



# The International Union of Materials Research Societies – The 19<sup>th</sup> International Conference on Electronic Materials 2026 (IUMRS-ICEM 2026)

Organized by the Materials Research Society of Thailand and Chiang Mai University

## Program Book



### June 28 – July 1, 2026

### The Empress Convention Center, Chiang Mai, Thailand

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# WELCOME MESSAGE

On behalf of the Materials Research Society of Thailand (MRS), it gives me great pleasure to wish a very warm welcome to all participants to:



## The International Union of Materials Research Societies- The 19th International Conference on Electronic Materials 2026 IUMRS-ICEM 2026

I would also like to express my most sincere gratitude for your presence on this conference. In brief, The IUMRS-ICEM 2026 will feature 13 technical sessions covering a broad range of topics, including Semiconductors, Photonic Materials and Devices; Polymers, Biomaterials and Medical Devices; Biosensors, Flexible, and Wearable Electronics; Ferroelectric and Piezoelectric Electronic Materials; Solar Cells, Materials and Devices for Energy Harvesting; Batteries, Materials and Devices for Energy Storage; Materials Processing for Advanced Packaging Technologies and Applications; Instrumentation and Advanced Materials Characterization; AI-driven Electronics, IoT and Digital Technologies for Next-generation Innovations; Recycling Materials and Environmentally-friendly Processing; Quantum Materials and Technologies; Industrial Perspectives in Materials and Innovation; Rare Earth, Critical Materials and its Applications. Attendees will have the opportunity to engage in stimulating discussions, presentations, and networking opportunities with experts from the international academic community and industry.

For this IUMRS-ICEM 2026 conference, the distinguished speakers including 6 plenary speakers, 71 keynote speakers and 69 invited speakers are invited from all over the world. The participants are over 600 from 23 countries.

The goal of this conference is to bring together, a multi-disciplinary group of scientists from all over the world to present and exchange breakthrough ideas relating to materials science. The conference promotes the globalization of quality research, focusing attention on recent achievements in both fundamental and applications of advanced materials as well as the future trends and needs in Materials Science Research.

Thanks are also due to our sponsors, exhibitors and supporters for their contribution which have made this conference possible. Recognition should also go to Materials Science Research Center, Faculty of Science, Chiang Mai University and the Local Organizing Committee members who have worked tirelessly to ensure the best quality experience for the delegates during the technical sessions. Finally, I would like to thank each of you for attending our conference and bringing your expertise to our gathering.

I sincerely hope that this conference will meet everyone's highest expectations.

Thank you very much for your participation.



**Prof. Santi Maensiri**  
Suranaree University of Technology  
Conference Chair & President of MRS-Thailand



**Assoc. Prof. Winita Punyodom**  
Chiang Mai University, Vice President  
Conference Co-chair

# WELCOME ADDRESS



**Professor Pongruk Sribanditmongkol, M.D., Ph.D.**

President of Chiang Mai University

On behalf of Chiang Mai University, may I add my own very warm welcome to the Plenary Lectures, Keynote Speakers, Invited Speakers and all participants to this international conference entitled:

**The International Union of Materials Research Societies-  
The 19th International Conference on Electronic Materials 2026  
IUMRS-ICEM 2026**

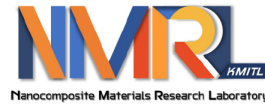
To have been chosen to host this important conference at which such a distinguished group of internationally recognized speakers has been assembled is an honour not only for Chiang Mai University but for the city of Chiang Mai as a whole.

In recent years, Materials Science in Chiang Mai University has played an important part in raising our research profile, both nationally and internationally, through attracting research grants and producing journal publications. We are now recognized as one of the leading Materials Science Centers in Thailand, both for teaching and research. The conference will focus on fundamental and applied research, innovation and current developments within related applications in materials science.

I would like to thank Materials Research Society of Thailand, Materials Science Research Center, Faculty of Science, Chiang Mai University, our co-organizers and sponsors for their respective contributions. I believe that organizing an international conference of this importance requires months of planning and preparation. I therefore commend the committees from various universities for their efforts in bringing us to this point. Hopefully, their efforts will be rewarded throughout the conference, and the event will meet everyone's highest expectations.

Thank you very much.

