



# 24<sup>TH</sup> International Symposium on Eco-materials Processing and Design

January 12-15, 2026, Hilton Wuhan Riverside, Wuhan, China

**Organized by:**

Wuhan University of Technology

State Key Lab of Advanced Technology for Materials Synthesis and Processing

Hubei Longzhong Laboratory



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## Introduction



On the behalf of the organizing committee, we are pleased to extend an invitation for you to attend the 24th International Symposium on Eco-materials Processing and Design (ISEPD 2026), which will be held in Wuhan, China from January 12-15, 2026. ISEPD 2026 aims to foster interdisciplinary collaboration and provide a platform for sharing cutting-edge research findings in the field of eco-materials. This symposium will encompass not only traditional sessions focused on green processing of eco-materials, advanced eco-materials, energy conversion and storage materials & technologies, environmental protection materials, long-term use materials, but also emerging topics of bioinspired materials and bioprocessing fabrication as well as AI for materials synthesis and processing. We believe that your expertise will greatly contribute to the discussions at this symposium and enrich the overall experience for all participants. Your participation would be highly valued by both the organizing committee and fellow attendees. In addition to our main symposium activities, we hope that all participants will have the opportunity to enjoy the rich history, charming culture, beautiful scenery and delicious cuisine of Wuhan city.

The International Symposium on Eco-materials Processing and Design (ISEPD) conference series was established through international collaboration at the beginning of the 21st century. The first symposium took place in February 2000 in Korea, organized by Sun Moon University. Since then, this symposium has been held annually, with its venues expanding beyond Korea to Japan, China, Thailand, India, Vietnam and Nepal. The ISEPD has served as a valuable platform for researchers across diverse disciplines to exchange knowledge related to the science and engineering of eco-materials. Over more than two decades, this community has consistently expanded not only throughout Asia but also on a global scale.

Currently, interdisciplinary research is emerging as a progressive trend within the scientific community, aiming to solve complex problems through collaboration efforts across various fields. Global warming presents significant challenges that necessitate collective action to reduce emissions and develop sustainable technologies. This imperative drives materials scientists and engineers to focus on low-energy fabrication methods, using strategies such as bioprocessing/bioinspired technology or artificial intelligence to improve efficiency while minimizing carbon emissions. Interdisciplinary innovation is essential for addressing climate change effectively and ensuring long-term sustainability. The ISEPD series provides a valuable opportunity for collaboration among experts from different disciplines—an endeavor crucial for advancing these technologies.



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## Schedule

Data	Program	Time
January 12 (Monday)	Registration	Whole Day
	Buffet	Evening
January 13 (Tuesday)	Opening Ceremony	Morning
	Plenary Lectures	
	Parallel Sessions	Afternoon
	Buffet	Evening
January 14 (Wednesday)	Parallel Sessions	Morning
		Afternoon
	Banquet	Evening
	Awards Ceremony	
	Introduction to ISEPD 2027	
	Closing Remarks	
January 15 (Thursday)	Departure	Whole Day


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## Transportation

### Transportation Guide to the Venue

#### From Wuhan Tianhe Airport

- Metro: Line 2 transfer to Line 4 (1 hour 28 minutes, 46.7 km) 620 m walk from station

##### Detailed Route:

Board at [Tianhe Airport Station](#), take Line 2 (Fozuling direction) for 21 stops, alight at [Zhongnan Road Station](#); transfer to Line 4 (Bolin direction) for 5 stops, exit at [Lanjiang Road Station \(Exit B\)](#), then walk 610 m to the venue.

- Taxi: 35 km, approximately 1 hour depending on traffic

#### From Wuhan Railway Station

- Metro: Line 4 (52 minutes, 21 km) 830 m walk from station

##### Detailed Route:

Walk 220 m from [Wuhan Railway Station](#), board at [Wuhan Railway Station](#), take Line 4 (Bolin direction) for 17 stops, exit at [Lanjiang Road Station \(Exit B\)](#), then walk 610 m to the venue.

- Taxi: 26.4 km, approximately 38 minutes depending on traffic

#### From Hankou Railway Station

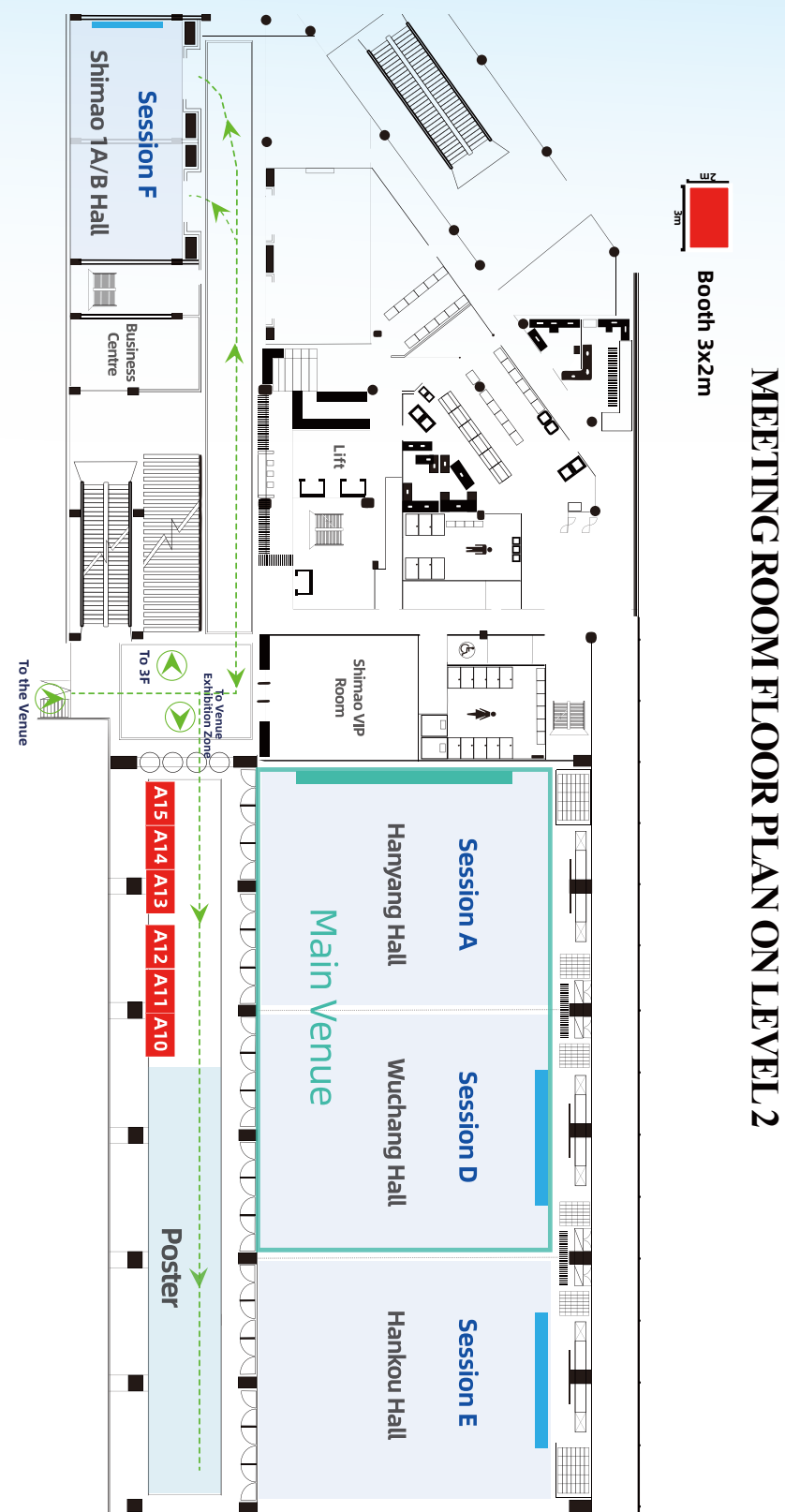
- Metro: Line 2 transfer to Line 4 (56 minutes, 22.5 km) 750 m walk from station

##### Detailed Route:

Walk 130 m from [Hankou Railway Station](#), board at [Hankou Railway Station](#), take Line 2 (Fozuling direction) for 11 stops, alight at [Zhongnan Road Station](#), transfer to Line 4 (Bolin direction) for 5 stops, exit at [Lanjiang Road Station \(Exit B\)](#), then walk 610 m to the venue.

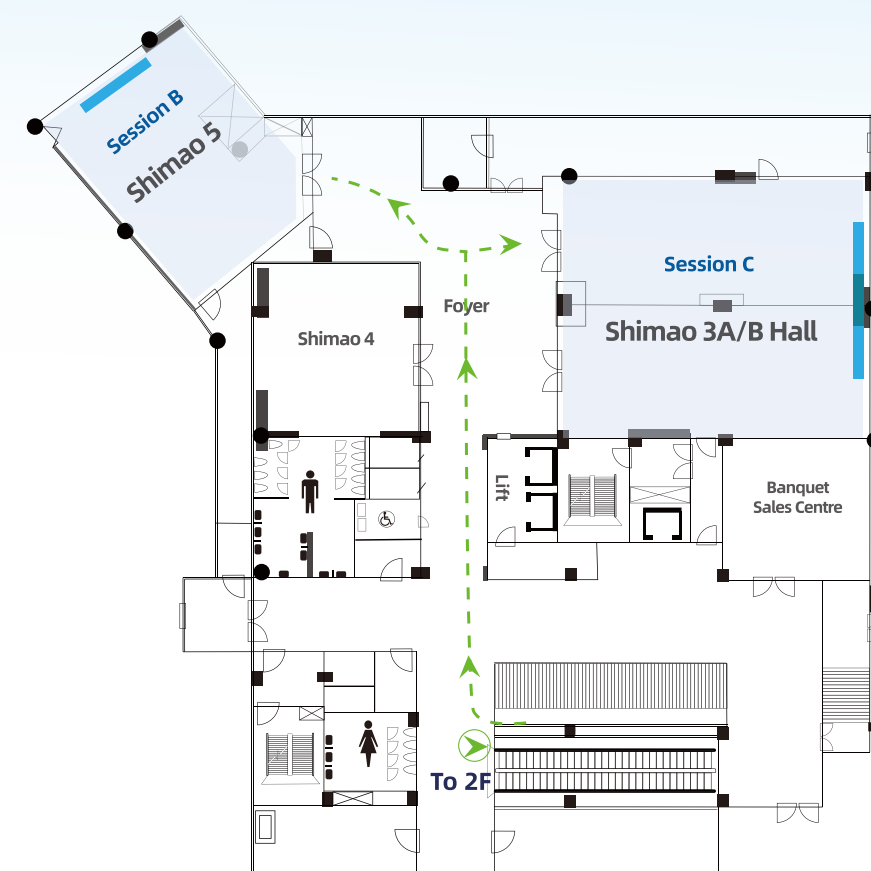
- Taxi: 10 km, approximately 27 minutes depending on traffic

## Floorplan



## Floorplan

**MEETING ROOM FLOOR PLAN ON LEVEL 3**



### Symposium Sessions

<b>Session A</b>	Green Processing of Materials
<b>Session B</b>	Eco-Materials, Materials Remediation and Recycling
<b>Session C</b>	Energy Conversion and Storage Materials
<b>Session D</b>	Environmental Protection Materials and Surface Technology
<b>Session E</b>	Bio-Inspired Materials and Bioprocessing-Inspired Fabrication
<b>Session F</b>	AI for Materials Processing and Design





## Quantum ionics: Ultra-low energy consumption of energy conversion/information transmission in biologic system

**Lei Jiang**

Technical Institute of Physics and Chemistry, Chinese Academy of Sciences

Life system presents an ultralow energy consumption in high-efficiency energy conversion, information transmission and bio-synthesis. The total energy intake of human body is about 2000 kcal/day to maintain all our activities, which is comparable to a power of ~ 100 W. The energy required for brain to work is equivalent to ~ 20 W, while the rest energy (~ 80 W) is used for other activities. All in vivo bio-syntheses take place only at body temperature, which is much lower than that of in vitro reactions. To achieve these ultralow energy-consumption processes, there should be a kind of ultralow-resistivity matter transport in nanochannels (e.g., ionic, molecular channels), in which the directional collective motion of ions or molecules is a necessary condition, rather than the traditional Newton diffusion. Directional collective motion of ions and molecules are considered as ionic/molecular superfluid. The research of ionic/molecular superfluid will promote the development of neuroscience and brain science, develop quantum ionic technology, and produce a series of disruptive technologies.

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### Biography

**Lei Jiang** is a Professor at the Technical Institute of Physics and Chemistry, Chinese Academy of Sciences (TIPC). He is an academician of the Chinese Academy of Sciences, Academy of Sciences for the Developing World, National Academy of Engineering (USA), Australian Academy of Science, Academia Europaea and European Academy of Engineering. Prof. Lei Jiang has discovered and established the basic principle of the interfacial material systems with superwettability and extended them to successful innovative applications. His work has been followed by more than 1,400 research institutions in 100 countries around the world. He is the most original and influential scientist in the field of material science in China. Due to his contribution to the development of superwettability, he won the “TWAS Prize in Chemistry” in 2011, the Advanced Science and Technology Award of “THE HO LEUNG HO LEE FOUNDATION” in 2013 and the “Outstanding Achievement Award” of the Chinese Academy of Sciences in 2014. In 2016, he won the “UNESCO Medals” for contributions to the development of nanoscience and nanotechnologies, and the “Nikkei Asia Prize”. In 2017, he won the “Humboldt Research Award” in Germany. In 2018, he was awarded the “Qiu Shi Outstanding Scientist Award” and “Nano Research Award”. In 2020, he won the “ACS Nano Lectureship Award”. In 2022, he won Tan Kah Kee Science Award.



## The rise of transparent and paper electronics

**Rodrigo Martins**

NOVA University Lisbon

In the current digital era, as our world rapidly advances alongside smart technology, we are confronted with significant challenges that threaten the sustainability of our planet. Notable among these challenges are material scarcity, the growing accumulation of unrecycled waste, and pervasive environmental pollution, where high temperature processes play a significant role for that. The swift socio-economic growth we have witnessed, largely fueled by the rising demand for smart electronics, plastic-based products, and an overreliance on non-recyclable raw materials, has exacerbated climate change and disrupted ecological balance, leading to the depletion of our precious natural resources.

As we move further into this technological revolution, the advancements in the Internet of Things (IoT) and wearable smart devices compound these issues, necessitating the development of high-resolution communication interfaces. This evolution calls for a pivotal shift towards green technologies that prioritize environmental sustainability, particularly in the realm of materials. Emerging nanoscale devices offer promising alternatives that surpass traditional silicon-based options, paving the way for innovative technologies and products that are eco-sustainable. One exciting area of development is in transparent and paper electronics, which hold the potential to transform our approach to electronic devices.

This presentation aims to delve into the pathways available for effectively tackling these interconnected challenges: the urgent need to minimize electronic waste (e-waste) while simultaneously advancing sustainable technological solutions. Our commitment is to contribute to the establishment of eco-friendly, green-electronics products that not only meet consumer needs but also align with the principles of environmental stewardship.

In addition to our focus on product development, we are dedicated to fostering social awareness surrounding sustainable and green technologies. By engaging with communities, businesses, and policymakers, we aspire to promote practices that can revolutionize both industry and society. Through innovative business models and advocacy for smart, sustainable lifestyles, we envision a future where technology and environmental responsibility coexist harmoniously, leading to a sustainable world for generations to come.

We invite you to join us on this journey of exploration and innovation, as we uncover new strategies to address these pressing challenges and champion the transition to a more sustainable future. Together, we have the potential to make a significant impact on our environment and society, crafting a more resilient world empowered by green technology.



### Biography

**Rodrigo Martins** is full professor at FCT-NOVA, expert in the field of Advanced Functional materials, with more than 1350 papers published, running president of the European Academy of Sciences, director of the Materials Research Center (CENIMAT) and of the Associated Laboratory i3N, the Institute of Nanostructures, Nanomodeling and Nanofabrication; former President of International Union of Materials Research Society-IUMRS; former Member of the Scientific Council of the European Research Council; former member of the Advisory Council of DG prosperity in the frame of European Programme Horizon (2014-2016).

