



9<sup>th</sup> World Congress on

# MATERIALS SCIENCE AND ENGINEERING

November 07-08, 2025 | Park Hotel Hong Kong, Hong Kong

**Theme:**

“Shaping the future through expertise and innovations in  
Materials Science and Engineering”

MAT SCIENCE 2025

<https://materialsscience.mindauthors.com/>

# **SCIENTIFIC AGENDA**

## **DAY-1**

**November 07, 2025**

In-person Conference

# Day 1

08:30 - 08:45 Onsite Registration & Seating Arrangement

08:45 - 09:00 Introduction & Opening Ceremony

## Keynote Presentations

09:00 - 09:25 Title: Advanced Innovative Nanostructured Oxygen Electrodes for Solid Oxide Cells  
**Prof. Elisabeth Djurado**, *University Grenoble Alpes, France*

09:25 - 09:50 Title: Practices of using bio-based materials for flame retarding cotton fabrics  
**Prof. Fei You**, *Nanjing Tech University, China*

09:50 - 10:15 Title: Electron-Ion Interaction In 2D Semiconductor Nano-Fluidics for Blue Energy Generation  
**Prof. Jean-Pierre Leburton**, *University of Illinois at Urbana-Champaign, USA*

## Refreshment & Coffee - 10:15 - 10:35

## Keynote Presentations...

10:35 - 11:00 Title: RUNX1: a novel therapeutic target for myocardial infarction and cerebral infarction  
**Dr. Weihong He**, *Sichuan University, China*

11:00 - 11:25 Title: Removal of toxic phenol from wastewater using biological and industrial waste materials as adsorbents  
**Dr. Ashanendu Mandal**, *University of Calcutta, India*

11:25 - 11:50 Title: Optimized UV-B and UV-A Emission in BaB8O13 compounds: Tailoring Gd<sup>3+</sup> Doping with Pb<sup>2+</sup>, Ce<sup>3+</sup> and Pr<sup>3+</sup> for Phototherapy Applications  
**Prof. Leelakrishna Reddy**, *University of Johannesburg, South Africa*

## Oral Presentations

11:50 - 12:10 Title: Surface Engineering and Application of Ultrasmall Metal Nanoclusters  
**Dr. Xun Yuan**, *Qingdao University of Science and Technology, China*

12:10 - 12:30 Title: Low-Elasticity SW-/MW-CNT Hybrid Binder for Enhanced Battery Performances in Lithium-Ion and Sodium-Ion Batteries  
**Dr. Nobuyuki Zettsu**, *Shinshu University, Japan*

12:30 - 12:50 Title: Understanding friction in 2D material surfaces: background and perspectives  
**Prof. Roberto Guerra**, *University of Milan, Italy*

12: 50 - 13:10 Title: Nanoparticles dispersion assessment by a novel thermography technique  
**Prof. Antonio Pantano**, *University of Palermo, Italy*

## Memorable Group Photo & Tempting Buffet lunch - 13:10 - 13:50

## Oral Presentations Cont...

13:50 - 14:10 Title: Microwave-Induced Attractive Force Between Dielectric Spheres –A Potential Non-Thermal Effect in Microwave Sintering  
**Dr. Li-chung Liu**, *National Taiwan University, Taiwan*

- 14:10 - 14:30** Title: A Research Road Map Approaching Thin Films of Semiconductors  
Electropulsing Induced Phase Transformations in Alloys and Thin Films of TCO And TE Semiconductors  
**Prof. Yaohua Zhu**, *The Hong Kong Polytechnic University, Hong Kong*
- 14:30 - 14:50** Title: Ecological Intumescent Fire Barriers for Fire Protection  
**Mr. Kajetan Pyrzynski**, *Delta Innovative Company, Poland*
- 14:50 - 15:10** Title: Textiles with Multifunctional Systems of Human Protection Against Fire, Contamination, Cold & Uv Radiation. A Review  
**Prof. Dr. Ryszard Kozłowski**, *Institute of Natural Fibres, Poland*
- 15:10 - 15:30** Title: Investigation of RUNX1 as a potential therapeutic target for ischemic stroke  
**Ms. Hengshu Chen**, *Sichuan University, China*
- 15:30 - 15:50** Title: An integrated approach to investigate myocardial infarction: from bedside to bench  
**Dr. Si Wang**, *Sichuan University, China*

**Refreshment & Coffee - 15:50 - 16:10**

**Oral Presentations**

- 16:10 - 16:30** A new compression cast concrete technology towards low carbon, more durable and high performance.  
**Ruibo Liu**, *Shenzhen University, China*
- 16:30 - 16:50** Title: Electric Double Layer Effect at Solid/Solid Interface in All-Solid-State Battery  
**Prof. Tohru Higuchi**, *Tokyo University of Science, Japan*
- 16:50 - 17:10** Title: Propylene Composites with Natural Carbon Fillers Obtained by Rotational Molding  
**Prof. Marek Szostak**, *Poznan University of Technology, Poland*
- 17:10 - 17:30** Title: Development and Application of Key Technology in The Synthesis of Polyether Polyols  
**Prof. Zhenggui Gu**, *Nanjing Normal University, China*