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Co-chairs

1. Assoc. Prof. Duangmanee Wongratanaphisan Thailand Center of Excellence in Physics, Chiang Mai University
2. Asst. Prof. Sakhorn Rimjaem Chiang Mai University
3. Dr. Nitipon Puttaraksa Chiang Mai University

## Keynote Speakers

### Symposium 1: Semiconductors, Photonic Materials and Devices

1. Prof. Li-Chyong Chen National Taiwan University, Taiwan
2. Prof. Sinn-Wen Chen President of MRS-Taiwan, National Tsing Hua University (NTHU), Taiwan
3. Prof. Ana Cecilia Noguez Garrido National Autonomous University of Mexico, Mexico
4. Prof. Sanjay Mathur University of Cologne, Germany
5. Dr. Luan Tran Formerly with Micron, TSMC and Bell Labs, Taiwan
6. Emeritus Prof. Jenq-Gong Duh National Tsing Hua University (NTHU), Taiwan
7. Prof. Jenn-Ming Song National Chung Hsing University, Taiwan
8. Prof. Hsin-Jay Wu National Taiwan University, Taiwan
9. Prof. Deok-Kee Kim Sejong University, Korea

### Thermoelectrics: Theories, Materials, Devices and Applications

1. Dr. Ryoji Funahashi National Institute of Advanced Industrial Science and Technology (AIST), Japan

### Symposium 2: Polymers, Biomaterials and Medical Devices

1. Prof. Alejandro J. Müller University of the Basque Country UPV/EHU, Spain
2. Prof. Suwabun Chirachanchai PETROMAT, Chulalongkorn University, Thailand
3. Prof. Yasuhiko Iwasaki Kansai University, Japan
4. Prof. Minna Hakkarainen KTH Royal Institute of Technology, Sweden
5. Prof. Hsu-Wei Fang National Taipei University of Technology, Taiwan
6. Assoc. Prof. Sarawut Kumphune Chiang Mai University, Thailand

### Symposium 3: Biosensors, Sensors, Flexible, and Wearable Electronics

1. Prof. Jae Young Lee Gwangju Institute of Science and Technology, South Korea
2. Prof. Maning Liu Lund University, Sweden

### Symposium 4: Ferroelectric, Piezoelectric, and Triboelectric Materials and Devices

1. Prof. Fei Li Xi'an Jiaotong University, China

### Symposium 5: Solar Cells, Materials and Devices for Energy Harvesting

1. Prof. Thomas Anthopoulos University of Manchester, United Kingdom
2. Prof. Soo-Wohn Lee Sun Moon University, South Korea
3. Distinguished Prof. Handong Sun University of Macau, China

### Symposium 6: Batteries, Materials and Devices for Energy Storage

1. Prof. Ru-Shi Liu National Taiwan University, Taiwan
2. Prof. Seong-Min Bak Yonsei University, South Korea
3. Prof. Mengyu Yan Wuhan University of technology, China
4. Prof. Huaiyu Shao University of Macau, China
5. Prof. Jae-Hyun Kim Daegu Gyeongbuk Institute of Science & Technology, South Korea
6. Prof. Katlego Makgopa Tshwane University of Technology, South Africa
7. Prof. Sammy Lap Ip Chan University of New South Wales (UNSW), Australia
8. Prof. Balla Diop Ngom Université Cheikh Anta Diop (UCAD), Dakar, Senegal
9. Prof. Dr. rer. nat. Evvy Karthini Universitas Pendidikan Indonesia
10. Prof. Somrerck Chandra-ambhorn King Mongkut's University of Technology North Bangkok
11. Prof. Liqiang Mai Wuhan University of Technology, China
12. Prof. Chia-Chih Chang National Yang Ming Chiao Tung University, Taiwan



# KEYNOTE SPEAKERS

## Symposium 7: Innovative Material Processing for Technological Applications

1. Asst. Prof. Dr.-Ing. Sakhob Khumkoa Suranaree University of Technology, Thailand
2. Prof. Hui Pan University of Macau, China
3. Distinguished Prof. Hyacinthe Randriamahazaka Université Paris Cité CNRS, France
4. Prof. Daniel H.C. Chua National University of Singapore, Singapore
5. Prof. Tohru Sekino University of Osaka, Japan
6. Assoc. Prof. Theeranun Siritanon Suranaree University of Technology, Thailand
7. Prof. Samuel Chigome Botswana Institute for Technology Research and Innovation, Botswana
8. Prof. Jyotsna Dutta Majumdar Indian Institute of Technology Kharagpur, India
9. Prof. Kandalam Ramanujachary Rowan University, NJ, USA