President of the administration board of the Portuguese cluster in Advanced Materials (NANOMAT); member of the administration board of the Portuguese cluster on Batteries (BatPower); Chair of the European Committee Affairs of European Materials Research Society. He is a member of the Academia Europaea, Portuguese Academy of Engineering, European Academy of Sciences, the Portuguese Order of Engineers, OE, and of the Board of Admission and Qualification of OE. QiuShi Chair Visiting Professor at Zhejiang University; Honorary Professor of Heife Institutes of Physical Sciences of the Chinese Academy of Sciences (CAS); Honorary Professor of the Technical University of Wuhan. In 2023 selected as PIFI Distinguished Scientist of Chinese Academy of Sciences, the highest honour for overseas talents. He got more than 20 distinctions and awards. In 2021 he got the Career and Recognition Award given by the Portuguese Society of Materials and the Research Nova-Altice Award. He is the editor in chief of the journal Discover Materials.(see more at <https://www.cenimat.fct.unl.pt/people/rodrigo-ferrao-paiva-martins>)



## Large area fabrication of meta-lens and meta-hologram using nanoimprint lithography

**Heon Lee**

Korea University  
Zerc Co. Ltd.

Nowadays, meta-surface, including meta-lens and meta-hologram devices, has been intensively studied by many research groups, since they can replace the existing optical system with an improved performance and a reduced form-factor. Meta-surface consists of 2 dimensional array of nano-antenna which are smaller than an operating wavelength and each nano-antenna can control the phase and amplitude of incoming light. Regardless of various researches about meta-surface, it is not commercialized yet and the biggest obstacle in commercializing meta-surface is difficulty in fabricating meta-surface in large area with reasonable cost.

In this presentation, as large as 12-inch diameter meta-surface was fabricated by nanoimprint lithography. With a high refractive index imprint resin which is the mixture of UV curable polymer resin and high refractive index nano-particles, meta-surface was imprinted using elastomeric stamp. Meta-surface can be successfully formed on non-flat surface or flexible substrate using imprint process.

In conclusion, the biggest hurdle for commercializing meta-surface is its high fabrication cost and limited size and these problems can be solved using nanoimprint lithography.

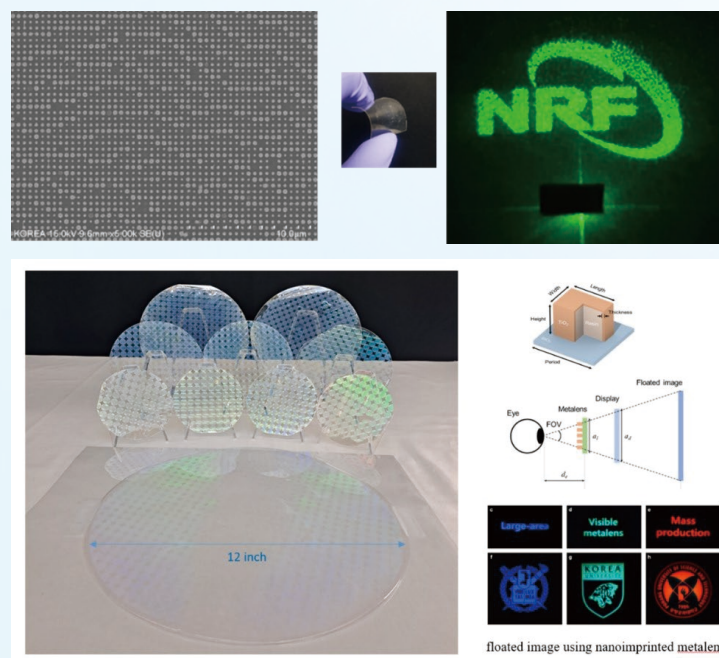


Figure. Nanoimprinted meta-surface and meta-hologram devices



### Biography

**Prof. Heon Lee** receive his PhD degree from Stanford University in 1996. Then he worked for Bell Labs, Siemens Microelectronics and HP labs till 2003. After that, he joined Korea University, Department of Materials Science and Engineering as a faculty in 2004. His focused research area is nanoimprint lithography, radiative cooling and meta-surface. He is the author of 385 SCI papers with 11876 citations.



## Eco-friendly materials design, processing and development for future ceramics applications

**Tohru Sekino**

SANKEN, The University of Osaka

Eco-materials are attracting significant attention amid today's numerous environmental and energy challenges. The science and technology of eco-materials is expected not only endow the materials themselves with functions that reduce environmental impact such as catalysts for removing harmful substances or energy generation and storage capabilities but also to contribute to reducing energy consumption by utilizing low-environmental-impact processes in the fabrication of high-performance materials and devices. This paper overviews recent material developments achieved in ceramics and inorganic materials in our group. These achievements aim to solve various current challenges through advanced tuning of structures and functions coupled with novel process development and optimization

Various nanostructured oxides could be synthesized using solution chemical processes; Titania with nanotube structures (TNT) exhibited excellent photocatalytic and environmental purification properties due to the synergistic effects of its crystal structure, low-dimensional nanostructure, and the semiconductor and chemical properties of titania. While conventional methods for TNT synthesis required excessively high-concentration alkaline aqueous solutions, novel protocol using titanium peroxide complex solutions significantly reduced alkali consumption and enabled the peroxy groups modification to the TNTs. This allows the one-pot synthesis of visible-light-responsive peroxy-modified TNT (PTNT). This nano-titania responded to visible light and induced resultant charge separation and possessed photocatalytic performance capable of selectively cleaving specific chemical bonds of organic molecules. When attempting controlled hydrothermal synthesis, alkaline titanates were formed into a seaweed-like structure, and they exhibited excellent ion adsorption properties due to their layered structure, making them promising candidates for high-performance water purification materials.

On the other hand, fabricating bulk ceramics typically requires high-temperature sintering. Recently, however, cold sintering process (CSP) utilizing localized hydrothermal reactions between compacted ceramic particles have been attracting much attention. In this research, we report CSP and modified CSP methods based on low-temperature mineralization sintering protocol (LMSP) using reaction solutions containing constituent components for materials.

These methods allowed to promote dynamic dissolution and reprecipitation of inorganic phases such as nano-glass, calcium phosphates and non-oxide (silicon nitride) to densify nanosized raw materials. As a result, we successfully fabricated dense bulk ceramics at process temperatures below 300 °C. This paper outlines the fabrication of calcium phosphate-based sintered bodies (hydroxy apatite and whitlockite) and their structure and mechanical properties, which cannot be achieved by conventional sintering methods. Low-temperature densification of silicon nitride has been achieved by using surface pre-modified raw materials with silica phases. In addition, recent research achievements applying CSP to energy device materials, such as secondary battery electrodes, will also be discussed.



### Biography

**Professor Dr. Tohru Sekino** graduated from Materials Chemistry at Tohoku University and obtained Ph.D. from Osaka University in 1997. He was recruited into Osaka University as a Research Associate in 1990, as an Associate Professor in 1999 at ISIR, and was appointed as an Assoc. Prof. at Tohoku University in 2007. He was then appointed as a full Professor at the Institute of Scientific and Industrial Research (SANKEN), Osaka University in 2014. Since April 2020 till March 2024, he served as the Director of SANKEN, Osaka University. He is involved in various cutting-edge investigations in design, development, function tuning and analysis coupled with novel process developments and optimizations for a wide variety of ceramics, ceramic-based nanocomposites, nanostructured and nanohybrid materials with multi-functions. Based on these material science and engineering research, he has published over 442 peer-reviewed publications in the worldwide scientific journals, which have been cited over 11,100 times (excluding self-cited papers), and invented more than 45 patents. Prof. Sekino received many awards including SPM Award for Distinguished Achievements in Research, Japan Society of Powder and Powder Metallurgy (May 2025), IUMRS Frontier Materials Scientists Awards (May 2022), The Ceramic Society of Japan Awards for Academic Achievements (May 2016), The Commendation for Science and Technology, the Minister of Education, Culture, Sports, Science and Technology (MEXT), Japan (April 2016), and so on.





## The innovation-driven development of fluoride optical functional crystals: synthesis and applications pushing the limit

**Liangbi Su**

Shanghai Institute of Ceramics, Chinese Academy of Sciences

Optical functional crystals play an irreplaceable role in the development of laser technologies, semiconductor industries, high-end equipment manufacturing, etc. In the current era, the demands from both the scientific frontiers and the megaprojects are continuously driving the developments of optical functional crystals to overcome bottlenecks in the scaling of crystal sizes, the suppression of crystal defects and the improvement of the device performances. Such innovation-driven attempts are pushing the crystal growth and defect control of optical functional crystals towards the boundaries, in order to achieve ultra-large dimensions, ultra-low defects and extreme performances. Our research focuses on the design, crystal growth and characterizations of novel fluoride optical functional crystals for critical applications in fields such as lasers and high-precision optics: (1) We proposed the strategy of designing the luminescent behaviors of rare earth doped  $\text{MF}_2$  ( $\text{M}=\text{Ca}, \text{Sr}, \text{Ba}$ ) crystals by tailoring the local coordinate structure via co-doping buffer ions. Special crystal lattice orders, i.e., “short-range disordered structures” embedded within the long-term periodic lattices, are created by manipulating the site environments of the rare earth dopants. A series of new laser crystals with performance exceeding that of traditional laser materials have been developed, establishing a new paradigm for the design of new laser crystals for diverse laser applications. (2) An in-situ observation method for real-time visualization of crystal growth interfaces was developed based on a conventional vertical Bridgman (VB) apparatus for fluoride crystal growth. The crucial bottlenecks of conventional crystal growth, i.e., the crystallization interfaces are neither detectable nor controllable, were overcome by establishing a feedback control system for maintaining stable solid-liquid (S-L) crystal growth interfaces with optimized shape, based on the capability to achieve quantitative information about the crystal growth processes by extracting the coordinates of S-L interfaces. Large-scale fluoride laser and optical crystals with high optical quality were successfully grown. (3) A series of breakthroughs in laser performances were achieved: in the  $\sim 1\ \mu\text{m}$  spectral region, the laser pulse duration of solid-state laser based on  $\text{Nd}^{3+}$  doped fluoride crystals was suppressed to sub-100 fs range for the first time; in the  $\sim 2\ \mu\text{m}$  spectral region, CW laser of a slope efficiency over 80% was realized using  $\text{Tm}:\text{SrF}_2$  crystals, corresponding to a quantum efficiency close to 200%; in the  $\sim 3\ \mu\text{m}$  spectral region, high efficiency CW laser with the output power exceeding 15 watts was generated, which is to our best knowledge the highest record for CW mid-infrared lasers achieved in rare earth doped crystals. The outstanding laser performances indicate that these fluorite-type laser crystals are promising candidates for high-performance solid-state laser applications.



### Biography

**Dr. Liangbi Su** is a professor from Shanghai Institute of Ceramics, Chinese Academy of Sciences (SICCAS). He is currently the director of SICCAS and also the director of the State Key Laboratory of Functional Crystals and Devices. He graduated from Wuhan University of Technology with a B.S and a M.S degree, and then received a doctoral degree from the Shanghai Institute of Optics and Fine Mechanics (SIOM), Chinese Academy of Sciences in 2005. He joined SICCAS in 2008 and is now leading “laser and optical crystals” research group, focusing on structure tailoring, crystal growth and characterization of fluoride crystals for laser and optical applications. He has published more than 300 scientific papers as the first or corresponding author and is the co-author of 6 books or titled book chapters. He has been granted 31 patents and has taken the lead in the establishment of 4 standards about fluoride crystals, including one recommended national standard. In 2014, Dr. Liangbi Su was awarded the Excellent Young Scientists Fund of NSFC. In 2019, he was awarded the National Science Fund for Distinguished Young Scholars. He is also the PI of the National Key R&D Program of China “Key Technologies of Crystal Growth and Applications of Large Size Laser Crystal Materials” as well as several other key research projects, including the CAS Project for Young Scientists in Basic Research.



## Keynote



**Junichi MATSUSHITA** Tokai University

**Professor Junichi MATSUSHITA** received his Master's degree in Engineering from Toyota Technological Institute, Japan, in 1986, and his Ph.D. in Engineering from Tokai University, Japan, in 1991. He joined Tokai University in 1996 as an Assistant Professor and was promoted to Associate Professor in 1999 and to full Professor in 2004. He served as Head of the Department of Materials Science at Tokai University from 2007 to 2010 and has been Professor Emeritus of Tokai University since 2025. In addition to his primary appointment, Professor Matsushita has held numerous international academic positions, including Adjunct Associate Professor at the Materials Research Laboratory, The Pennsylvania State University, USA (1997–1998), Visiting Professor at Lviv Polytechnic National University, Ukraine (2001–2004), the University of Cambridge, UK (2005–2006), and Hanyang University, Korea (2007–2008), as well as Guest Professor at Xi'an Jiaotong University (2012–2015) and Wuhan University of Technology (2016–2018), China. He has received multiple honors, including the Electric Technology Encouragement Award from the Japan Society of Electric Science and Technology, awards from the Japan Society of Powder and Powder Metallurgy and the Ceramics Society of Japan, and the Fulbright Award from the Japan–United States Educational Committee. He is a member of the European Academy of Sciences. His research focuses on the development of advanced ceramics, with particular emphasis on ceramic sintering.



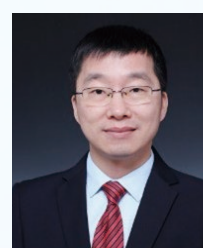
**Shotaro Tada** Indian Institute of Technology Madras (IIT Madras)

**Shotaro Tada** earned his Ph.D. in 2021 from the Department of Life Science and Applied Chemistry, Nagoya Institute of Technology under the supervision of Professor Yuji Iwamoto. He subsequently undertook postdoctoral research at the same institution before commencing an independent role as a visiting faculty member in the Department of Metallurgical and Materials Engineering at the Indian Institute of Technology Madras in 2022. Dr. Tada's research focuses on ceramics processing and the innovative design of functional materials utilizing polymer precursor strategies. His expertise encompasses catalysis, nanocomposites, membrane science and technology, among other areas. Presently, his work concentrates on material design for catalytic processes, small molecule activation, and approaches to carbon capture and utilization.



**Hao Wang** Wuhan University of Technology

**Hao Wang** is a Professor and Ph.D. supervisor at the State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology. He earned his B.S. (1991), M.S. (1994), and Ph.D. (1999) in Materials Science from Wuhan University of Technology and completed postdoctoral research at Osaka University, Japan (2002–2004). His research focuses on high-performance transparent ceramics and structure-function integrated ceramic composites. Prof. Wang was selected into the Ministry of Education's "New Century Excellent Talents" program, and received the Hubei Youth May Fourth Medal (2008).



**Dingsheng Wang** Tsinghua University

**Dingsheng Wang**, born in 1982. In 2004, he received a B.S. degree from the Department of Chemical Physics, University of Science and Technology of China. In 2009, he received a Ph.D. degree from the Department of Chemistry, Tsinghua University. From 2009 to 2012, he was engaged in postdoctoral research in the Department of Physics, Tsinghua University. In July 2012, he joined the Department of Chemistry of Tsinghua University and was hired as a lecturer. In December 2012, he was promoted to an associate professor. In 2015, he was qualified as a doctoral supervisor. His research field is the chemistry of inorganic nanomaterials. Since obtaining a Ph.D. degree in 2009, he has been engaged in the synthetic chemistry of inorganic nanomaterials, and his research mainly includes the synthesis, structural regulation, and catalytic performance of inorganic functional nanomaterials (metal nanocrystals, clusters, and single atoms). In 2012, he won the National Excellent Doctoral Dissertation Award. In 2013, he was awarded the National Excellent Youth Science Fund. In 2018, he was selected into the Young Talent Support Plan. In 2023, he was awarded the National Outstanding Youth Science Fund. He has published more than 200 academic papers, including Nature, Nature Chem., Nature Nanotechnol., Nature Catal., Angew. Chem. Int. Ed., J. Am. Chem. Soc., Adv. Mater., Nature Commun. Etc





## Keynote

**Xuefeng Jiang**

East China Normal University

**Xuefeng Jiang** is a Professor at East China Normal University, Shanghai. He is a Fellow of the Chinese Chemical Society (CCS) and the Royal Society of Chemistry (RSC). His research interests focus on sulfur chemistry, organometallic catalysis, and green synthesis. He is a recipient of the State Council's Special Government Allowance and has been recognized as a Distinguished Young Scholar and Excellent Young Scholar of the National Natural Science Foundation of China, as well as a member of the National High-Level Talent Program. Prof. Jiang has received numerous awards, including the National Innovation Excellence Award (2023), First Prize of the Shanghai Natural Science Award (2024), Shanghai Outstanding Contribution Award for Young Science and Technology Talent (2023), CCS Young Chemist Excellence Award (2024), China Invention and Entrepreneurship Award—Personal Achievement Award (2025), National Disruptive Technology Innovation Competition Excellence Award (2024), China Bio-Pharma Industry Innovation U45 Influential Youth Award (2024), and the Yangtze River Delta National Innovation Center Gold Award (Clean Energy Category, 2025). He serves as Associate Editor of Green Synthesis and Catalysis, Essential Chem, Chemical Education, and Chemical Reagents, and is an editorial board member of journals including National Science Review, Science Bulletin, ACS Sustainable Chemistry & Engineering, Organometallics, Chemical Communications, Tetrahedron, and European Journal of Organic Chemistry.

