i> Shuangyu Liu , Fang Yang Southeast University, China
16:15-16:30	(ET25-509-A) <i>Improved Dissolution and α-Glucosidase Inhibition Activity of Isobavachalcone by Incorporation into Mesoporous Silica Nanoparticles</i> Diah Lia Aulifa , Arif Budiman, Miski Aghnia Khairinisa Universitas Padjadjaran, Indonesia

Session Group Photo & Best Presentation Award

Session 22

November 23rd | 15:00-16:30 | 8F, 805

- **AI-Driven Materials Discovery and Design**
- **Chairperson: Prof. Ronnel Caco Garcia, Mapua Malayan Colleges Laguna, Philippines**

*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.

15:00-15:15	(ET25-2349-A) <i>Tenfold Faster Discovery of Perovskite Oxygen Carriers with Deep Learning</i> Henrik Klein Moberg Chalmers University, Sweden
15:15-15:30	(ET25-2314-A) <i>A Local Rule Learning-Informed Universal Model for the Reliable Discovery of Bifunctional Single-Atom Catalysts</i> Jiaqian Wang , Zhong-Kang Han Zhejiang University, China
15:30-15:45	(ET25-2347-A) <i>Generate Structured Crystallographic Data using transformer-based model</i> Anders Hellman Chalmers University of Technology, Sweden
15:45-16:00	(ET25-510-A) <i>Building a quantitative relationship among microstructure-defects-property of superalloys based on multimodal convolutional neural network</i> Huipeng Yu , Maodong Kang, Jun Wang Shanghai Jiao Tong university, China
16:00-16:15	(ET25-2320-A) <i>A deep learning and multi-objective optimization algorithm-based approach for mechanical response prediction and inverse design of lattice structures</i> Jianye Zhang , Junling Hou, Yingxuan Dong, Hong Zuo Xi'an Jiaotong University, China
16:15-16:30	(ET25-2255-A) <i>Formation Mechanism and Polarization Properties of Flexural Structures in MoS₂ Based on Deep Potentials</i> Qian Xia , Qian Chen Southeast University, China

Session Group Photo & Best Presentation Award

Session 23

November 23rd | 15:00-16:30 | 8F, 806

- **Controllable Synthesis and Self-Assembly of Nanomaterials**
- **Chairperson: Dr. Mahsa Salimi, Politecnico di Milano, 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.

15:00-15:15	(ET25-281-A) <i>Controlling GaN Nanorod Growth on Flexible Tantalum Foils via Surface Nitridation: From Interface Chemistry to Field Emission Performance</i> Bipul Kumar Pradhan , M. Senthil Kumar, Md Ataur Rahman, and Sharath Sriram RMIT University, Australia
15:15-15:30	(ET25-2128-A) <i>Controlled assembly of 2D aromatic polyamide nanosheets into thin-film membranes with vertically aligned pores</i> K.V.L. Amarasinghe , Junyi Wang, Yongsheng Jin, Sang Duck Park, Dongmok Whang Sungkyunkwan University, South Korea
15:30-15:45	(ET25-578-A) <i>Supramolecular design of silver nanoparticles</i> Anastasiia Stoinova RUDN University, Russian Federation
15:45-16:00	(ET25-517-A) <i>Web-like Silver Nanowire Networks via Marangoni-Induced Self-Assembly for Physically Unclonable Tags</i> Yun Ah Kim , Changgyun Moon, Sunkook Kim, Byungkwon Lim Sungkyunkwan University, Republic of Korea
16:00-16:15	(ET25-232-A) <i>Three-phase plasmonic catalysis: single-nanoparticle-thick superlattices for efficient nitrogen photofixation without sacrificial agents</i> Siew Kheng Boong , Hiang Kwee Lee Nanyang Technological University, Singapore
16:15-16:30	(ET25-543-A) <i>In situ visualization of directional dendritic growth driven by local electric fields</i> Mingrui Zhou Southeast University, China

Session Group Photo & Best Presentation Award

One-Day Tour in Osaka

Introduction

Tour Date: November 24th, 2025 | Monday

Place: Osaka, Japan

Time: 10:00-19:00 (UTC/GMT+9, Japan Time)

Start pot: Osaka International Convention Center

Route: Osaka International Convention Center - Nara Park - Todaiji Temple –

Fushimi Inari Taisha - Kiyomizu-dera Temple – Ninen-zaka & Sannen-zaka - Hanamikoji - Osaka Downtown

路線: 大阪府立国際会場で集合—奈良公園—東大寺—伏見稲荷大社—清水寺—
 二三年坂—花見小路—大阪市内で解散



Friendly Reminder

As for Todaiji Temple and Kiyomizu-dera Temple, admission tickets need to be purchased. Please bring cash. The prices are as follows.

	Opening Time	Price (JPY/Person)
Todaiji Temple	8: 00-17: 00	600
Kiyomizu-dera Temple	6: 00-18: 00	500

Delegate List

Cheng Chang, Beihang University, China
Huijie Wang, Beihang University, China
Mengxiao Li, Beihang University, China
Shuo Zhang, Beihang University, China
Tingyu Li, Beihang University, China
Yuanyuheng Wang, Beihang University, China
Ziheng Liu, Beihang University, China
Shuqi XIE, University of Science and Technology of China
Jiaxun Dai, University of Science and Technology of China
Wenchang Zhang, University of Science and Technology of China
Chotiros Boonpeng, Chiang Mai University, Thailand
Teewara Suwan, Chiang Mai University, Thailand
Veena Phunpeng, Suranaree University of Technology, Thailand
Watcharapong Patangtalo, Suranaree University of Technology, Thailand
Byoung Lyong Choi, Sung Kyun Kwan university, Republic of Korea
Byungkwon Lim, Sungkyunkwan University, Republic of Korea
Jin Suk Chung, University of Ulsan, Korea
Jungpil Kim, Korea Institute of Industrial Technology (KITECH), Republic of Korea
Kwang Se Lee, Gyeongbuk National University, South Korea
Soo Yeol Lee, Chungnam National University, South Korea
Khadija Ameir Al Balushi, Petroleum Development Oman (PDO), Oman
Mandhr Alfarsi, Petroleum Development Oman (PDO), Oman
Sabra Musabah AlKiyumi, Petroleum Development Oman (PDO), Oman
ZiYi Xu, National University of Singapore, Singapore
Shuai Xu, National University of Singapore, Singapore
Hadar Rotter, IIBR, Israel
Ido Nir, IIBR, Israel
Neelam Vishwakarma, CSIR-Central Scientific Instruments Organisation, India
Hsu-tzu Fan, Industrial Technology Research Institute (ITRI), Taiwan

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