## Symposium 8: Instrumentation and Advanced Materials Characterization

1. Dr. Chanchana Thanachayanont MTEC, Thailand
2. Dr. Annop Klamchuen NANOTEC, Thailand
3. Prof. Ravi Kumar Indian Institute of Technology (IIT) Madras, India
4. Dr. Benjamin Victor Odari Masinde Muliro University of Science and Technology, Kenya
5. Prof. Yuhui Dong Institute of High Energy Physics, Chinese Academy of Sciences, China
6. Dr. Chanyong Hwang Korea Research Institute of Standards and Science, South Korea

## Symposium 9: AI-driven Electronics, IoT and Digital Technologies for Next-generation Innovations

1. Prof. Hirofumi Tanaka Kyushu Institute of Technology, Japan
2. Dr. Norbert Radacsi The University of Edinburgh, United Kingdom
3. Prof. Yusuke Sakemi Chiba Institute of Technology, Japan
4. Assoc. Prof. Suwit Suthirakul Suranaree University of Technology, Thailand
5. Dr. Adriana Martinez Oviedo Instituto Potosino de Investigación Científica y Tecnológica - IPICYT, Mexico

## Symposium 10: Recycling Materials and Environmentally-friendly Processing

1. Prof. Zoubeida Ounaies Pennsylvania State University, United States
2. Assoc. Prof. Paiboon Sreearunothai SIIT, Thammasat University, Thailand
3. Prof. Benjamin Agyei-Tuffour African MRS, University of Ghana, Ghana
4. Prof. Wenbin Cao University of Science and Technology Beijing
5. Dr. Sakprayut Sinthupinyo SCG Cement Co. Ltd., Thailand
6. Prof. Hideki Ono University of Toyama, Japan

## Symposium 11: Quantum Materials and Technologies

1. Prof. Pierre Ferdinand P. Poudeu University of Michigan, United States
2. Prof. Leong Chuan Kwek National University of Singapore, Singapore
3. Prof. Masato Yoshiya MRS-J, University of Osaka, Japan
4. Prof. Yasutaka Kitagawa University of Osaka, Japan

## Symposium 12: Industrial Perspectives in Materials and Innovation

1. Assoc. Prof. Boonrat Lohwongwatana Chulalongkorn University, Thailand
2. Dr. Jirut Wattoom SCG Chemicals Co.Ltd, Thailand
3. Dr. Narin Kaabbuathong Life Science Innovation Department, PTT Innovation Institute, Thailand
4. Prof. Yuttanant Boonyongmaheerat Chulalongkorn University, Thailand
5. Asst. Prof. Teerakiat Kerdcharoen Mahidol University, Thailand

# KEYNOTE SPEAKERS/INVITED SPEAKERS



## Symposium 13: Rare Earth, Critical Materials and its Applications

1. Prof. David Bradley University of Surrey, United Kingdom
2. Prof. C.K. Jayasankar Vice president, Rare Earth Association of India, India

## Special Symposia

### Symposium 14: Consortium for Advancing High Performance Industrial Postdoctoral and Postgraduate Researchers in Novel Materials to Drive High Impact Technology for Future Industry (PMU-B)

-none

### Symposium 15: Frontier Research of Quantum Beam and Material Applications in Japan and Thailand

1. Prof. Tadao Tanabe Shibaura Institute of Technology, Japan
2. Assoc. Prof. Duangmanee Wongratanaphisan Chiang Mai University, Thailand
3. Dr. Isao Watanabe Riken, Japan

## Invited Speakers

### Symposium 1: Semiconductors, Photonic Materials and Devices

1. Assoc.Prof. Sakon Rahong King Mongkut's Institute of Technology Ladkrabang, Thailand
2. Assoc.Prof. Sakuntam Sanorpim Chulalongkorn University, Thailand
3. Assoc. Prof. Chun-Yi Chen Tokyo Institute of Technology, Japan
4. Dr. Yuttana Intaravanne National Science and Technology Development Agency (NSTDA), Thailand