**Xiao Feng**

Beijing Institute of Technology

**Xiao Feng**, Professor and Doctoral Supervisor at Beijing Institute of Technology. He earned his bachelor's and PhD degrees from Beijing Institute of Technology and conducted research at the Institute for Molecular Science in Japan during his doctoral studies. Recipient of National Youth Talent (2019) and Leading Talent program (2025). His research focuses on functional porous materials and energy conversion, particularly in fuel cells. Led several research projects, including the National Natural Science Foundation of China's Excellent Young Scientist Fund and general projects. Published over 60 papers in Science, Nature Materials, and etc.. Selected as a Highly Cited Researcher. Received awards including Jingqing Chemistry Rising Star Award (Chinese Chemical Society), First-Class Natural Science Award (ranked 2nd of 4 contributors, Ministry of Education).

**Cao Guan**

Northwestern Polytechnical University

**Dr. Cao Guan** is a Professor of Institute of Flexible Electronics, Northwestern Polytechnical University. He also serves as the vice president of Shaanxi Federation of Returned Overseas Chinese. He received his BS Degree from the School of Physics, Wuhan University, China in 2009 and completed his PhD study in the School of Physics and Mathematics Sciences, Nanyang Technological University, Singapore in 2013. He worked as a Research Fellow in the Department of Materials Science and Engineering, National University of Singapore from 2014–2018. His research focuses on flexible batteries and 3D printed integrated flexible electronics. He has published over 120 peer-review papers and has a total citation of 19000+, H-index is 71. He also serves as Fellow of the Royal Society of Chemistry, and Advisory Panel for Research and Nanotechnology, and young advisor board for InfoMat and SmartMat.

**Jiangtao Xiong**

Northwestern Polytechnical University

**Jiangtao Xiong**, born in April 1974 in Longchang, Sichuan Province, is a Professor and Ph.D. supervisor at the School of Materials Science and Engineering, Northwestern Polytechnical University. He serves as the Director of the Shaanxi Engineering Research Center for Friction Welding and a board member of the China Welding Society. He received his bachelor's degree in Welding Engineering from Harbin Institute of Technology in 1998, and his master's (2003) and doctoral degrees (2007) in Materials Processing from Northwestern Polytechnical University. His primary research interests include solid-state welding theory and technology, and the thermodynamics of solid–solid interfacial evolution. He has published 158 SCI-indexed papers, which have been cited over 2,700 times, including 62 papers as the first or corresponding author. More than 30 of his works have appeared in top-tier materials journals such as Acta Materialia, Scripta Materialia, Journal of Materials Science and Technology, and Composites Part B: Engineering. He also serves as a reviewer for leading international journals including Additive Manufacturing and Journal of Alloys and Compounds, and is an Associate Editor of Welding International.





## Keynote

**Qiuyun Fu**

Huazhong University of Science and Technology

**Qiuyun Fu** is a Professor at the School of Integrated Circuits, Huazhong University of Science and Technology (HUST) and is the Director of the Engineering Research Center of Functional Ceramics, Ministry of Education. She earned her B.S. in Solid-State Electronics and M.S. in Electronic Science and Technology at HUST, and completed her Ph.D. in Electronic Information and Technology at Technology University of Dresden, Germany, in 2005. Following her doctorate, she served as a Scientist at the Fraunhofer Institute for Photonic Microsystems in Germany until 2009. She returned to HUST in 2006. Her industrial experience includes roles as an Assistant Engineer at the Wuhan Research Institute of Posts and Telecommunications and as a Chip Design Engineer at FiberHome Technologies Group. Her research focuses on advanced electronic materials and devices, particularly functional ceramics and sensors. She has led key national projects from the National 863 Program, the National Natural Science Foundation of China, and the National Key R&D Program and authored over 160 publications and holds 47 patents. Her work has been recognized with awards including the First Prize of Science and Technology Progress from the China Electronics Society and Hubei province. She was named a "Top Ten Outstanding Scientific Worker" by the China Electronics Society in 2020.

**Wei Wang**

Xi'an University of Architecture and Technology

**Dr. Wei Wang**, is a Professor and Doctoral Supervisor at Xi'an University of Architecture and Technology. He has been recognized as a Young Changjiang Scholar and as a Leading Talent in Scientific and Technological Innovation under the Shaanxi Special Support Program. His research focuses on the plastic forming and lubrication of rare metals. He has published over 80 peer-reviewed papers in leading journals, including Adv. Funct. Mater., ACS Appl. Mater. Interfaces, Appl. Surf. Sci., and Friction. He has received multiple honors, including awards and recognitions conferred by the Ministry of Education and the Shaanxi Provincial Government.

**Santi Maensiri**

Suranaree University of Technology

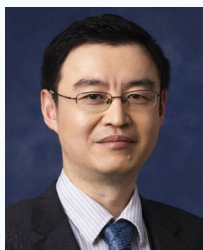
**Professor Santi Maensiri** earned his B.Sc. in Physics from Khon Kaen University, Thailand, followed by an M.Sc. in Ceramic Processing from the University of Leeds and a D.Phil. in Materials Science from the University of Oxford, UK. His research interests cover applied physics, materials science, materials physics, and nanomaterials. He has published over 330 Scopus-indexed articles, receiving more than 13,000 citations with an h-index of 58, demonstrating his significant international research impact. At Suranaree University of Technology (SUT), Thailand, Professor Maensiri has held several major leadership positions, including Head of the School of Physics, Dean of the Institute of Science, and Vice-Rector for Academic Affairs and Internationalization. He currently serves as Dean of the Institute of Science, Director of the Centre of Excellence in Advanced Functional Materials (SUT-AFM), and Director of the NANOTEC-SUT Research Network on Nanotechnology for Nanomaterials and Advanced Characterizations. At the national level, he is President of the Materials Research Society of Thailand (MRS-Thailand), a member organization of the International Union of Materials Research Societies (IUMRS). He is also Editor-in-Chief of Science and Innovation of Advanced Materials and serves on the editorial board of Materials Chemistry and Physics. In recognition of his scientific contributions, he has received numerous honors, including the Thailand Young Scientist Award, multiple National Research Awards from NRCT, the Senior Research Scholar Award from TRF, and the National Outstanding Researcher Award in Physics.

**Xiang-Ju Meng**

Zhejiang University

**Xiang-Ju Meng** obtained his B.S. degree (1999) and Ph.D. degree (2004) at Jilin University, China. After postdoctoral research in Tokyo Institute of Technology and National Institute of Advanced Industrial Science and Technology (AIST), he joined Prof. Xiao's group. He became a full professor at Zhejiang University in 2015. His research interests include zeolites and heterogeneous catalysis.

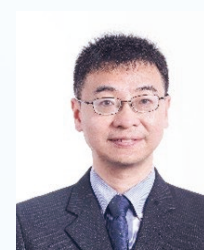
## Keynote



**Bo Peng**

SINOPEC Research Institute of Petroleum Processing Co., Ltd.

**Bo Peng** graduated from Tsinghua University and Nanjing University with B. Eng. and M. Sc. degrees. He then worked as a Wissenschaftlicher Mitarbeiter at Lehrstuhl II für Technische Chemie, Technische Universität München, and received his doctoral (Dr.-Ing.) in 2016. Afterward, he conducted postdoctoral research at Pacific Northwest National Laboratory (Applied Catalysis Team, Energy & Environment Directorate), and was appointed to research engineer later. At the end of 2019, Bo joined the SINOPEC Research Institute of Petroleum Processing (RIPP) as a staff engineer. The institute re-established the Basic Research Department in 2024, where Bo currently serves as the deputy director. He is also a research fellow and adjunct graduate advisor at multiple universities. Bo is active in application-oriented research for refining technology and green carbon science, specializing in heterogeneous catalysis and reaction engineering. He is the executive director of the RIPP Youth Academic Committee, an editorial board member of the journal “Carbon and Hydrogen”, and a member of CIESC’s Petrochemical Engineering Professional Committee.



**Yi Zeng**

Shanghai Institute of Ceramics, Chinese Academy of Sciences

**Prof. Zeng Yi** serves as the Director of the Testing Center at the Shanghai Institute of Ceramics, Chinese Academy of Sciences. His research primarily focuses on scanning electron microscopy-related studies. As the Chief Scientist of the National Key R&D Program for Instrument Development, he has led multiple national and local research projects, including the National Key R&D Program on Materials Genome, the 863 Program, international cooperation projects under the Ministry of Science and Technology, and Shanghai Science and Technology Support Program. He has published over 100 SCI papers as the first author or corresponding author. He holds several academic positions, including Executive Council Member of the Chinese Electron Microscopy Society, Vice Chair of the Scanning Electron Microscopy Committee of the Chinese Electron Microscopy Society, and Vice President of the Shanghai Society of Microscopy.



**Adisorn Tuantranont**

Thai Microelectronics Center (TMEC)

**Dr. Adisorn Tuantranont** received his B.Eng. degree in Electrical Engineering from King Mongkut’s Institute of Technology Ladkrabang (KMITL) in 1995, and his M.S. and Ph.D. degrees in Electrical Engineering (Photonics and MEMS) from the University of Colorado at Boulder in 2001. He is currently an NSTDA Research Fellow and Director of the Graphene and Printed Electronics Research Group at the National Security and Dual-use Technology Center, National Science and Technology Development Agency (NSTDA), Thailand. From 2001 to 2014, he served as Director of the Nanoelectronics and MEMS Laboratory at the National Electronic and Computer Technology Center (NECTEC), and since 2012, he has been the Director of the Thailand Organic and Printed Electronics Innovation Center (TOPIC). His research interests include MEMS/NEMS, microfabrication, advanced nanomaterials such as graphene, nanotubes, and nanowires, nanoelectronics, lab-on-a-chip systems, and printed electronics technologies. Dr. Tuantranont has authored over 165 peer-reviewed journal articles and more than 350 international conference papers, and holds multiple international and Thai patents. He has received numerous honors, including the Young Technologist Award and the Toray Science Foundation Award, and is a member of the Thai Academy of Science and Technology. He currently serves as Vice President of NSTDA, overseeing National Quality Infrastructure centers, and as Executive Director of the Thai Microelectronics Center.



**Pakorn Opaprakasit**

Thammasat University

**Pakorn Opaprakasit** earned his B.Sc. (Hons.) in Chemistry from Chiang Mai University, Thailand, and subsequently completed his M.S. and Ph.D. in Materials Science and Engineering at The Pennsylvania State University, USA. He currently serves as a Professor and Deputy Director for Academic Affairs at the Sirindhorn International Institute of Technology (SIIT), Thammasat University, Thailand. His research focuses on functional materials, polymer circularity, chemical recycling, bio-based and CO<sub>2</sub>-derived polymers, and flexible electronic devices. He has made significant contributions to advancing sustainable materials innovation and circular economy strategies through polymer science and engineering. He has published more than 125 peer-reviewed papers with over 1,895 citations and holds an H-index of 24. In addition, he is an inventor on 14 patents related to advanced polymeric materials and upcycling technologies. Beyond his academic and research roles, he actively contributes to the scientific community as Vice President of the Materials Research Society of Thailand (MRS-Thailand). He serves on the boards of the Polymer Society of Thailand and the Science Society of Thailand under the Patronage of His Majesty the King.





## Keynote

**Vinich Promarak**

Vidyasirimedhi Institute of Science and Technology

**Vinich Promarak** is currently a Professor of Chemistry at VISTEC, Thailand. He earned a D.Phil. in Organic Chemistry from the University of Oxford, England, in 2002. Throughout his academic journey, he was presented with many major honours and awards, including Distinguished Professor Research Grant (2022), Thailand's Outstanding Scientist Award (2021), CST High Impact Chemist Award (2017), Outstanding National Researcher Award (Chemical and Pharmaceutical Science) (2016), NRCT Outstanding Research Award (2013), TRF-CHE-Scopus Researcher Award (Chemical Sciences) (2013), and Thailand's Young Scientist Award (2007). His research interests include the development of new high-tech organic and organic-inorganic materials for applications in optoelectronic devices, i.e., organic light-emitting diode (OLED), dye-sensitized solar cell (DSSC), organic solar cell (OSC), perovskite solar cell (PSC), organic field-effect transistor (OFET), and transparent luminescent solar concentrator (TLSC), heterogeneous catalysts for green chemistry and biodiesel production, and new molecular sensors and smart sensing devices. So far, he has contributed nearly 300 peer-reviewed research papers (h-index = 49).

**Wenjun Dong**

University of Science and Technology Beijing

**Wenjun Dong** received his PhD in Inorganic Chemistry from Jilin University in 2004. Currently he is a professor of School of Materials Science and Engineering at University of Science and Technology Beijing. His recent research interests include synthesis of hierarchical nanostructures with nanoscale precision and exploiting new properties (such as physical, chemical and biological properties) that arise in these new nanoscale architectures.

**Shu YIN**

Tohoku University

**Professor Shu YIN** received his Ph.D. in Applied Chemistry from Tohoku University in 1999, where he is now a Professor at the Institute of Multidisciplinary Research for Advanced Materials (IMRAM) and the Advanced Institute for Materials Research (WPI-AIMR). He has received several prestigious awards, including the CerSJ Award for Academic Achievements in Ceramic Science and Technology, The Ceramic Society of Japan (2015), Academic Award of the Japan Society of Inorganic Materials (2015), and Academic Award of the Japan Association of Inorganic Phosphorus Chemistry (2025). His research focuses on environmental functional catalysts, morphology-controlled nanomaterials, optical functional materials, and green chemical synthesis. He has published over 600 papers (Google Scholar: 20,000+ citations, h-index 78,) and has led numerous national research projects. He also serves in leadership roles for international academic societies and conferences, and as an editorial board member of several journals.

**Chunjoong Kim**

Chungnam National University

**Chunjoong Kim** received his Ph.D. degree in Materials Science and Engineering from Seoul National University, Korea. He worked as a post doctor at Lawrence Berkeley National Laboratory and a principal researcher at Samsung Fine Chemicals. He joined the Department of Chemistry at University of Illinois at Chicago as a Research Assistant Professor. He is currently a Professor in the Department of Materials Science and Engineering at Chungnam National University since 2015. His current research interests include the understanding of reaction mechanism in the electrode materials for energy storage and conversion devices.



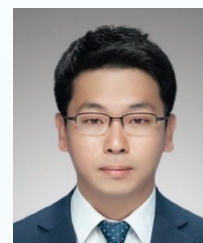


## Keynote

**Jae Hyun Kim**

Daegu Gyeongbuk Institute of Science &amp; Technology

**Dr. Jae Hyun Kim** received his Ph.D. in Materials Science and Engineering from the Korea Advanced Institute of Science and Technology (KAIST) in 2003. Following his doctoral studies, he joined LG Philips LCD as a Senior Research Engineer, where he spearheaded the design and process development of next-generation TFT-LCD TV panels (2003–2005). Since 2005, he has been with the Daegu Gyeongbuk Institute of Science and Technology (DGIST), where he currently serves as a Principal Researcher in the Division of Energy & Environmental Technology and as a Professor in the Department of Energy Science & Engineering. Dr. Kim has led numerous high-impact research initiatives, including serving as the Project Leader of the Solar Thermal Unified Device program. His prolific research contributions span solar cells, graphene quantum dots, hybrid photovoltaics, Li-ion batteries, and solid-state electrolytes. His recent work is devoted to advancing composite polymer solid-state electrolytes for next-generation Li-ion batteries. In recognition of his leadership and scholarship, Dr. Kim is serving as the President of the Korea Photovoltaic Society (KPVs) in 2025 and as Vice President of the Materials Research Society of Korea (MRS-K).

**Joohoon Kang**

Yonsei University

**Joohoon Kang** is an Associate Professor in the Department of Chemical and Biomolecular Engineering at Yonsei University. He received his B.S. and M.S. degrees in materials science and engineering from Yonsei University in Korea in 2009 and 2011, respectively, and his Ph.D. degree in materials science and engineering from Northwestern University in 2018 under the supervision of Prof. Mark Hersam. He then moved to the University of California at Berkeley as a postdoctoral in the College of Chemistry. Before joining Yonsei University in 2025, he was an Assistant and Associate Professor in the School of Advanced Materials Science and Engineering at Sungkyunkwan University since 2019. His research interests include synthesis, processing, and electronic and energy applications of nanomaterials. In particular, he has focused on solution-based processing of low-dimensional nanomaterials for scalable functional electronics. His research has been widely recognized with several awards including the Korean Prime Minister's Commendation (2025), APAM Associate Academician (2025), SID Young Leader Award (2025), National R&D Excellence 100 in Korea (2024), Young Investigator Award from Korean Graphene Society (2024), and GCIM Early Career Award from MRS-K (2024). He serves as an Advisory Board Member in the Division of International Affairs, National Research Foundation (NRF) of Korea.

