

Toward New Era in

6/30 - 7/3, 2025

Molecular and Materials Science and Technology

→ 邁向分子與材料科技的新時代

 International Conference Hall, Humanities and Social Sciences
Building, Academia Sinica 中央研究院人文館國際會議廳



[AS Conference]

6/30 14:00-17:00 人工智慧

SESSION 1. Artificial Intelligence



[Online Registration]

7/1 13:30-17:00 永續發展

SESSION 2. Sustainable Development

7/2

13:30-17:00 SESSION 3. 量子科技

Quantum Science and Technology

7/3 13:30-17:00 精準醫療

SESSION 4. Precision Healthcare

* 演講語言以中文為主

Organizers 籌辦單位



Institute of Physics
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Institute of Chemistry
化學研究所



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Research Center
for Applied Sciences
應用科學研究中心



[AS Conference]



[Online Registration]

Toward New Era in

Molecular and Materials Science and Technology

- **Artificial Intelligence** 邁向分子與材料科技的新時代
人工智慧

6/30

14:00-17:00



International Conference Hall, Humanities and Social Sciences Building, Academia Sinica
中央研究院人文館國際會議廳

14:00~15:00 Session A / Chair: Anatoli Fedynitch (IoP)

(A1) Examples of AI algorithms to enable new research in Physical Science
/Jer-Lai Kuo (IAMS)

(A2) Machine Learning and Artificial Intelligence in Chemistry: Application
for charge transport dynamics /Chao-Ping Hsu (IoC)

15:00~15:30 Coffee Break

15:30~16:30 Session B / Chair: Jer-Lai Kuo (IAMS)

(B1) AI as a Daily Companion in Computational Science /Anatoli Fedynitch (IoP)

(B2) Revealing Reactive Structural Transformations in Magnesium Oxide
through AI-Accelerated Simulations /David Wu (IoC)

16:30~17:00 Forum / Discussion Leader: Chao-Ping Hsu (IoC)

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***Toward New Era in
Molecular and Materials Science and Technology***

- Sustainable Development 永續發展 邁向分子與材料科技的新時代

7/1

13:30-17:00



International Conference Hall, Humanities and Social Sciences Building, Academia Sinica
中央研究院人文館國際會議廳

13:30~15:00 Session A / Chair: Ya-Ping Hsieh (IAMS)

- (A1) Supersaturation-Driven Co-Precipitation of Halide Solid-State Electrolyte for All-Solid-State Lithium Batteries /Mu-Huai Fang (RCAS)
- (A2) Macromolecular Battery Electrodes /Hung-Ju Yen (IoC)
- (A3) Design and Synthesis Advanced Materials for Next-Generation Energy Solutions /Chih-Wei Chu (RCAS)

15:00~15:30 Coffee Break

15:30~16:30 Session B / Chair: Hung-Ju Yen (IoC)

- (B1) Battery Energy Storage and Green Energy Development /Maw-Kuen Wu (IoP)
- (B2) 2D Materials Edges as a Platform for Electrocatalysis /Ya-Ping Hsieh (IAMS)

16:30~17:00 Forum / Discussion Leader: Chih-Wei Chu (RCAS)

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***Toward New Era in
Molecular and Materials Science and Technology***

- Quantum ➡➤ **邁向分子與材料科技的新時代**

Science and Technology

量子科技

7/2

13:30-17:00



International Conference Hall, Humanities and Social Sciences Building, Academia Sinica
中央研究院人文館國際會議廳

13:30~15:00 Session A / Chair: Chung-Ting Ke (IoP)

- (A1) Single-Photon-Level Detection Using Gap-Plasmon-Enhanced NbN Superconducting Photodetectors /Yu-Jung Lu (RCAS)
- (A2) Quantum Memory and Quantum Processor based on Neutral Atoms /Ying-Cheng Chen (IAMS)
- (A3) Superconductivity meets helical systems: hidden roles of interactions and vibrations in topological behavior /Chen-Hsuan Hsu (IoP)

15:00~15:30 Coffee Break

15:30~16:30 Session B / Chair: Yu-Jung Lu (RCAS)

- (B1) Cool Qubit, Advancing Superconducting Qubit in Quality and Quantity /Chung-Ting Ke (IoP)
- (B2) Wafer-scale 2D Material Homo-, Hetero- and Stacked- Structures for Device Applications /Shih-Yen Lin (RCAS)

16:30~17:00 Forum / Discussion Leader: Ying-Cheng Chen (IAMS)

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**Toward New Era in
Molecular and Materials Science and Technology**
- Precision Healthcare 邁向分子與材料科技的新時代
精準醫療

7/3 13:30-17:00

International Conference Hall, Humanities and Social Sciences Building, Academia Sinica
中央研究院人文館國際會議廳

13:30~15:00 Session A / Chair: Joseph Jen-Tse Huang (IoC)

- (A1) Reprogramming Pathological Tissue Microenvironment with Advanced Drug Delivery Systems /Yu-Jung Lin (RCAS)
- (A2) Advancing Biological Discovery with Interferometric Scattering Microscopy /Chia-Lung Hsieh (IAMS)
- (A3) Trigger-Responsive Peptidyl Liposome as Precision Nanomedicine /Hsien-Ming Lee (IoC)

15:00~15:30 Coffee Break

15:30~16:30 Session B / Chair: Yu-Jung Lin (RCAS)

- (B1) From Population-specific to individual-specific precision healthcare /Chin-Ling Guo (IoP)
- (B2) Condensation and Aggregation of Nucleic Acid-binding Proteins in Amyotrophic Lateral Sclerosis /Joseph Jen-Tse Huang (IoC)

16:30~17:00 Forum / Discussion Leader: Chin-Ling Guo (IoP)

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