### Thermoelectrics: Theories, Materials, Devices and Applications

1. Dr. Chul-Ho Lee National Institute of Advanced Industrial Science and Technology (AIST), Japan
2. Dr. Yosuke Goto AIST, Japan
3. Dr. Hiroyasu Matsuura AIST, Japan
4. Dr. Qingshuo Wei AIST, Japan
5. Dr. Kenji Kamide AIST, Japan
6. Dr. Mikami Masashi AIST, Japan
7. Dr. Yasutaka Amagai AIST, Japan
8. Assoc.Prof. Athorn Vora-ud Sakon Nakhon Rajabhat University, Thailand
9. Prof. Supree Pinitsoontorn Khon Kaen University, Thailand
10. Prof. Aparporn Sakulkalavek King Mongkut's Institute of Technology Ladkrabang, Thailand
11. Prof. Atsuko Kosuga Osaka Metropolitan University, Japan

### Symposium 2: Polymers, Biomaterials and Medical Devices

1. Dr. Xu Li A\*STAR Institute of Materials Research and Engineering, Singapore
2. Assoc. Prof. Benchaporn Lertanantawong (Ph.D., SHFEA) Mahidol University, Thailand
3. Asst. Prof. Rattapol Pinnaratip Chiang Mai University, Thailand

### Symposium 3: Biosensors, Sensors, Flexible, and Wearable Electronics

1. Dr. Weerakanya Maneeprakorn National Nanotechnology Center (NANOTEC), NSTDA, Thailand
2. Assoc. Prof. Chatchawal Wongchoosuk Kasetsart University, Thailand
3. Asst.Prof. Nadnudda Rodthongkum Chulalongkorn University, Thailand
4. Prof. Boon Tong Goh University of Malaya, Malaysia



# INVITED SPEAKERS

## Symposium 4: Ferroelectric, Piezoelectric, and Triboelectric Materials and Devices

- |                                  |                                    |
|----------------------------------|------------------------------------|
| 1. Asst. Prof. Hyunwook Nam      | Tokyo University of Science, Japan |
| 2. Assoc. Prof. Viyada Harnchana | Khon Kaen University, Thailand     |
| 3. Prof. Nengneng Luo            | Guangxi University, China          |

## Symposium 5: Solar Cells, Materials and Devices for Energy Harvesting

- |                                      |  |
|--------------------------------------|--|
| 1. Prof. Marina Freitag              | University of Newcastle, United Kingdom                          |
| 2. Prof. Daniel Packwood             | Kyoto University, Japan  |
| 3. Assoc. Prof. Safakath Karuthedath | Tsing Hua University (Shenzhen), China                           |
| 4. Assoc. Prof. Aung Ko Ko Kyaw      | Southern University of Science and Technology, China             |
| 5. Assoc. Prof. Pierre-Henri Aubert  | CY Cergy Paris Université, France                                |
| 6. Prof. Fei Guo                     | Jinan University, China  |
| 7. Prof. Li-Hsien Yeh                | National Taiwan University of Science and Technology, Taiwan     |
| 8. Assoc. Prof. Nicola Gasparini     | Imperial College London, United Kingdom                          |
| 9. Asst. Prof. Shadi Fatayer         | King Abdullah University of Science and Technology, Saudi Arabia |
| 10. Prof. Akinori Saeki              | Osaka University, Japan  |
| 11. Prof. Martin Heeney              | King Abdullah University of Science and Technology, Saudi Arabia |
| 12. Dr. Paul Hume                    | Victoria University of Wellington, New Zealand                   |
| 13. Prof. Ho-Hsiu Chou               | National Tsing Hua University (NTHU), Taiwan                     |
| 14. Dr. Fabrice Mathevet             | Sorbonne Université, France                                      |
| 15. Prof. Martyn McLachlan           | Imperial College London, United Kingdom                          |
| 16. Prof. Dong-Won Kang              | Chung-Ang University, South Korea                                |
| 17. Assoc. Prof. Jongsung Park       | Gyeongsang National University, South Korea                      |

## Symposium 6: Batteries, Materials and Devices for Energy Storage

- |                                   |   |
|-----------------------------------|---|
| 1. Prof. Zhao Xiaoxu              | Peking University, China                          |
| 2. Prof. Do-Heyoung Kim           | Chonnam National University, South Korea          |
| 3. Prof. Kabeer Jasuja            | Indian Institute of Technology Gandhinagar, India |
| 4. Assoc. Prof. Ruohan Yu         | Wuhan University of Technology, China             |
| 5. Prof. Hee Jung Park            | Dankook University, South Korea                   |
| 6. Asst. Prof. Jitti Kasemchainan | Chulalongkorn University, Thailand                |