**Jianguo Tang**

Qingdao University

**Professor Dr. Jianguo Tang** is a frontier Scientist and Pioneer of hybrid Materials in global, the Fellow of Royal Society of Chemistry, the Academician of Engineering Academy of Ukraine. He is selected as the global 0.5%0 Top scientist. He is Ph. D. Supervisor, Director of National Center for International Researches of Hybrid Materials Technology. In April 2000, he received his Ph. D. degree of materials science at Shanghai Jiao Tong University. From 2000 to 2001, he was a visiting professor in Germany for one year. From 2001 to 2003, he was a postdoctoral fellow at Colorado State University (USA). His research focuses on pioneering completely new field of polymeric hybrids with wide heterogeneous nano-species for new photonic quantum properties and technologies. He innovated firstly the metal ion-induced polymeric nano-aggregation (HPAs), based on the coordination interactions between polymeric chains and metal ions; and he generated polymeric solid solution concept of heterogeneous species (PSSC), for the uniquely embedment of metal ions, inorganic quantum dots, and nanocarbons in polymer host without new phases formation. He has published 445 SCI-cited papers and authorized 92 national innovation patents including 1 US and 1 European ones.

**Maning Liu**

Lund University

**Dr. Maning Liu** is a tenure-track Assistant Professor of Materials Chemistry and a WISE Fellow (largest ever investment in Materials Science for Sustainability in Sweden) at Lund University, Sweden, a position he commenced in April 2023. His research is centered on the development of novel functional materials, with a particular focus on metal halide perovskites and semiconductor quantum dots for next-generation photovoltaic and photocatalytic applications, such as solar cells and solar fuel generation. Dr. Liu's distinguished academic path is uniquely complemented by significant industrial experience. He began his career as a Process Engineer in the TFT-LCD and thin-film solar panel industries, providing him with a robust foundation in scalable materials manufacturing. This practical drive for application fuels his fundamental research, which leverages cutting-edge time-resolved laser spectroscopy to unravel the photophysical mechanisms governing charge generation, recombination, and transport in nanomaterials. He holds a Ph.D. in Physical Chemistry from RMIT University, Australia, and further honed his expertise as a postdoctoral and senior research fellow at Tampere University, Finland. Dr. Liu has co-authored more than 70 influential publications, patents, and book chapters. As an emerging leader in his field, his group at Lund University is dedicated to bridging the gap between material discovery and device engineering for a sustainable energy future.



## Keynote

**Heechae Choi**

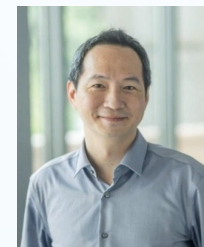
Xi'an Jiaotong-Liverpool University

**Heechae Choi** is a full Professor at Department of Chemistry and Materials Science, School of Science, Xi'an Jiaotong-Liverpool University (XJTLU) since January 2023. Before joining XJTLU, he had his first independent academic career as a Group Leader (Principal Investigator) at Institute of Inorganic and Materials Chemistry, University of Cologne, Germany, after receiving a top-level grant, MOPGA-GRI fellowship from 2018 to 2022. He received his Bachelor and Doctoral degrees both from Hanyang University in 2006 and 2012, respectively. Before he started academic career as faculty, he was trained in Korea Institute of Science Technology (KIST) for 4 years, and founded two venture companies, Virtual Lab Inc. and Materials Lab (Mar.2016, Aug.2018), which provide materials simulation platform and consulting services to big manufacturing companies, respectively. Heechae's most important and representative research achievements are (1) theory model development for semiconductor etching process, (2) statistical mechanics-based nanoparticle shape control for electronic devices and diamond processing, (3) Proof of the validity of classical Poisson-Nernst-Planck model in ion transport behavior predictions at nanostructured electrocatalyst surfaces using Machine Learning, and (4) demonstrating the amorphous-crystal junctioned photocatalyst system as the first time.

**Emmanuel Flahaut**

CNRS / University of Toulouse

**Dr. E. Flahaut** is a CNRS Senior Researcher at CIRIMAT (University Paul Sabatier, Toulouse, France) specializing in carbon nanotube (CNT) synthesis and applications. He obtained his Ph.D. in Materials Science from Université Paul Sabatier in 1999, focusing on CCVD synthesis of CNTs and their incorporation into composite materials, and completed his Habilitation in 2007. He was a postdoctoral fellow at Oxford University, working on the filling of CNTs with 1D crystals. Dr. Flahaut has developed gram-scale synthesis of double-walled CNTs with high selectivity and purity. His research spans CCVD synthesis, functionalization, and filling of CNTs for applications in materials (nanoelectronics, composites, sensors) and biomedicine (MRI contrast agents, tissue engineering scaffolds, drug delivery). He also investigates the health and environmental impact of CNTs and graphene-based materials. Dr. Flahaut has published 280 peer-reviewed articles (h-index 55, Scopus), is Editor of Synthetic Metals, and has received multiple awards including the Brian Kelly, Jean Rist, and Paul Sabatier awards. He is a Fellow of the European Academy of Sciences and an expert for the French National Agency for Food, Environmental and Occupational Health & Safety, serving on its Scientific Council.

**Daniel H.C. Chua**

National University of Singapore

**Associate Professor Daniel Chua** is in the Department of Materials Science and Engineering, National University of Singapore (NUS). Before joining NUS, he obtained his B.Sc (Honours) from NUS and Ph.D. in Electrical Engineering from University of Cambridge. After his PhD, he was a postdoctoral research associate in Mechanical Engineering in the University of Cambridge before joining NUS as an assistant professor. Over the years, he had served on several administrative duties as Deputy Head for Outreach, Assistant Dean (Undergraduate), Director, Office of Alumni Relations and Development and most recently, Vice Dean for Development. He has published over 200 research papers and his research interest spans from the design and fabrication of various types of low-dimensional nanomaterials with applications in clean energy, water splitting, fuel cells, semiconductor and other optical-electronic applications.

**Vladimir Khovaylo**

National University of Science and Technology

**Vladimir Khovaylo** received MS degree in 1997 from M.V. Lomonosov Moscow State University, Russia, PhD degree in Engineering from Tohoku University, Japan, and PhD in Physics from M.V. Lomonosov Moscow State University (both in 2002). In 2010 he defended habilitation thesis (Doctor of Sciences) at M.V. Lomonosov Moscow State University. He was a JSPS Fellow at National Institute of Advanced Industrial Science and Technology, Japan (2002-2004) and a senior researcher at Institute of Radioengineering and Electronics of Russian Academy of Sciences (2004-2009) before joining National University of Science and Technology (Moscow, Russia), where he is currently a professor of materials science. He was invited professor at Tohoku Gakuin University, Japan, in 2008, invited researcher and professor at Tohoku University, Japan, in 2010 and 2017, invited lecturer at Indian Institute of Technology Delhi, India, in 2017, and visiting professor at Wuhan University of Technology, Wuhan, China, in 2025. In 2023, he was awarded by the Badge of Honor of the Ministry of Science and Higher Education of Russian Federation ("Honorary researcher of science and high technologies"). His research interests include magnetic properties, Heusler compounds and thermoelectric materials.





## Keynote

**Aleksandr Burkov**

Ioffe Institute

**Aleksandr Burkov** is a condensed matter physicist with a long and distinguished career specializing in thermoelectric materials. He earned his PhD from the Leningrad State Polytechnic Institute in 1981 and his Doctor of Science degree from the Ioffe Institute in 2008, where he has spent most of his professional career. Since 2015, he has served as Head of the Laboratory for Physics of Thermoelements at the Ioffe Institute in St. Petersburg, progressing through the ranks from Junior Researcher to laboratory head. His international experience includes serving as a Professor of Physics at the University of the Ryukyus in Japan. His primary research interests include the structure and transport properties (electronic and heat) of condensed matter, with a direct application to thermoelectric energy conversion.

**Byungchan Han**

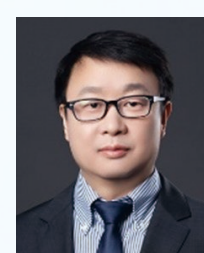
Yonsei University

**Byungchan Han** is a Distinguished Professor and Associate Dean of the School of Engineering at Yonsei University, Seoul, Republic of Korea, where he currently holds the Whalcheon Distinguished Professorship. He received his Ph.D. in Materials Science and Engineering from the Massachusetts Institute of Technology (MIT) in 2007, following M.S. and B.S. degrees in Nuclear Engineering from Seoul National University. Prior to joining Yonsei University, he conducted postdoctoral research at MIT and Stanford University, and served as Assistant and Associate Professor at DGIST. Professor Han has held numerous leadership and professional service roles, including Board Director of the Korean Federation of Science and Technology Societies (KOFST), Vice President of the Korean Society for Surface Science and Engineering, and organizer for the American Institute of Chemical Engineers (AIChE). He currently serves as an Editor of Applied Surface Science and previously as Associate Editor of Scientific Reports. He has also contributed to national and international initiatives, including USA–Korea joint projects on spent nuclear fuel pyro-processing and the organization of the Nano Korea Conference, one of the world's largest nanoscience conferences.

**Pierre Ferdinand Poudeu**

University of Michigan

**Pierre Ferdinand Poudeu** is a Professor of Materials Science and Engineering (MSE) at the University of Michigan (UM). He earned a Ph.D. in Inorganic Solid-State Chemistry (2004) from the Technical University of Dresden in Germany and conducted postdoctoral study at Michigan State University (2004 – 2006) and Northwestern University (2006 – 2007). In 2011, Dr. Poudeu moved to the MSE Department at UM and established the “Laboratory for Emerging Energy and Electronic Materials (LE3M)”. He was promoted to Associate Professor with tenure in 2015 and to full Professor in 2020. His laboratory conducts research on advanced materials for applications in electronic and energy conversion devices. This includes the development of Thermoelectric Materials; Low-dimensional Spintronic Materials; and Strongly Coupled Optoelectronic Heterostructures. Dr. Poudeu's scientific accomplishments are well documented in over 140 published (google scholar h-index: 36) peer-reviewed research articles. He has graduated 12 PhDs, mentored 16 Master's students, 6 postdocs, and over 60 undergraduate students. Dr. Poudeu also served as the chair of the MSE Master's program and UM from 2015 to 2023. His achievements have been recognized by a Career Award from NSF-DMR (2010), a special creativity extension award from NSF-DMR (2019), an Outstanding Accomplishment Faculty Award from UM-MSE (2019).

**Jinsong Wu**

Wuhan University of Technology

**Dr. Jinsong Wu** is a professor at Wuhan University of Technology and the executive director of the Nanostructure Research Center. He obtained his Ph.D. degree in materials science and engineering in 1998 at Dalian University of Technology. He was trained at Beijing Laboratory of Electron Microscopy in China and gained expertise through several electron microscopy centers in the world, such as Ruska Electron Microscopy Center in Juelich, Germany and the John Cowley Center for High Resolution Electron Microscopy (HREM) at Arizona State University. He oversees the transmission electron microscopes in electron probe instrumentation center (EPIC) at Northwestern University (USA), prior to joining the Nano-Research Center at Wuhan University of Technology (WUT). He is the recipient of Humboldt research scholarship in 1999, the outstanding overseas scholar in 2022. He has published more than 300 papers in high prestigious international journals including Science, Nature Materials, Nature Nanotechnology, etc. He is currently the executive director of Nano-Research Center at WUT. His research interests are in the in-situ transmission electron microscopy, development of high-performance cathodes materials for Li and Na-ion batteries, and novel functional materials for memristors.





## Keynote

**Xiaolu Pang**

University of Science and Technology Beijing

**Prof. XiaoLu Pang** received a Ph.D. in materials science and engineering from University of Science and Technology Beijing (USTB) in 2008. After that, he became a research assistant, associate professor, and then a full-time professor at the USTB. Now, he is the director of national science center for materials service safety. His research interests include the study of protective coatings on metal material surfaces, especially in the preparation of high-strength and tough nanotwinned ceramic coatings. He improved the theory for protecting the metal substrate from damage caused by brittle ceramic coatings cracking, improved the fatigue resistance of coated metal materials. He has published nearly 190 SCI papers, including Nature Comm. Acta Mater, Corros Sci and other journals, with over 6800 citations.

**Wenbin Cao**

University of Science and Technology Beijing

**Wenbin Cao** is a Full Professor of Materials Science at the University of Science and Technology Beijing (USTB). His research centers on TiO<sub>2</sub>-based photocatalytic materials and related functional materials for clean energy conversion, environmental purification, and large-scale engineering applications. He has published over 200 peer-reviewed papers, holds 30+ patents, and has led 20+ nationally funded and industry-supported projects. Professor Cao's work bridges fundamental materials design and scalable engineering implementation. He has extensive experience collaborating with research institutes and industries, in translating laboratory-scale materials into scalable and reliable functional systems.

**Elvira Fortunato**

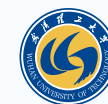
NOVA University Lisbon and CEMOP/UNINOVA

**Elvira Fortunato** is a distinguished scientist, academic leader, and science policy figure with significant national and international impact. She holds a PhD in Microelectronics and is a global pioneer in transparent electronics, best known as the inventor of the first paper transistor, and is currently the most cited researcher at NOVA University Lisbon. She has played a key role in shaping science and higher education policy, notably serving as Portugal's Minister of Science, Technology and Higher Education, where she promoted strategies aligning scientific research, higher education, and national priorities. As Vice-Rector for Research at NOVA University Lisbon, she led major reforms of the university's research governance and support systems, including the establishment of the Strategic Council for Science, the launch of NOVA Science and NOVA Science Day, and the restructuring of the Research Support Office to strengthen scientific strategy, project management, and research information systems. At the European level, she served as Chief Scientific Advisor to the European Commission, providing direct scientific advice to EU Commissioners and coordinating strategic studies on emerging technologies such as carbon capture and sustainable mobility. In parallel, she is a committed advocate for science education, STEM promotion, gender equality, and the training of future generations of scientists, emphasizing science as a driver of inclusive and sustainable development.

**Paolo Fornasiero**

University of Trieste

**Paolo Fornasiero** has held the Chair of Inorganic Chemistry at the Department of Chemical and Pharmaceutical Sciences, University of Trieste, since December 2016. He currently serves as Vice-Rector for Research, Deputy Director of the Department, and Member of the Academic Senate of the University of Trieste. He is a Fellow of the European Academy of Sciences (2021), the Academia Europaea (2022), and the European Academy of Sciences (2025). His research focuses on inorganic chemistry, particularly the design and development of multifunctional nanosystems for applications in energy-related processes and environmental heterogeneous catalysis. Professor Fornasiero is co-inventor of three patents and has published more than 350 articles in leading international journals, including Science, Nature, Nature Energy, PNAS, Advanced Materials, Angewandte Chemie, JACS, ACS Nano, and Energy & Environmental Science, with over 44,000 citations (h-index 94, Scopus; 105, Google Scholar). He has delivered over 287 invited lectures worldwide, including 60 keynote and 25 plenary talks, and serves as Executive Editor of ACS Catalysis. His awards include the Nasini Medal, Chiusoli Medal, Malatesta Award, Heinz Heinemann Award, and several honors from Italian and international scientific academies. He has also served on major international grant evaluation panels, including ERC Advanced Grants and Methusalem Grants, and was a Visiting Scientist Fellow of the Chinese Academy of Sciences in 2018.



## Keynote

**Ion Tiginyanu**

Technical University of Moldova, Academy of Sciences of Moldova

**Prof. Ion Tiginyanu** graduated from Moscow Institute of Physics and Engineering in 1978 and received his Ph.D. in Semiconductor Physics from Lebedev Institute of Physics, Moscow, in 1982. He conducted research as an Alexander von Humboldt fellow at Technical University Darmstadt, Germany, and at the University of Michigan, USA. He became a full professor at the Technical University of Moldova in 1993, served as vice-rector from 1998 to 2004, and has been vice-president (2004) and president (2019) of the Academy of Sciences of Moldova. Since 2001, he has served as founding director of the National Center for Materials Study and Testing. His research focuses on nanotechnologies, smart multifunctional nanomaterials, and novel photonic and electronic devices. He has authored over 450 journal publications and holds 54 patents, including pioneering work on surface charge lithography, hopping electrodeposition, and the first artificial dual hydrophobic/hydrophilic material (Aerogalnite). Prof. Tiginyanu has received the 'Outstanding Inventor' Award from WIPO, is a member of Academia Europaea, honorary member of the Romanian Academy, and a Fellow of both the International Science Council and SPIE.