**\*\*\* End of Day 1 \*\*\***

# **SCIENTIFIC AGENDA**

## **DAY-2**

**November 08, 2025**

In-person Conference

## Day 2

08:45 - 09:00 Onsite Registration & Seating Arrangement

### Keynote Presentations

09:00 - 09:25  
**Title: Why No Black Hole?**  
**Prof. Qiuhe Peng**, *Nanjing University, China*

09:25 - 09:50  
**Title: Microwave-Induced Attractive Force Between Dielectric Spheres –A Potential Non-Thermal Effect in Microwave Sintering**  
**Prof. Kwo-Ray Chu**, *National Taiwan University, Taiwan*

09:50 - 10:15  
**Title: Electrochemiluminescence Microscopy for Single Particle and Cellular Analysis**  
**Prof. Jun-Jie Zhu**, *Nanjing University, China*

### Refreshment & Coffee - 10:15 - 10:35

### Keynote Presentations

10:35 - 11:00  
**Title: Soul over Matter Information System with Tao Transformative Field**  
**Dr. Laure Le Corroller**, *Dr. & Master Sha Tao Academy, Canada*

11:00 - 11:25  
**Title: Interfacial transformation and reaction with silicon surfaces: towards mechanochemical additive lithography methods**  
**Prof. Arnaud Caron**, *Liaoning Academy of Materials, China*

### Oral Presentations

11:25 - 11:45  
**Title: Preparation of oxidized graphitic carbon nitride for photocatalytic bactericidal scaffold and augmented bone regeneration**  
**Prof. Jongsung Kim**, *Gachon University, Korea*

11:45 - 12:05  
**Title: DFT Study of Immobilisation of Pollutants by Carbon-Based Materials from Wastewaters**  
**Dr. Eva Scholtzova**, *Institute of Inorganic Chemistry, Slovakia*

12:05 - 12:25  
**Title: Deep Learning-Based Knowledge Representation of Microstructures and High-Fidelity Reverse Engineering**  
**Weijie Liao**, *Northwestern Polytechnical University, China*

12:25 - 12:45  
**Title: A lifetime on synthesis of nitrogen-containing liquid crystals in Taiwan**  
**Prof. Win-Long Chia**, *Fu Jen Catholic University, Taiwan*

### Memorable Group Photo & Tempting Buffet lunch -12:45 - 13:25

### Oral Presentations

13:25 - 13:45  
**Title: Atomic-Scale Revelation: Trace La Doping Modulated Elemental Redistribution Mechanisms in Single Crystal Cmsx-4 Superalloys**  
**Yuelin Song**, *Northwestern Polytechnical University, China*

13:45 - 14:05  
**Title: Closed-Loop Inverse Design of High Entropy Alloys Using Symbolic Regression-Oriented Optimization**  
**Shang Zhao**, *Northwestern Polytechnical University, China*

- 14:05 - 14:25** Title: Interactions of Re and Hydrogen At  $\Gamma/\Gamma'$  Interfaces Enhanced Hydrogen-Embrittlement Resistance of Re-Optimized Ni-Based Superalloy  
**Tingting Zhao**, Northwestern Polytechnical University, China
- 14:25 - 14:45** Title: Empowering oxidation resistance of Cr-coated zirconium alloys via hydrogen-driven interface polymorphic transformation  
**Junlei Yin**, Northwestern Polytechnical University, China
- 14:45 - 15:05** Title: Exploring the Electric Conductivity of Additively Manufactured Multiphase High-Entropy Alloys  
**David Maximilian Diebel**, Tongji University, China

**Refreshment & Coffee - 15:05 - 15:25**

**Oral Presentations**

- 15:25 - 15:45** Title: Simultaneously Achieving Advanced and Heat Treatment Insensitive Strength-Ductility Synergy in an A+B Titanium Alloy Via Tailoring Silicide and Heterogeneous A Precipitates  
**Jinhua Dai**, Northwestern Polytechnical University, China
- 15:45 - 16:05** Title: Revealing the Materials Genome for Advanced High-Entropy Materials  
**Jiaqi Lu**, Northwestern Polytechnical University, China

**Poster Presentations - 16:05 - 17:05**

- 16:05 - 17:05** Title: Evaluation of Nano-mechanical Performance in Hydroxyapatite-selenium-collagen Nanocomposite Coatings on Ti6Al4v via Electrochemical Deposition  
**Dr. Ali Shanaghi**, Malayer University, Iran
- Title: Comb-shaped anion exchange membrane with segmented hydrophilic/hydrophobic side chain  
**Dr. Tiantian Li**, Dalian University of Technology, China
- Title: Multi-layered electrode architectures for use in the next generation of electrochemical lithium-based energy storage devices  
**Prof. Sangho Lee**, Pukyong National University, Korea
- Title: Hydrolase Nanozyme Based On N, O-Tethered Ni In Reduced Graphene Oxide Matrix  
**Chen Xuanyu**, National University of Singapore, Singapore
- Title: Computational Design and Mechanistic Analysis of Smart Antioxidant Nanoparticles for UV-Induced DNA Damage Prevention: A Molecular Dynamics Study  
**Ms. Chelsey Miguel**, King Kekaulike High School, USA

**\*\*\* End of Day 2 & Conference \*\*\***



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