## Symposium 7: Innovative Material Processing for Technological Applications

-none-

## Symposium 8: Instrumentation and Advanced Materials Characterization

- |                                 |                                 |
|---------------------------------|---------------------------------|
| 1. Prof. Zhao Xiaoxu            | Peking University, China        |
| 2. Assoc. Prof. Seungwon Lee    | University of Toyama, Japan     |
| 3. Asst. Prof. Sakhorn Rimjaem  | Chiang Mai University, Thailand |
| 4. Assoc. Prof. Poramed Wongjom | Thammasart University, Thailand |

## Symposium 9: AI-driven Electronics, IoT and Digital Technologies for Next-generation Innovations

- |                           |                         |
|---------------------------|-------------------------|
| 1. Prof. Takuya Matsumoto | Osaka University, Japan |
|---------------------------|-------------------------|

## Symposium 10: Recycling Materials and Environmentally-friendly Processing

- |                            |  |
|----------------------------|--|
| 1. Asst. Prof. Jai Prakash | National Institute of Technology, India          |
| 2. Prof. Wilaiwan Leenakul | Rajamangala University of Technology Phra Nakhon |

## Symposium 11: Quantum Materials and Technologies

1. Asst. Prof. Narupon Chattrapiban Chiang Mai University, Thailand
2. Dr. Raúl Esquivel-Sirvent National Autonomous University of Mexico, Mexico
3. Asst. Prof. Salinporn Kittiwatanakul Chulalongkorn University, Thailand

## Symposium 12: Industrial Perspectives in Materials and Innovation

-none-

## Symposium 13: Rare Earth, Critical Materials and its Applications

1. Prof. Jeong-hwan Lee Inha University, South Korea
2. Assoc. Prof. Patarawagee Yasaka Nakhon Pathom Rajabhat University, Thailand
3. Assoc. Prof. Somsak Dangtip Thailand Nuclear Institute of Science and Technology, Thailand
4. Dr. Nuttawadee Intachai Chiang Mai University, Thailand
5. Asst. Prof. Piyachart Meejitpaisan Nakhon Pathom Rajabhat University, Thailand
6. Dr. Phieraya Pulphol Srinakharinwirot University, Thailand

## Special Symposia

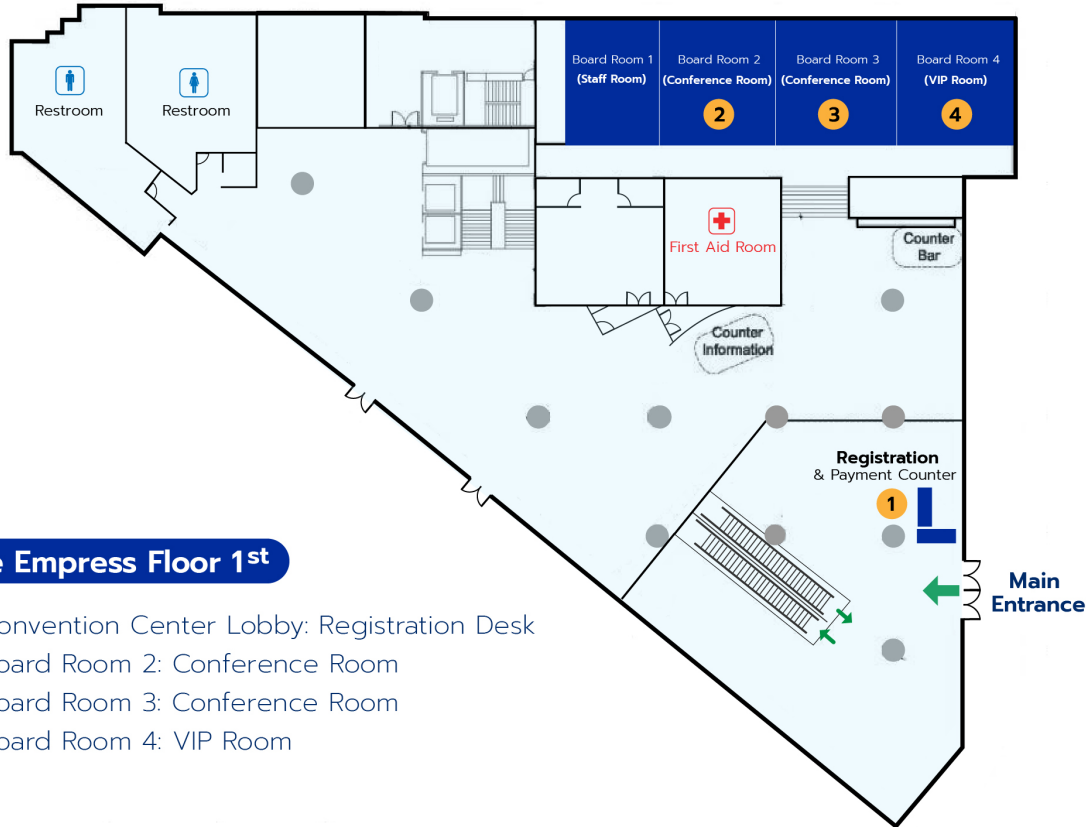
### Symposium 14: Consortium for Advancing High Performance Industrial Postdoctoral and Postgraduate Researchers in Novel Materials to Drive High Impact Technology for Future Industry (PMU-B)