**Junying Zhang**

Beihang University

**Prof. Junying Zhang** is a full professor in School of Physics, Beihang University. She is dedicated to understanding the energy transfer and charge transfer in functional materials, and developing high-performance energy conversion and storage materials with the "structure-performance relationship" strategy. She has co-authored more than 240 peer-reviewed journal publications, achieving an h-index of 61, contributed to an edited book, and been granted over 20 invention patents in China. She is also a recipient of the Second Prize of the Natural Science Award from the Ministry of Education of China.

**Jing Sun**

Shanghai Institute of Ceramics, Chinese Academy of Science

**Jing Sun** is a Professor and Doctoral Supervisor at the State Key Laboratory of High Performance Ceramics and Superfine Microstructures, Shanghai Institute of Ceramics, Chinese Academy of Sciences. Her research focuses on controllable synthesis of nanoscale functional materials, nanoscale effect enhancement mechanisms, and applications in environmental purification. She has developed materials and devices for efficient capture and degradation of VOCs, CO<sub>2</sub>, O<sub>3</sub>, and other pollutants in confined and semi-confined spaces. She has published over 300 papers in journals including Advanced Materials, Applied Catalysis B: Environmental, ACS Nano, and Journal of the American Chemical Society, with more than 10,000 citations and an h-index of 64. Her achievements have been featured by the Science website, Materials Views, the National Natural Science Foundation of China website, and China Daily. She has led over 20 projects funded by the Ministry of Science and Technology, the National Natural Science Foundation of China, and the Shanghai Municipal Government, authored one monograph, holds over 60 authorized patents, and contributed to three national or industrial standards. Her honors include the National and Shanghai March 8th Red Banner Pacesetter awards, Shanghai Leading Talent, and Shanghai Distinguished Young Scholar. She serves as Director of the Chinese Society of Micro-Nano Technology, Associate Editor-in-Chief of the Journal of Inorganic Materials, and Editorial Board Member of npj Computational Materials, Scientific Reports, and Aerosol Science and Engineering.

**PAN Hui**

University of Macau

**Dr. Hui Pan** is a professor and the associate director in the Institute of Applied Physics and Materials Engineering at the University of Macau. He got his PhD degree in Physics from the National University of Singapore in 2006. From 2006 to 2013, he worked at National University of Singapore as a Research Fellow, Oak Ridge National Laboratory (USA) as a Postdoctoral Fellow, and Institute of High Performance Computing (Singapore) as a Senior Scientist, respectively. He joined the University of Macau as an assistant professor in 2013. In his research, a combined computational and experimental method is used to design and fabricate novel nanomaterials for applications in energy conversion and storage (such as electro-/photo-catalysis, water splitting, and NO<sub>x</sub>/CO<sub>2</sub> reduction), electronic devices, and spintronics. He has published ~ 330 SCI papers with a total citation of 22000 and a h-index of 83 (Google Scholar).



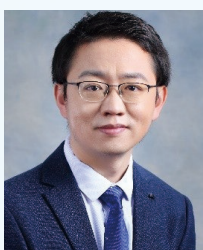
## Keynote



**Sang sub Kim**

Inha University

**Professor Sang Sub Kim** is a distinguished scholar in materials science, widely recognized for his contributions to thin-film processing, surface and interface engineering, nanostructured materials, and chemical sensors. He has been a Professor in the Department of Materials Science and Engineering at Inha University since 2007. He received his B.S. in Metallurgical Engineering from Seoul National University in 1987, followed by M.S. (1990) and Ph.D. (1994) degrees in Materials Science from POSTECH. His early career included research positions at Daewoo Precision and the Korea Institute of Science and Technology, followed by faculty appointments at Sunchon National University and Chonnam National University. Professor Kim has also gained extensive international research experience as a Visiting Scientist at the National Institute for Materials Science, Japan, and as a Visiting Professor at the University of Alberta, Canada, and Nagaoka University of Technology, Japan. He is a Fellow of the Korean Academy of Science and Technology (since 2018) and a Full Member of the National Academy of Engineering of Korea (since 2025), and served as President of the Materials Research Society of Korea in 2022. He has published over 500 SCI-indexed papers with an H-index of 86 and more than 21,000 citations, and actively serves on the editorial boards of several international journals, including Scientific Reports, Metals and Materials International, Electronic Materials Letters, Journal of Sensors, Sensors, and Applied Sciences.



**Qipeng Lu**

University of Science and Technology Beijing

**Qipeng Lu** is a Professor in the School of Materials Science and Engineering at the University of Science and Technology Beijing. He received his M.Sc. (2010) and Ph.D. (2014) from Beijing Jiaotong University under the supervision of Prof. Yanbing Hou. During his doctoral studies, he was a joint Ph.D. student in Materials Chemistry at the University of California, Riverside (2011–2013), supervised by Prof. Yadong Yin. He subsequently conducted postdoctoral research in Materials Science and Engineering at Nanyang Technological University, Singapore (2014–2018), under the supervision of Prof. Hua Zhang. His research focuses on the development of advanced catalytic materials and high-efficiency energy conversion devices. He has served as principal investigator on eight national and provincial research projects. He has authored more than 120 SCI-indexed publications, including 17 ESI Highly Cited Papers. As first or corresponding author, he has published over 60 articles in leading journals such as Nature Chemistry, Nature Communications, Advanced Materials, Journal of the American Chemical Society, Angewandte Chemie International Edition, Advanced Functional Materials, Advanced Energy Materials, ACS Nano. He holds more than ten granted or filed invention patents and is the first author of one Chinese monograph as well as a co-author of two English-language monographs. He has been selected for Beijing Nova Program and National Young Talent Program.



**Chengtie Wu**

Shanghai Institute of Ceramics, Chinese Academy of Sciences

**Prof. Chengtie Wu** is a Group Leader at the Shanghai Institute of Ceramics, Chinese Academy of Sciences (CAS), and Director of the Suzhou Institute of Biomedical Engineering and Technology, CAS. He is a Fellow of Biomaterials Science and Engineering (FBSE) and a Fellow of the Chinese Society for Biomaterials (FCSBM). He received his Ph.D. from SICCAS in 2006 and subsequently conducted research at the University of Sydney, Dresden University of Technology, and Queensland University of Technology, where he was awarded the Vice-Chancellor Research Fellowship and the Alexander von Humboldt Fellowship. In 2012, he joined SICCAS through the CAS Overseas High-Level Talent Program and later received multiple national honors, including the National Science Fund for Outstanding Young Scholars and Leading Talent programs. His research focuses on the development of novel bioactive materials for tissue and organ repair, regeneration, and treatment of major diseases. Prof. Wu serves as Co-Editor-in-Chief of Biomedical Engineering Frontier, Associate Editor of Journal of Inorganic Materials, and editorial board member of Acta Biomaterialia and Bioactive Materials. He has published over 340 peer-reviewed papers (H-index 102), holds 96 patents, and has been listed as a Highly Cited Chinese Researcher by Elsevier for ten consecutive years.



**Qunfeng Cheng**

University of Science and Technology of China

**Professor Qunfeng Cheng** is a professor in the University of Science and Technology of China. He has discovered for the first time the void defects in the 2D nanocomposites induced by capillary contraction, and developed a new strategy of sequential bridging and nanoconfinement assembly to cure the void defects for creating high performance 2D nanocomposites with excellent mechanical and electrical properties. Dr. Cheng has been awarded the XPLOER PRIZE, the Meituan Green Tech Award, the Beijing Distinguished Young Zhongguancun Award, the Mao Yi-sheng Science and Technology Award-Beijing Youth Science and Technology Award, and China Young Scientist Award of Composites Society, etc. Dr. Cheng has published more than 100 papers including 3 papers in Science, 1 paper in Nature, with over 12,000 citations, and a Google Scholar h-index of 63. He has authorized 40 Chinese patents and has authored the book “Bioinspired Layered Two-dimensional Nanocomposites”.





## Keynote



**Mingjie Liu**

Beihang University

**Prof. Mingjie Liu** is currently a full time professor at Beihang University. He received his B.S. degree in applied chemistry (2005) from Beijing University of Chemical Technology. In 2005, he joined Prof. Lei Jiang's group and received his Ph.D. degree from the National Center for Nanoscience and Technology, Chinese Academy of Sciences (2010). He then worked as a postdoc in Prof. Takuzo Aida's group in Riken in Japan from 2010 to 2015. In 2015, he joined Beihang University and became a full professor. He has published 170+ papers in prestigious journals such as Nature (2), Science (1), Nat. Rev. Mater, Nat. Mater. Nat. commun., Angew. Chem. Int. Ed. and Adv. Mater. His scientific interests focus on bio-inspired design of adaptive gel materials through multi-phase order-structure engineering and explore their applications in anti-biofouling coatings, thin-film fabrication, flexible electronics and soft robotics. He was awarded the National Science Fund for Distinguished Young Scholars (2017). The Changjiang Scholars Program of China (2018), The Outstanding Young Scholars of International Society of Bionic Engineering (2019).



**Shengmin Zhang**

Huazhong University of Science and Technology

**Professor Shengmin Zhang** Ph.D., is an internationally recognized leader in innovative biomaterials, regenerative medicine, and medical devices. He is a Fellow of IUSBSE, the Royal Academy of Sciences of New Zealand (RASNZ), and the Chinese Society for Biomaterials (CSBM). He has received the TERMIS-Asia Pacific Lifetime Achievement Prize and the First Prize of the National Science and Technology Award from the Chinese Society for Biomaterials. He currently serves as Dean of the Institute of Regulatory Science for Medical Devices, Director of the NMPA Research Base of Regulatory Science for Medical Devices, and Director of the Advanced Biomaterials & Tissue Engineering Center at Huazhong University of Science and Technology, while also acting as President of TERMIS-Asia Pacific and Vice President of the Chinese Society for Biomaterials. Professor Zhang pioneered the concept of bioenergetic-active materials and proposed the "Fourth Element of Tissue Engineering"—physical stimuli—significantly influencing fundamental theory and regulatory perspectives. He also established the widely cited "one scaffold, two tissues" strategy for osteochondral interface regeneration. A pioneer in clinical translation, he has led the development of functional element-doped bone grafts and bioactive resorbable medical devices used clinically for over 15 years. More than 50 of his patents have been translated into 11 marketed medical devices approved by NMPA, FDA, and EAEU authorities, alongside extensive contributions to regulatory science and public engagement in biomaterials.



**Mingzhu Li**

Technical Institute of Physics and Chemistry  
Chinese Academy of Sciences

**Dr. Mingzhu Li** is a full professor at Technical Institute of Physics and Chemistry, Chinese Academy of Sciences and Fellow of the Royal Society of Chemistry (FRSC). Her interests lie in the design, fabrication, and application of bioinspired micro/nano photonic materials. She has published more than 100 peer-reviewed SCI journal articles, including Science, PNAS, Sci. Adv., and so on. She has received several awards including the National Science Fund for Distinguished Young Scholars, the first prize of Beijing Science and Technology Award, etc. She has joined the Editorial Boards of Journal of Materials Chemistry C and Materials Advances as an Associate Editor since April, 2023.



**Hirofumi Tanaka**

Kyushu Institute of Technology (Kyutech)

**Prof. Tanaka** completed his Ph.D. in Materials Science at Osaka University in 1999, studying the structural and magnetic properties of ferromagnetic nanoalloys. He then joined RIKEN as a special postdoctoral researcher to investigate the conductivity of metallic nanowires using double-probe scanning tunneling microscopy, and later advanced the molecular-ruler lithography method as a postdoctoral researcher at Pennsylvania State University under Prof. Paul Weiss. In 2003, he became Assistant Professor at the Research Center for Molecular-Scale Nanoscience, Institute for Molecular Science, directing research in molecular electronics using carbon nanotube electrodes and demonstrating that gold nanoparticles can switch SWNTs from metallic to semiconducting conduction. From 2004 to 2008, he worked on atomic switches under a key MEXT project, receiving the Excellent Journal Award from the Japan Society of Applied Physics in 2012. Since 2014, he has been Full Professor at Kyushu Institute of Technology, focusing on bio-mimic and neuromorphic AI nanodevices, and has served as Director of the Research Center for Neuromorphic AI Hardware since 2020. He received an honorary degree from Suranaree University of Technology, Thailand, in 2021, and currently leads the ALCA-NEXT national project (2023–2026) on carbon-neutral green computing.



## Keynote

**Gang Zhang**

Beijing Institute of Technology

**Gang Zhang** obtained B. Sci and Ph. D. in physics at Tsinghua University in 1998 and 2002, respectively. He is currently a strategic scientist in Beijing Institute of Technology, and Honorary Professor in University of Wollongong, Australia. Prior to that, he was a senior principal scientist in Institute of High Performance Computing (IHPC), A\*STAR, Singapore (2013-2024), and a professor at Department of Electronics, Peking University (2010-2013). He has ground-breaking contribution in nanoscale thermal conduction and computational material science. He has published more than 380 referred papers, with citations over 32,000 and an h-index of 93. He serves as advisory board member of Nanoscale and Nanoscale Advances, advisory board member of ES Energy & Environment, technical committee member of IEDM, associate editor of Journal of Electronic Materials, etc. He is Committee member of Chinese Society of Micro-Nano Technology, and Committee member of Computational Physics Group, IOP, UK. He is elected Fellow of American Physical Society (APS), and fellow of Institute of Physics (IOP), United Kingdom.

**Yan Zhao**

Sichuan University

**Professor Yan Zhao** is the Distinguished Professor of Materials Science and Engineering at Sichuan University, Chengdu, PRA. Professor Zhao received a Ph.D. degree in Chemistry from the University of Minnesota (2005). In 2017, he became a Distinguished Professor of Materials Science at Wuhan University of Technology and later an adjunct Professor at Wuhan University in 2019. Prof. Zhao has made seminal contributions to various research areas, including high-precision theoretical chemistry databases, new-generation density functional theory, nanomaterial simulation, computational catalysis, computational chemistry software, and 3D printing. His M06 suite of density functional methods are widely adopted by research groups globally, including by eleven Nobel laureates. With over 320 research papers authored, his work has received more than 75,000 citations according to Web of Science. He consistently achieved global recognition as a "Highly Cited Researcher" in 2014, 2015, 2016, 2017 and 2025, with an H-index of 88. Professor Zhao is a key contributor to HP's MJF-3D printing technology, holding 25 international patents. He serves as an associate editor for "Energy & Environmental Materials," academic editor for "Interdisciplinary Materials," and editorial board member for "Nanomaterials."

**Tierui Zhang**Technical Institute of Physics and Chemistry  
Chinese Academy of Sciences

**Dr. Tierui Zhang** is a full Professor in Technical Institute of Physics and Chemistry (TIPC), Chinese Academy of Sciences (CAS). He received his Ph.D. in Organic Chemistry in 2003 from Jilin University in China. His research activity focuses on catalyst nanomaterials for energy conversion such as photocatalytic solar fuels and value-added chemicals. He has published more than 380 peer reviewed SCI journal articles in international famous journals such as Nat. Catal. These publications have earned him to date over 54000 citations with H-index 126. He was named in the annual Highly Cited Researchers 2018-2025 List by Clarivate Analytics. Zhang is the editor-in-chief of Cambridge Materials Energy, and associate editor of Science Bulletin, Industrial Chemistry & Materials, Nano Research Energy and Transactions of Tianjin University, and also serves as an editorial board member for peer-reviewed journals including Advanced Energy Materials, Advanced Science, Chemical Science. He is the recipient of a number of awards including Alexander von Humboldt Fellowship, Royal Society-Newton Advanced Fellowship, "Outstanding Young Scholars" of the National Science Fund. He was named a fellow of the Royal Society of Chemistry (FRSC) in 2017 and a fellow of the Chinese Chemical Society (FCCS) in 2023. More information can be found from his homepage <http://zhanglab.ipc.ac.cn>.

**Haiqing Yin**

University of Science and Technology Beijing

**Yin Haiqing** is the Professor of University of Science and Technology Beijing. She is the deputy director of Beijing Key Laboratory of Material Genome Engineering, member of Scientific Data Expert Group of National Technical Committee for Standardization of Science and Technology Platforms, member of Asian Materials Data Committee and Chinese Liaison, member of Powder Metallurgy Industry Technology Innovation Strategic Alliance, member of CSTM Data Committee for Material Genome Engineering, and member of the editorial board of Data in Brief and Powder Metallurgy Industry. He has involved in more than 30 research projects, including the National Key Research and Development Project, the National Natural Science Foundation project of China, the United Fund of national NSF Project, the National Science and Technology Basic Condition Platform Construction Project, the Beijing Natural Science Foundation and the Science and Technology Project, and the USTB- Enterprise joint Programs etc. He has won two first-class prizes and three second-class prizes of provincial and ministerial-level scientific and technological achievement awards. He has published more than 100 academic papers and authorized more than 10 patents.



# Conference Agenda

Time	Events	Place
📅 January 12th, 2026 (Monday)		
10:00-22:00	Registration	
14:00-15:40	Pre-conference Lectures	Wuhan University of Technology
📅 January 13th, 2026 (Tuesday)		
08:30-08:45	Opening Ceremony Speeches	Hanyang Hall + Wuchang Hall
08:45-12:20	Plenary Lectures	
12:20-13:30	Lunch Break	
13:30-17:20	Session A: Green Processing of Materials	Hanyang Hall
	Session B: Eco-Materials, Materials Remediation and Recycling	Shimao 5 Hall
	Session C: Energy Conversion and Storage Materials	Shimao 3A/B Hall
	Session D: Environmental Protection Materials and Surface Technology	Wuchang Hall
	Session E: Bio-Inspired Materials and Bioprocessing-Inspired Fabrication	Hankou Hall
	Session F: AI for Materials Processing and Design	Shimao 1A/B Hall
📅 January 14th, 2026 (Wednesday)		
08:30-12:00	Session A: Green Processing of Materials	Hanyang Hall
	Session B: Eco-Materials, Materials Remediation and Recycling	Shimao 5 Hall
	Session C: Energy Conversion and Storage Materials	Shimao 3A/B Hall
	Session D: Environmental Protection Materials and Surface Technology	Wuchang Hall
	Session E: Bio-Inspired Materials and Bioprocessing-Inspired Fabrication	Hankou Hall
	Session F: AI for Materials Processing and Design	Shimao 1A/B Hall
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	Session B: Eco-Materials, Materials Remediation and Recycling	Shimao 5 Hall
	Session C: Energy Conversion and Storage Materials	Shimao 3A/B Hall
	Session D: Environmental Protection Materials and Surface Technology	Wuchang Hall
	Session E: Bio-Inspired Materials and Bioprocessing-Inspired Fabrication	Hankou Hall
	Session F: AI for Materials Processing and Design	Shimao 1A/B Hall



January 13th, 2026 08:30-08:45

📍 Hanyang Hall + Wuchang Hall

## Opening Ceremony Speeches

January 13th, 2026 08:45-12:20

📍 Hanyang Hall + Wuchang Hall

## Plenary lecture

Time	Name	Affiliation	Title
Chair: Soo Wohn Lee			
08:45-09:25	Lei Jiang	Technical Institute of Physics and Chemistry, Chinese Academy of Sciences	Quantum Ionics: Ultra-low Energy Consumption of Energy Conversion/Information Transmission in Biologic System
Chair: Sanjay Mathur			
09:25-10:05	Rodrigo Martins	NOVA University Lisbon	The Rise of Transparent and Paper Electronics
10:05-10:20		Coffee Break	
Chair: Jianfeng Yang			
10:20-11:00	Heon Lee	Korea University	Large Area Fabrication of Meta-lens and Meta-hologram using Nanoimprint Lithography
Chair: Byungha Shin			
11:00-11:40	Tohru Sekino	The University of Osaka	Eco-friendly Materials Design, Processing and Development for Future Ceramics Applications
Chair: Santi Maensiri			
11:40-12:20	Liangbi Su	Shanghai Institute of Ceramics, Chinese Academy of Sciences	The Innovation-driven Development of Fluoride Optical Functional Crystals: Synthesis and Applications Pushing the Limit

January 13th, 2026 PM

♀ Hanyang Hall

Session A
Green Processing of Materials

Time	Name	Affiliation	Title	Type
Chair: Yaoxin Zhang, Huaiguang Li				
13:30-13:55	Hao Wang	Wuhan University of Technology	Preparation and Microstructure of Transparent ZnO-nAl <sub>2</sub> O <sub>3</sub> Spinel Ceramics	Keynote
13:55-14:20	Shotaro Tada	Indian Institute of Technology Madras	Designing Functional Ceramics via Polymer-Derived Routes: Opportunities for Sustainable Catalysis and Energy Applications	Keynote
14:20-14:40	Bo Wang	Xi'an Jiaotong University	Fabrication and Properties of Nature Wood-derived Bio-Ceramics	Invited
14:40-15:00	Qiang Zhi	Xi'an Aeronautical Institute	Fabrication and Performance Study of Highly Porous Silicon Nitride Ceramics with High Specific Strength via Freeze Casting	Invited
15:00-15:20	Coffee Break			
Chair: Shotaro Tada, Bo Wang				
15:20-15:40	Xinlong Tian	Hainan University	Highly stable electrocatalysts for oxygen reduction reaction	Invited
15:40-16:00	Yaoxin Zhang	Shanghai Jiao Tong University	Materials Design for Energy Conversion and Regulation at Solar Water Evaporation Interfaces	Invited
16:00-16:20	Huaiguang Li	The Chinese University of Hong Kong, Shenzhen	Charged Sorbent for Direct Air Capture	Invited
16:20-16:35	Heng Zhang	Shanghai Institute of Ceramics, Chinese Academy of Sciences	Improving the Mechanical Properties of Porous Si <sub>3</sub> N <sub>4</sub> Ceramics: Microstructural Optimization Strategies Based on Pore and Grain Morphology	Oral
16:35-16:50	Jierui Mu	Shanghai Jiao Tong University	Layered Laser-parameter Design of Additively Manufactured Metallic Lattices for Electrochemical Polishing: Balancing Dimensional Accuracy and Specific Strength	Oral

January 13th, 2026 PM

♀ Shimao 5 Hall

Session B
Eco-Materials, Materials Remediation and Recycling

Time	Name	Affiliation	Title	Type
Chair: Bo Peng, Minghui Sun				
13:30-13:55	Santi Maensiri	Suranaree University of Technology	Synthesis and Characterization of Nanomaterials and Composites for Energy Storage Applications	Keynote
13:55-14:20	Xiang-Ju Meng	Zhejiang University	Green Routes for Synthesis of Zeolites	Keynote
14:20-14:40	Jinxing Chen	Soochow University	Catalytic Upcycling of Polyolefin Wastes	Invited
14:40-15:00	Bo Weng	Institute of Urban Environment, Chinese Academy of Sciences	Machine Learning-guided Design of High-entropy Alloy Based Catalysts Toward photo-peroxymonosulfate Activation for Water Purification	Invited
15:00-15:20 Coffee Break				
Chair: Xiang-Ju Meng, Jinxing Chen				
15:20-15:45	Bo Peng	Sinopec Research Institute of Petroleum Processing Co., Ltd.	Conversion Pathway of Polyolefin and Its Practical Scenario	Keynote
15:45-16:05	Minghui Sun	Wuhan University of Technology	Hierarchically Porous Zeolites for Maximized Catalytic Efficiency	Invited
16:05-16:25	Yanxin Chen	Fujian Institute of Research on the Structure, Chinese Academy of Sciences	Design of Modified Metal Oxide-Based Materials for PC/PEC Water-Splitting H <sub>2</sub> Generation and CO <sub>2</sub> Reduction	Invited
16:25-16:40	Wang Wang	Wuhan University of Technology	The Design and Synthesis of Catalysts for the Photosynthesis of H <sub>2</sub> O <sub>2</sub>	Oral
16:40-16:55	Jiaxing Liao	Wuhan University of Technology	A Novel Green-emitting Mg <sub>0.75</sub> Al <sub>2.16</sub> O <sub>4</sub> :Mn <sup>2+</sup> Transparent Ceramic Phosphor for White Light-emitting Device	Oral



January 13th, 2026 PM

♀ Shimao 3A/B Hall

**Session C** Energy Conversion and Storage Materials

Time	Name	Affiliation	Title	Type
Chair: Jianguo Tang, Jinsong Wu				
13:30-13:55	Shu Yin	Tohoku University	Novel Concept of Response Behavior Selectivity-A Novel Route to Ultra-Selective Gas Detection	Keynote
13:55-14:20	Chunjoong Kim	Chungnam National University	Multi-Length Scale Observation about Li-ion Intercalation in Electrode Materials	Keynote
14:20-14:45	Jae Hyun Kim	Daegu Gyeongbuk Institute of Science & Technology	Reimagining Composite Solid Polymer Electrolytes for Li-Metal Batteries	Keynote
14:45-15:00	David Patrun	University of Cologne	From Anode-free Designs to Bendable Electrodes: Linking Flexibility and High Energy Density Battery Systems	Oral
15:00-15:20 Coffee Break				
Chair: Shu Yin, Chunjoong Kim				
15:20-15:45	Jianguo Tang	Qingdao University	Polymeric Hybrid Nanoaggregates (PHAs) for Multiple Photon Quantum Effects from Nanoclusters to Macro Composites	Keynote
15:45-16:10	Jinsong Wu	Wuhan University of Technology	Entropy-increased LiMn <sub>2</sub> O <sub>4</sub> Cathodes for Fast-charging Lithium-ion Batteries	Keynote
16:10-16:30	Yaoguang Rong	Wuhan University of Technology	Versatile Optoelectronic Devices Based on Metal Halide Perovskites	Invited
16:30-16:45	Seungmi Lee	The University of Osaka	Boosting Ionic and Electronic Transport in V <sub>2</sub> O <sub>5</sub> Cathodes via Cold Sintering Process for Lithium-Ion Batteries	Oral
16:45-17:00	Kihyun Shin	Hanbat National University	Possible Strategies to Overcome Linear Scaling Relation	Oral
17:00-17:15	Ziyaad Aytuna	University of Cologne	Molecular Strategies for Binary MO <sub>2</sub> (M = V, Sn, Ti, Zr, Hf) High- Entropy Oxides: Superior Catalysts for Enhanced Oxygen Evolution	Oral

January 13th, 2026 PM

♀ Wuchang Hall

**Session D** Environmental Protection Materials and Surface Technology

Time	Name	Affiliation	Title	Type
Chair: Paolo Fornasiero, Wei Geng				
13:30-13:55	Xiaolu Pang	University of Science and Technology Beijing	High-density Twin Boundaries in Transition Metal Nitride Ceramic Coatings with Boron Doping	Keynote
13:55-14:20	Elvira Fortunato	NOVA University Lisbon	Eco Materials for Sustainable Electronics	Keynote
14:20-14:40	Jingping Hu	Huazhong University of Science and Technology	Green Recycling and High-Value Utilization of Spent Lithium-Ion Battery Cathode Materials	Invited
14:40-15:00	Qi Wang	University of Science and Technology Beijing	Controllable Synthesis of Multi-morphology Nitrides Fillers and Their Application in Thermally Conductive Composites	Invited
15:00-15:20 Coffee Break				
Chair: Elvira Fortunato, Qi Wang				
15:20-15:45	Wenbin Cao	University of Science and Technology Beijing	Bridging Fundamental Research and Scalable Applications in TiO <sub>2</sub> -based Photocatalysis	Keynote
15:45-16:10	Paolo Fornasiero	University of Trieste	The Criticality of Metal Particle Size Speciation in Sustainable Catalysis	Keynote
16:10-16:30	Wei Geng	Wuhan University of Technology	Cell Surface Engineering for Biohydrogen Production	Invited
16:30-16:45	Jing Cao	The University of Osaka	Ni Single-atom Anchored N-doped Carbon Loaded on BaTiO <sub>3</sub> for Efficient Piezocatalytic CO <sub>2</sub> Reduction	Oral
16:45-17:00	Junjie Ding	Wuhan University of Technology	Atomistic Insights into Topochemical Reactions in the BiFeO <sub>3</sub> System	Oral
17:00-17:15	Shuaihang Qiu	Wuhan University of Technology	Achieving Superhardness and Enhanced Toughness in High-entropy Boride-based Composites by Tailoring Their Multi-scale Microstructures	Oral

January 13th, 2026 PM

♀ Hankou Hall

Session E
Bio-Inspired Materials and Bioprocessing-Inspired Fabrication

Time	Name	Affiliation	Title	Type
Chair: Sijie Wan, Kai Li				
13:30-13:55	Chengtie Wu	Shanghai Institute of Ceramics, Chinese Academy of Sciences	3D Printing of Biomimetic Biomaterials and Transformation	Keynote
13:55-14:20	Qunfeng Cheng	University of Science and Technology of China	Bioinspired Confined Creation of Nanocomposites	Keynote
14:20-14:40	Yanan Jiang	Beijing Normal University	In Vivo Electrochemical Sensing Based on Bio-inspired Iontronic Devices	Invited
14:40-15:00	Bingqiang Lu	ShangHai Stomatological Hospital, FuDan University	Mechanism of Porosity Formation During the Self-Setting Process of Polyphosphate Coacervate and its Application	Invited
15:00-15:20 Coffee Break				
Chair: Yanan Jiang, Bingqiang Lu				
15:20-15:45	Mingjie Liu	Beihang University	Bionic Multiphase Confined Composite Polymer Materials	Keynote
15:45-16:10	Mingzhu Li	Technical Institute of Physics and Chemistry, Chinese Academy of Sciences	Bioinspired Micro-nano Photonic Materials	Keynote
16:10-16:30	Tianzhu Zhou	University of Science and Technology of China	Large-Scale Fabrication of High-Performance MXene Fibers For Wearable Textile	Invited
16:30-16:50	Kai Li	Shanghai Institute of Ceramics, Chinese Academy of Sciences	Manganese Supplementation of Orthopedic Implant Coatings for Remodeling of Disease Microenvironments	Invited
16:50-17:05	Jiansheng Fu	Institute of Tokyo Science	Fluorescent Response of Octacalcium Phosphate with Incorporated 3,5-pyridinedicarboxylate Ions with Different pH	Oral

January 13th, 2026 PM

♀ Shimao 1A/B Hall

Session F
AI for Materials Processing and Design

Time	Name	Affiliation	Title	Type
Chair: Gang Zhang, Naigen Zhou				
13:30-13:55	Hirofumi Tanaka	Kyushu Institute of Technology	Highly Energy Efficient Material Physical Reservoir Computing Devices Made of Nanomaterial Random Network	Keynote
13:55-14:15	Caichao Ye	Southern University of Science and Technology	Exploring of Organic Polymer Functional Materials by Machine Learning Based on "Polymer Unit"	Invited
14:15-14:35	Neng Li	Wuhan University of Technology	The CO <sub>2</sub> Electrocatalysis and Mineralization	Invited
14:35-14:55	Yao Liu	Fuzhou University	Artificial Intelligence Navigated Development of High-Performance Electrolytes for Next Generation Magnesium Batteries	Invited
14:55-15:20 Coffee Break				
Chair: Hirofumi Tanaka, Caichao Ye				
15:20-15:45	Gang Zhang	Beijing Institute of Technology	Thermal Conductivity in Solid Materials and Active Control	Keynote
15:45-16:05	Naigen Zhou	Nanchang University	Research on Doping Modification of High-Nickel Ternary Cathode Materials Based on Machine Learning	Invited
16:05-16:25	Gen Li	The Hong Kong Polytechnic University	CO <sub>2</sub> Adsorption Mechanism in Mesopores of Alkaline Solids	Invited
16:25-16:45	Jiong Yang	Shanghai University	AI-Powered Studies on Thermoelectrics	Invited
16:45-17:00	Hao Li	Wuhan University of Technology	Interactions with Solidification Front: The Strengthening Mechanisms of SiC Nanoparticles in Ti Fabricated by Additive Manufacturing	Oral



January 14th, 2026 AM

📍 Hanyang Hall

Session A      Green Processing of Materials

Time	Name	Affiliation	Title	Type
Chair: Cao Guan, Yunzi Xin				
08:30-08:55	Dingsheng Wang	Tsinghua University	Single Atom Catalysis	Keynote
08:55-09:20	Xuefeng Jiang	East China Normal University	Sustainable Valorization and Upcycling of Plastic Waste	Keynote
09:20-09:40	Zongkui Kou	Wuhan University of Technology	Atom-scale Catalyst for Hydrogen-electric Conversion	Invited
09:40-10:00	Jian Zhang	Hainan University	Electrosynthesis of Hydrogen Peroxide from Seawater	Invited
10:00-10:20 Coffee Break				
Chair: Dingsheng Wang, Zongkui Kou				
10:20-10:45	Xiao Feng	Beijing Institute of Technology	Open Framework Ionomers for Fuel Cells	Keynote
10:45-11:10	Cao Guan	Northwestern Polytechnical University	Printing Battery-integrated Flexible Electronics	Keynote
11:10-11:30	Yunzi Xin	Nagoya Institute of Technology	Next-Gen Glow: Designing Nano-Fluorescent Materials with Innovative Reaction Fields	Invited
11:30-11:50	Haihong Zhang	Xi'an Aeronautical Institute	Whiskers-Driven Templated Grain Growth Enables [001]-Oriented Interlocking Microstructures and Phase Manipulation in Alumina-Mullite Fibers	Invited
11:50-12:05	Fangze Chen	Wuhan University of Technology	Multi-phase Multi-component Carbides: The Phase Stability, Microstructural Evolution, Mechanical and Thermal Properties Tailored by Carbon Content	Oral