1. Assoc. Prof. Hyung-Mo Jeong Sungkyunkwan University, South Korea
2. Mr. Atsuyoshi Maeda Murata Electronics (Thailand) Co., Ltd.
3. Mr. Prusapa Wikanaiz Murata Electronics (Thailand) Co., Ltd.

### Symposium 15: Frontier Research of Quantum Beam and Material Applications in Japan and Thailand

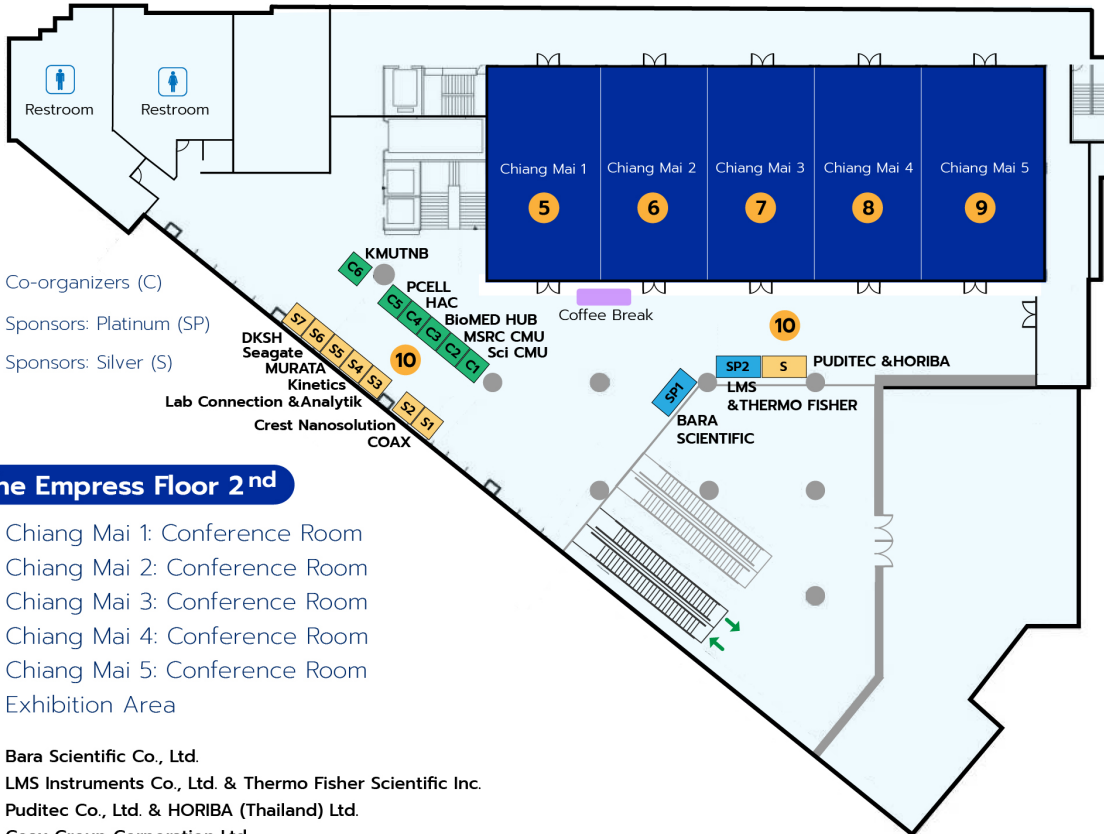
1. Prof. Akira Baba Niigata University, Japan
2. Assoc. Prof. Yugo Nagata Tokyo University of Marine Science and Technology, Japan
3. Assoc. Prof. Dita Puspita Sari Shibaura Institute of Technology, Japan
4. Asst. Prof. Sukrit Sucharitakul Chiang Mai University,
5. Asst. Prof. Haruka NAKANO Kyushu University, Japan
6. Dr. Zijiang Yang Tokyo University of Marine Science and Technology, Japan