January 14th, 2026 AM

📍 Shimao 5 Hall

Session B      Eco-Materials, Materials Remediation and Recycling

Time	Name	Affiliation	Title	Type
Chair: Yi Zeng, Xikun Zhang				
08:30-08:55	Adisorn Tuantranont	National Science and Technology Development Agency	2D and 3D Graphene Technology for Beyond Lithium Energy Storage	Keynote
08:55-09:15	Ning Han	CHN ENERGY Investment Group Co., Ltd.	Frontier Design of Transition Metal Oxides: A New Paradigm for Efficient Water Oxidation	Invited
09:20-09:35	Huifeng Hu	Wuhan University of Technology	Bioprocessing Inspired Fabrication of Calcium Carbonate Composites at Low Temperature	Oral
09:35-09:50	Jirawan Jindakaew	Chulalongkorn University	Green Synthesis of MIL-53(Al)/Fe <sub>2</sub> O <sub>3</sub> Core-Shell Composites Using PET-Derived Linker Source for Enhanced Orthophosphate Cleanup	Oral
09:50-10:05	Rongrong Yang	Wuhan University of Technology	Achieving Near-theoretical Transmittance in MgAl <sub>2</sub> O <sub>4</sub> Ceramic at Reduced Sintering Temperature via Solution Substitution	Oral
10:05-10:20 Coffee Break				
Chair: Adisorn Tuantranont, Ning Han				
10:20-10:45	Yi Zeng	Shanghai Institute of Ceramics, Chinese Academy of Sciences	Study on the Relationship Between the Anti-CMAS Corrosion Mechanism and Microstructure of Multi-Component Monosilicate	Keynote
10:45-11:05	Xikun Zhang	University of Namur	Anion Pillars Enable High Energy Density Sodium Dual-ion Battery with Ultra-long Cycle Life	Invited
11:05-11:20	Jin Chen	Wuhan University of Technology	Chain-Length-Dependent Morphogenesis of Calcite: In Situ Visualization and Steering of Crystallization Using Fluorescent Au Nanoclusters	Oral
11:20-11:35	Jinyu Liu	The University of Osaka	Crack Healing Behavior of TiC Ceramics Induced by Anodic Oxidation and Its Mechanism	Oral
11:35-11:50	Shen Yu	Wuhan University of Technology	Modulation of the Micro-Environment of Catalytic Centers in Zeolites for Efficient Catalysis	Oral

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♀ Shimao 3A/B Hall

Session C
 Energy Conversion and Storage Materials

Time	Name	Affiliation	Title	Type
Chair: Emmanuel Flahaut, Daniel Chua				
08:30-08:55	Maning Liu	Lund University	Quasi-2D Layered Double Perovskite Nanocrystals for Stable and Efficient Lead-Free Light-Converting Applications	Keynote
08:55-09:20	Heechaе Choi	Xi'an Jiaotong-Liverpool University	Atomic-Scale Modeling and Theory for Catalytic and Photocatalytic Reactions on Heterointerfaces and Grain Boundaries of Semiconductors	Keynote
09:20-09:40	Jianming Tao	Fujian Normal University	Interfacial Potential Modulation and Operando X-ray Photoelectron Spectroscopy for Solid-State Lithium-ion Batteries	Invited
09:40-10:00	Ruohan Yu	Wuhan University of Technology	Metastable Silicon-based Anode Materials for Stable Lithium-Ion Batteries	Invited
10:00-10:20 Coffee Break				
Chair: Maning Liu, Heechaе Choi				
10:20-10:45	Emmanuel FLAHAUT	Université de Toulouse	DWCNT:g-C <sub>3</sub> N <sub>4</sub> Nanohybrids for Photocatalytic Hydrogen Production from Water Splitting	Keynote
10:45-11:10	Daniel Chua	National University of Singapore	Low Dimensional Nanocomposites for Hydrgen Production and Fuel Cells Technology	Keynote
11:10-11:30	Shan Fang	Nanchang University	Enabling High-Energy-Density Lithium Metal Batteries through Materials and Interface Engineering	Invited
11:30-11:45	Tom Schneider	University of Cologne	Multifunctional TiOx-composite Nanofibers for Photo-enhanced Rechargeable Lithium-ion Batteries	Oral
11:45-12:00	Heng Wei	Qingdao University	Ln <sup>3+</sup> -induced Phase Development to Enhanced Microwave Absorption Effect of Ferrite-loaded Polymer	Oral

January 14th, 2026 AM

♀ Wuchang Hall

Session D
 Environmental Protection Materials and Surface Technology

Time	Name	Affiliation	Title	Type
Chair: Hui Pan, Yuxuan Xiao				
08:30-08:55	Ion Tighineanu	Technical University of Moldova	Micro-/Nano-Tubular Photocatalytic Materials Based on Oxide Compounds	Keynote
08:55-09:20	Jing Sun	Shanghai Institute of Ceramics, Chinese Academy of Sciences	Photocatalytic Degradation and Adsorption of Zr-MOF Materials for Gaseous VOCs	Keynote
09:20-09:40	Xiahan Sang	Wuhan University of Technology	Atomic-Scale Characterization of Material Dynamics: From Structural Evolution to Electronic Properties	Invited
09:40-10:00	Yinyu Xiang	Wuhan University of Technology	Regulating Multi-Ion Diffusion via Modified Polyolefin Separators for Potassium Metal Batteries	Invited
10:00-10:20 Coffee Break				
Chair: Ion Tighineanu, Xiahan Sang				
10:20-10:45	Junying Zhang	Beihang University	Broad-Spectrum Photocatalyst for Hydrogen Production with Photo-Electro-Thermal Synergy	Keynote
10:45-11:10	Hui Pan	University of Macau	Predictive Design of Pre-catalysts for Electrocatalysis by Controlled Reconstruction	Keynote
11:10-11:30	Meiling Sun	Wuhan University of Technology	Towards Advanced Solid-State Batteries: From Materials to Devices	Invited
11:30-11:45	Zhanke Wang	Wuhan University of Technology	Effective Utilization of Low NO Concentration for the Electrochemical Synthesis of NH <sub>3</sub>	Oral
11:45-12:00	Yuxuan Xiao	University of Macau	Controllable Electrochemical Reconstruction of Bi-based Nanomaterials for Efficient and Durable CO <sub>2</sub> Conversion	Oral



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♀ Hankou Hall

Session E

Bio-Inspired Materials and Bioprocessing-Inspired Fabrication

Time	Name	Affiliation	Title	Type
Chair: Hewei Zhao, Yongyang Song				
08:30-08:50	Xuetao Shi	South China University of Technology	Machine Learning-guided Design of Mechanoadaptive Bioglues for Multi-tissue Trauma	Invited
08:50-09:10	Taishi Yokoi	Institute of Science Tokyo	Development of Artificial Bones with Unique Mechanical Properties using Organically Modified Octacalcium Phosphate as a Starting Material	Invited
09:10-09:30	Yongsheng Li	East China University of Science and Technology	Silica-based Nanohybrids for High-efficacy Cancer Therapy	Invited
09:30-09:50	Hang Zhang	Eastern Institute of Technology, Ningbo	Nanoscale Structural Control in Hydrogels: From Bright Whiteness to Skin-like Properties	Invited
09:50-10:05	Jie Ma	Technical Institute of Physics and Chemistry, Chinese Academy of Sciences	Bioinspired Wettability Boundary Stabilizes Water Sloshing	Oral
10:05-10:20 Coffee Break				
Chair: Xuetao Shi, Taishi Yokoi				
10:20-10:40	Hewei Zhao	Beihang University	Bioinspired Nanocomposites with High Strength and High Toughness	Invited
10:40-11:00	Yongyang Song	Technical Institute of Physics and Chemistry, Chinese Academy of Sciences	Biological Separation Microparticle Materials for Liquid Biopsy	Invited
11:00-11:20	Jianxun Ding	Changchun Institute of Applied Chemistry, Chinese Academy of Sciences	Bioactive Poly(lactic acid) and Poly(amino acid) Materials for Tissue Repair	Invited
11:20-11:40	Yidi Li	Jiangnan University	Mechanically Reinforced Artificial Enamel by Mg <sup>2+</sup> -Induced Amorphous Intergranular Phases	Invited
11:40-11:55	Yin Liu	Wuhan University of Technology	Controllable Synthesis of Calcium Carbonate within Collagen Fibrils for Functional Applications	Oral

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♀ Shimao 1A/B Hall

Session F

AI for Materials Processing and Design

Time	Name	Affiliation	Title	Type
Chair: Tierui Zhang, Ziyuan Rao				
08:30-08:55	Yan Zhao	Sichuan University	Data-Driven State of Health Estimation for Lithium-Ion Batteries	Keynote
08:55-09:15	Tianqi Deng	Zhejiang University	Database and Machine-learning Prediction of Transport Properties	Invited
09:15-09:35	Yongsheng Zhang	Qufu Normal University	Band Structures Manipulating in Thermoelectric Materials	Invited
09:35-09:55	Houbing Huang	Beijing Institute of Technology	Machine-Learning-Guided Design of Incommensurate Antiferroelectrics via Field-Driven Phase Engineering	Invited
09:55-10:20 Coffee Break				
Chair: Yan Zhao, Tianqi Deng				
10:20-10:45	Tierui Zhang	Technical Institute of Physics and Chemistry, Chinese Academy of Sciences	Defective Layered Double Hydroxide Based Nanostructured Photocatalysts for Nitrogen Fixation	Keynote
10:45-11:05	Ziyuan Rao	Shanghai Jiao Tong University	Stainless Mg Alloy Design with Large Language Models	Invited
11:05-11:25	Zhifeng Huang	Wuhan University of Technology	Multiscale Computational Design and Additive Manufacturing of Gradient Structure	Invited
11:25-11:40	Muzhen Xu	Kyushu Institute of Technology	In-materio Physical Reservoir Computing Using an YMnO <sub>3</sub> Single Crystal for Power-efficient Voice Recognition	Oral
11:40-11:55	Daqian Xu	Wuhan University of Technology	Enhanced High-temperature Creep Resistance in Gradient Nanograined Alloys via Gradient Solute Segregation	Oral

January 14th, 2026 PM

♀ Hanyang Hall

Session A Green Processing of Materials

Time	Name	Affiliation	Title	Type
Chair: Wei Wang, Shiyue Guo				
13:30-13:55	Jiangtao Xiong	Northwestern Polytechnical University	Diffusion Bonding of Titanium Alloys to Stainless Steel with Nb/Ni/Cu Multilayer Interlayers	Keynote
13:55-14:20	Qiuyun Fu	Huazhong University of Science and Technology	Novel 3D Printed BaTiO <sub>3</sub> -based Ceramics with High PTC Effect via Vat Photopolymerization and Vacuum Infiltration	Keynote
14:20-14:40	Jiangwei Zhang	Inner Mongolia University	Material Advanced Characterization and Machine Learning Obtained Materials Informatics to Accelerate Energy Materials Design and Iterative Development	Invited
14:40-15:00	Zhen Gu	Xi'an Jiaotong University	Preparation and Large-Scale Application of High-Quality and Low-Cost Fine Alloy Powder	Invited
15:00-15:20 Coffee Break				
Chair: Jiangwei Zhang, Zhen Gu				
15:20-15:45	Wei Wang	Xi'an University of Architecture and Technology	Design and Lubrication Mechanism of Lubricants for Rare Metal Forming	Keynote
15:45-16:05	Shiyue Guo	Wuhan University of Technology	Enhanced Energy Absorption and Low Anisotropy of Additively Manufactured Porous Ti-6Al-4V Alloy with Disordered Trapezo-rhombic Dodecahedron Structures	Invited
16:05-16:20	Xinwei Geng	Shanghai Institute of Ceramics, Chinese Academy of Sciences	The Effect of Al <sub>2</sub> O <sub>3</sub> on the Mechanical Properties and Electrical Properties of Hot-pressing Conductive TiO <sub>2-x</sub> Ceramics	Oral
16:20-16:35	Yiling Dai	Shanghai Institute of Ceramics, Chinese Academy of Sciences	Fabrication of Multi-Scale Porous Silicon Nitride Scaffolds via Direct Ink Writing: Integrating Porogen and Freeze-Drying Techniques	Oral
16:35-16:50	Yi Zhou	Wuhan University of Technology	Enhanced Mechanical and Thermal Properties of Textured Si <sub>3</sub> N <sub>4</sub> /BN Composite Ceramics Prepared by Hot-pressing	Oral

January 14th, 2026 PM

♀ Shimao 5 Hall

Session B Eco-Materials, Materials Remediation and Recycling

Time	Name	Affiliation	Title	Type
Chair: Vinich Promarak, Tomoyo Goto				
13:30-13:55	Pakorn Opaprakasit	Thammasat University	Emulsion-Engineered Polylactide-Based Polyurethane/MXene Films for High-Performance Flexible and Biointegrated Wearable Sensors	Keynote
13:55-14:15	Shengyao Wang	Shanghai Jiao Tong University	Design of Homogeneous-Heterogeneous Synergistic Photocatalytic System	Invited
14:15-14:30	Jingzhao Cheng	Wuhan University of Technology	Design and Applications of Conjugated Polymer-based Materials in Photocatalysis	Oral
14:30-14:45	Kusuma Pinsuwan	Thammasat University	Chemical Recycling of Plastic Waste Toward Value-Added Functional Polymeric Materials	Oral
14:45-15:00	Bingyu Xue	Wuhan University of Technology	From Fish Swim Bladder to Ceramics: A Bio-Processing Inspired Route to Fabricate Prestressed Composites	Oral
15:00-15:20 Coffee Break				
Chair: Pakorn Opaprakasit, Shengyao Wang				
15:20-15:45	Vinich Promarak	Vidyasirimedhi Institute of Science and Technology	High-Performance Transparent Luminescent Solar Concentrators (TLSCs) for Building-Integrated Photovoltaic (BIPV)	Keynote
15:45-16:10	Wenjun Dong	University of Science and Technology Beijing	Structural design and catalytic enhancement mechanism of ZnIn <sub>2</sub> S <sub>4</sub> -based photocatalyst	Keynote
16:10-16:30	Tomoyo Goto	Nara Institute of Science and Technology	Pb <sup>2+</sup> Removal of Seaweed-like Potassium Titanate Synthesized by Alkaline Hydrothermal Treatment	Invited



January 14th, 2026 PM

♀ Shimao 3A/B Hall

Session C

Energy Conversion and Storage Materials

Time	Name	Affiliation	Title	Type
Chair: Pierre Ferdinand P. Poudeu, Byungchan Han				
13:30-13:55	Vladimir Khovaylo	National University of Science and Technology	Skutterudites: Materials Science Aspects for Large-scale Production	Keynote
13:55-14:20	Alexander Burkov	Ioffe Institute	Chalcogenide Thermoelectrics	Keynote
14:20-14:40	Zhenyou Li	Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences	Anode-Electrolyte Interfaces in Magnesium and Calcium Batteries	Invited
14:40-15:00	Zhi Chang	Central South University	Secondary Battery Electrolyte Regulation Strategy Based on Porous Materials	Invited
15:00-15:20 Coffee Break				
Chair: Vladimir Khovaylo, Alexander Burkov				
15:20-15:45	Pierre Ferdinand P. Poudeu	University of Michigan	Native Defects Engineering in Cu <sub>2</sub> Se-based Hierarchical Composites	Keynote
15:45-16:10	Byungchan Han	Yonsei University	Design of Efficient Eco-materials for Electrochemical Conversion and Storage Systems Using Integrated Platform of the First-principles Calculations and Machine Learning Techniques	Keynote
16:10-16:35	Joohoon Kang	Yonsei University	Van der Waals Assembly of 2D Materials for Future Electronics	Keynote
16:35-16:50	Benedict Witulski	University of Cologne	NH <sub>3</sub> Synthesis Based on Electrocatalytic Enhancement through Piezo-assisted Materials	Oral
16:50-17:05	Zhiqiang Chen	Nagoya Institute of Technology	Design and Preparation of Cellulose-Derived Carbon for Zinc-Ion Hybrid Capacitors	Oral
17:05-17:20	Naina Goyal	University of Cologne	Advanced Transition Metal Vanadate Catalysts for Efficient Aqueous Electrochemical Nitrogen Reduction Reaction	Oral

January 14th, 2026 PM

♀ Wuchang Hall

Session D

Environmental Protection Materials and Surface Technology

Time	Name	Affiliation	Title	Type
Chair: Qipeng Lu, Yi Lu				
13:30-13:55	Sang Sub Kim	Inha University	Surface-Engineered Nanomaterials for Next-Generation Chemiresistive Gas Sensing	Keynote
13:55-14:15	Zhichao Liu	Wuhan University of Technology	Development of Engineered Limestone for Multi-scenario Application	Invited
14:15-14:30	Shitian Xiao	Wuhan University of Technology	Design of Hierarchical TiO <sub>2</sub> with Rich Surface Hydroxyl for Photocatalytic Hydrogen Production from Seawater	Oral
14:30-14:45	Takumi Watanabe	Nagoya Institute of Technology	Systematic Study of Divalent Metal Cation Substitution Effects on Hydroxyapatite Structure and Catalytic Performance	Oral
14:45-15:00	Zefan Xue	Wuhan University of Technology	Competing Grain Growth Pathways in Anisotropic Bi <sub>2</sub> Te <sub>3</sub> -Based Thermoelectric Nanoplates	Oral
15:00-15:20 Coffee Break				
Chair: Sang Sub Kim, Shitian Xiao				
15:20-15:45	Qipeng Lu	University of Science and Technology Beijing	Noble Metal-Based Intermetallic Compounds for Energy Catalysis	Keynote
15:45-16:05	Yi Lu	Wuhan University of Technology	Surface Engineering for High-efficient Charge Transfer in TiO <sub>2</sub> -based Semiconductors	Invited
16:05-16:25	Chang Lu	Wuhan University of Technology	Engineering Intelligent-Responsive Nanoprobes for Theranostic Applications in Cancer	Invited
16:25-16:40	Moritz Steiner	University of Cologne	Molecular Precursors for MnF <sub>2</sub> Thin Films for CO <sub>2</sub> Electroreduction	Oral
16:40-16:55	Yu Liu	Wuhan University of Technology	Long-term Durability of Seawater Splitting for Hydrogen Production	Oral
16:54-17:10	Jin Liu	Qingdao University	Smart Multiple Information Coding and Hazard Sensing in 2D Fine Images by MIPAs	Oral

January 14th, 2026 PM

♀ Hankou Hall

Session E Bio-Inspired Materials and Bioprocessing-Inspired Fabrication

Time	Name	Affiliation	Title	Type
Chair: Chang Du, Chuangqi Zhao				
13:30-13:55	Shengmin Zhang	Huazhong University of Science and Technology	Bioenergetic-active Materials for Multi-tissue Regeneration	Keynote
13:55-14:15	Yangyang Li	City University of Hong Kong, Shenzhen Research Institute	Supervariate Mineral Gels: Biocompatible Synthesis, All-in-one Charge Storage, Biomineralization/Demineralization Mechanisms	Invited
14:15-14:35	Fei Tao	Shaanxi Normal University	Protein Mesocrystal Soft Materials	Invited
14:35-14:55	Xiaozhuang Zhou	Wuhan University of Technology	Self-healable and Recyclable Crosslinked Polymeric Materials Based on Dynamic Covalent Chemistry	Invited
14:55-15:20 Coffee Break				
Chair: Yangyang Li, Xiaozhuang Zhou				
15:20-15:40	Chuangqi Zhao	University of Science and Technology of China	Bio-inspired High-performance Nanocomposites	Invited
15:40-16:00	Sijie Wan	Beihang University	Bioinspired MXene-Based Nanocomposites: Densification and Scalable Fabrication	Invited
16:00-16:20	Chang Du	South China University of Technology	Multifunctional 4D Printed Shape Memory Composite Scaffolds with Photothermal and Magnetothermal Effects for Multimodal Tumor Therapy and Bone Repair	Invited
16:20-16:40	Zhengyao Qu	Wuhan University of Technology	Design and Application of Biomimetic Metamaterials	Invited
16:40-17:00	Zhichao Dong	Technical Institute of Physics and Chemistry, Chinese Academy of Sciences	Biomimetic Overflow Interfacial Materials	Invited
17:00-17:15	Xinyi Bai	Xi'an University of Posts and Telecommunications	Optimizing Sintering Behavior and Properties of Gel-derived Dental Lithium Disilicate Glass-ceramics with HCl Addition	Oral

January 14th, 2026 PM

♀ Shimao 1A/B Hall

Session F AI for Materials Processing and Design

Time	Name	Affiliation	Title	Type
Chair: Pingan Chen, Shanshan Wang				
13:30-13:50	Haiqing Yin	University of Science and Technology Beijing	Inverse Materials Design via LLM-Driven Agent with Small Models	Keynote
13:50-14:10	Zijian Hong	Zhejiang University	AI Driven Discovery of Battery Materials	Invited
14:10-14:25	Zhenshuai Lei	Wuhan University of Technology	Atomic-Scale Insights into the Failure Origins of Polycrystalline Thermoelectric Materials: CoSb <sub>3</sub> , Mg <sub>2</sub> Si, and SnSe	Oral
14:25-14:40	Xinxuan Wang	Wuhan University of Technology	Ductile Mg-Te-Pb Thermoelectric Materials with Ultralow Lattice Thermal Conductivity Predicted by a Deep Learning Potential Model	Oral
14:40-14:55	Wenjie Gao	Wuhan University of Technology	Design of Photopolymerization 3D printing Materials Based on Machine Learning	Oral
14:55-15:20 Coffee Break				
Chair: Haiqing Yin, Zijian Hong				
15:20-15:40	Pingan Chen	Wuhan University of Science and Technology	Composition Optimization of Polyborosilazane and its effect on the electromagnetic properties of SiBCN ceramics	Invited
15:40-15:55	Shanshan Wang	National University of Defense Technology	Machine Learning-Empowered Atomic-Scale Structural Analysis	Invited
16:00-16:20	Zhongyong Zhang	Wuhan University of Technology	Spin Regulation of Electrocatalytic Activity in MXene-Based Materials	Oral





### ISEPD-26001

#### The Synthesis of H<sub>2</sub>O@SiO<sub>2</sub> and PCM@SiO<sub>2</sub> Micelles for Energy Saving Materials

Chang-Yeoul Kim

Korea Institute of Ceramic Engineering and Technology

### ISEPD-26002

#### Preparation and Properties of High-Purity Silica Ceramics Sintered by Pressureless Sintering of Fumed Silica Micropowders

Xueqin Pan

Xi'an Jiaotong University

### ISEPD-26003

#### Controllable Preparation and Microstructure and Property Regulation of Multi-component Carbides and Their Composites

Wen Zhang

Wuhan University of Technology

### ISEPD-26004

#### Sustainable and Direct Upcycling of Waste Graphite Anodes via Deep Eutectic Solvents

Xue Liu

Wuhan University of Technology

### ISEPD-26005

#### Organic-solvent-free Primary Solvation Shell for Low-temperature Aqueous Zinc Batteries

Lishan Geng

Wuhan University of Technology

### ISEPD-26006

#### From Anode-free Designs to Bendable Electrodes: Linking Flexibility and High Energy Density Battery Systems

David Patrun

University of Cologne

### ISEPD-26007

#### Cation- $\pi$ Mediated Weak Solvation Chemistry Enables Dendrite-Suppressed Gel Polymer Electrolytes

Wei Deng

Wuhan University of Technology

### ISEPD-26008

#### Inducing eg Orbital Electrons Delocalization to Mitigate the Jahn-Teller Effect for Enhanced Structural Stability in Mn-rich Mixed Phosphate Cathode

Hao Fan

Wuhan University of Technology

### ISEPD-26009

#### The Out-of-Plane C-S Bonds Boosting Reversible Redox in Copper Sulfide Cathodes for Ultradurable Magnesium Battery

Qin Su

Wuhan University of Technology

### ISEPD-26010

#### The Spatial Decoupling Effect Enables Conflict-Free Ion Sieving and Synergistic Transport in Zn-I2 Batteries

Juan Ji

Wuhan University of Technology

### ISEPD-26011

#### Multifunctional TiO<sub>x</sub>-composite Nanofibers for Photo-enhanced Rechargeable Lithium-ion Batteries

Tom Schneider

University of Cologne

### ISEPD-26012

#### Isotope Interface Design for High-Energy Aqueous Proton Batteries

Hongwei Cai

Wuhan University of Technology

### ISEPD-26013

#### Synergic Coordination Effect in Nonflammable Deep Eutectic Electrolyte for High-Performance Sodium-Ion Batteries

Ao Xu

Wuhan University of Technology

### ISEPD-26014

#### Electrolyte Chemistry Towards Sulfur-rich Interphase for Wide-temperature Sodium-ion Batteries

Quan Yuan

Wuhan University of Technology

### ISEPD-26015

#### Fluoride doping Na<sub>3</sub>Al<sub>2/3</sub>V<sub>4/3</sub>(PO<sub>4</sub>)<sub>3</sub> Microspheres as Cathode Materials for Sodium-Ion Batteries with Multi-Electron Redox

Boyu Xing

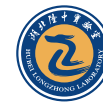
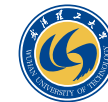
Wuhan University of Technology

### ISEPD-26016

#### Molecular Strategies for Binary MO<sub>2</sub> (M = V, Sn, Ti, Zr, Hf) High-Entropy Oxides: Superior Catalysts for Enhanced Oxygen Evolution

Ziyaad Aytuna

University of Cologne



#### ISEPD-26017

##### Atomistic Insights into Topochemical Reactions in the BiFeO<sub>3</sub> System

Junjie Ding  
Wuhan University of Technology

#### ISEPD-26018

##### Competing Grain Growth Pathways in Anisotropic Bi<sub>2</sub>Te<sub>3</sub>-Based Thermoelectric Nanoplates

Zefan Xue  
Wuhan University of Technology

#### ISEPD-26019

##### Tumor Microenvironment-Responsive Self-Assembling Ferrocene-Based Nanoparticles for Enhanced Ferroptosis Therapy

Xinyi Guo  
Wuhan University of Technology

#### ISEPD-26020

##### Catalytic Sulfur Doping Accelerates Anion Framework Reconstruction for Sustainable Self Healing Semiconductors

Zhi Yang  
Wuhan University of Technology

#### ISEPD-26021

##### NH<sub>3</sub> Synthesis Based on Electrocatalytic Enhancement Through Piezo-assisted Materials

Benedict Witulski  
University of Cologne

#### ISEPD-26022

##### Simultaneous Enhancement of Electron and Phonon Transport Properties via Magnetism Phase Transition in Fe<sub>x</sub>Co<sub>2-x</sub>TiGe Heusler Alloy

Yongqiang Li  
Wuhan University of Technology

#### ISEPD-26023

##### Dynamic Defect Engineering via Interstitial Phase Transitions for Enhanced Sb<sub>2</sub>Te<sub>3</sub> Thermoelectric Performance

Wenjun Lv  
Wuhan University of Technology

#### ISEPD-26024

##### Revealing Disorder Parameter and Bonding Electron Density Using Electron Diffraction

Weixiao Lin  
Wuhan University of Technology

#### ISEPD-26025

##### Reaction-sintered Highly Transparent MgGa<sub>2</sub>O<sub>4</sub> Ceramics with Enhanced Dielectric Properties

Guangsheng Tu  
Wuhan University of Technology

#### ISEPD-26026

##### Advanced Transition Metal Vanadate Catalysts for Efficient Aqueous Electrochemical Nitrogen Reduction Reaction

Naina Goyal  
University of Cologne

#### ISEPD-26027

##### A Novel Thermometric Performance of Dy<sup>3+</sup> Doped Phosphor: Fluorescence Lifetime in Grain Boundary-doped MgAlON: Dy<sup>3+</sup> Transparent Ceramics

Zhengyang Jing  
Wuhan University of Technology

#### ISEPD-26028

##### Hierarchical Design of Zeolites for Mass Transport Enhancement

Bojun Zeng  
Wuhan University of Technology

#### ISEPD-26029

##### Mineralization of Collagen Fibrils with Cadmium Carbonate Nanocrystals for Efficient Carrier Transport in Biological Memristor

Zhuozhi Zheng  
Wuhan University of Technology

#### ISEPD-26030

##### Collagen Mineralization Pathway Guided by Multiscale Structure of Intermuscular Bone in Crucian Carp

Huanhuan Zhang  
Wuhan University of Technology

#### ISEPD-26031

##### Improved Specific Capacitance of Cassava Root-based Activated Carbon by KOH/KMnO<sub>4</sub> Activating Agent

Weerawat Toaran  
Suranaree University of technology

#### ISEPD-26032

##### Muscle-Inspired Self-Growing Anisotropic Hydrogels with Mechanical Training-Promoting Mechanical Properties

Yulong Xia  
Wuhan University of Technology





#### ISEPD-26033

##### Bio-inspired Design of Hierarchically Porous ZIF-8 Derived Fe-N-C Bifunctional Catalysts for Enhanced Zinc-Air Battery Performance

Hao Lu

Wuhan University of Technology

#### ISEPD-26034

##### Transient Architects: Shark Osteodentin Assembly via Cell-Directed Collagen Templating and Strategic Withdrawal

Zhaunfei Liu

Wuhan University of Technology

#### ISEPD-26035

##### A Blueprint for Self-Sharpening: Optimized Geometric Design Coupled with Multiscale Architecture in Northern Snakehead Teeth

Junyan Guo

Wuhan University of Technology

#### ISEPD-26036

##### Strategies for Enhanced Crystallinity and Energy Harvesting Performance of Flexible Piezoelectric Composite Films

Kwi-Il Park

Kyungpook National University

#### ISEPD-26037

##### Cold Sintering of Vaterite Microspheres Incorporated with GFP-modified Escherichia coli under Gigapascal-level Pressure for Enhanced Mechanical Properties and Stable Fluorescence

Xiaoqian Wu

Wuhan University of Technology

#### ISEPD-26038

##### Regulating Growth of Strontium Carbonate in Self-Assembled Chiral Chitin Matrices with Robust Mechanical Properties

Jiawei Nie

Wuhan University of Technology

#### ISEPD-26039

##### Spatial Compartmentalization by Tomes' Processes Directs Hierarchical Mineralization of Enamel

Zeyao Fu

Wuhan University of Technology

#### ISEPD-26040

##### Gold Nanoclusters Drive Calcium Phosphate Crystallization from Liquid Precursors at pH 5

Lingcen Shao

Wuhan University of Technology

#### ISEPD-26041

##### Enhanced Electrocatalytic N<sub>2</sub> Reduction to NH<sub>3</sub> through Piezo-Assisted Polarization

Fatma Simsek

University of Cologne

#### ISEPD-26042

##### Grain Size Effect on Spall Damage of Nanopolycrystalline Ti under Shock Loading from Dynamical and Thermodynamical Perspectives

Jihao Tian

Wuhan University of Technology

#### ISEPD-26043

##### Study on Proton Irradiation Damage and Free Surface Annihilation Mechanisms in Micro-Nano Hierarchical Porous Copper for Space Environments

Longfei Mo

Wuhan University of Technology

#### ISEPD-26044

##### Performance Regulation of MoS<sub>2</sub> Neuromorphic Devices Driven by Local Weak Doping

Xin Yan

Wuhan University of Technology

#### ISEPD-26045

##### All-in-One Sensing-Memory-Computing System Based on a Self-Powered P-N Bipolar Homo Junction Transistor

Wen Deng

Wuhan University of Technology

#### ISEPD-26046

##### Molecular Precursors for MnF<sub>2</sub> Thin Films for CO<sub>2</sub> Electroreduction

Moritz Steiner

University of Cologne

#### ISEPD-26047

##### HH130: A Standardized Dataset for Universal Machine Learning Force Field and the Applications in the Thermal Transport of Half-Heusler Thermoelectrics

Shengnan Dai

Shanghai University

#### ISEPD-26048

##### MACE-HH: A DFT-Level Accuracy Foundation Model for Thermal-Related Properties in Half-Heusler Thermoelectrics

Yuyan Yang

Shanghai University

#### ISEPD-26049

##### Deep Generative Learning for Electrochemical Impedance Analysis

Dulyawat Doonyapisut

Suranaree University of Technology

#### ISEPD-26050

##### Study on the Sintering Behavior of Y3GaAl4O12 Ceramics During Pre-sintering and Fabrication of Highly Transparent Ceramics

Pan Gao

Wuhan University of Technology

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