## EMPRESS CONVENTION CENTER



### The Empress Floor 1<sup>st</sup>

1. Convention Center Lobby: Registration Desk
2. Board Room 2: Conference Room
3. Board Room 3: Conference Room
4. Board Room 4: VIP Room



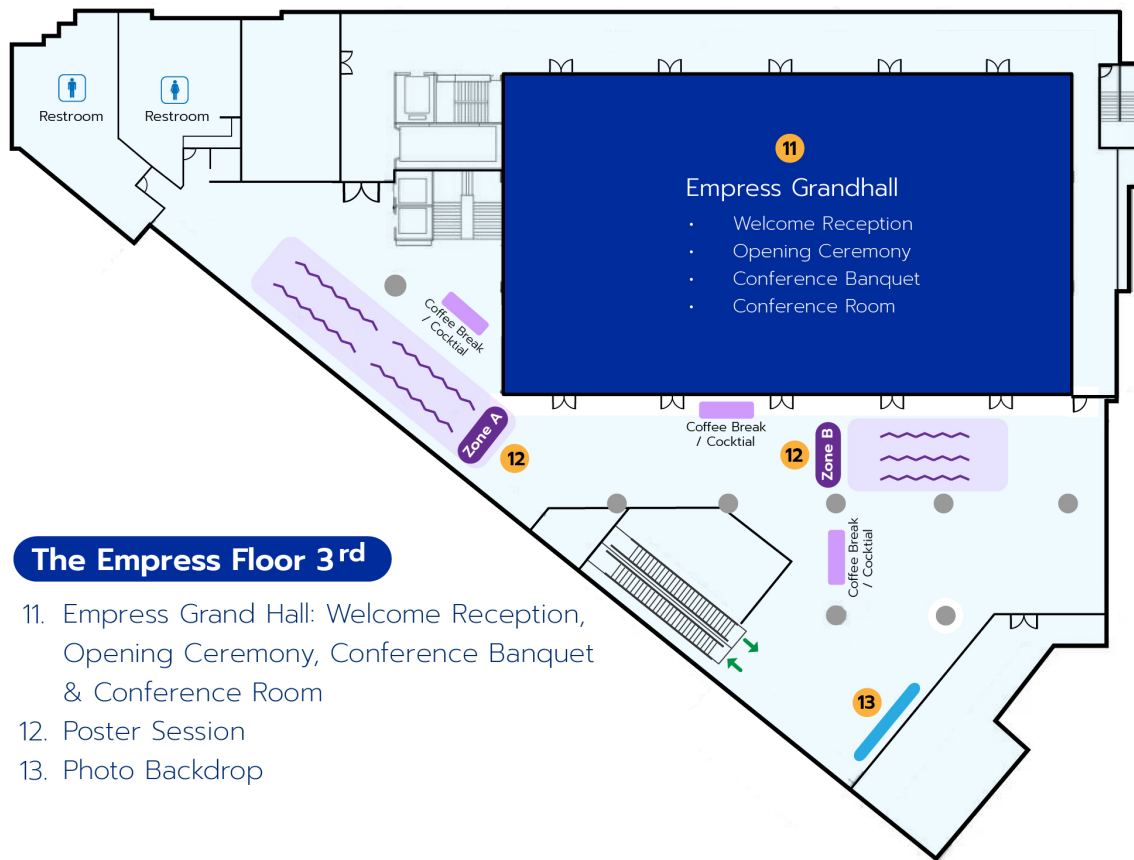
### The Empress Floor 2<sup>nd</sup>

5. Chiang Mai 1: Conference Room
6. Chiang Mai 2: Conference Room
7. Chiang Mai 3: Conference Room
8. Chiang Mai 4: Conference Room
9. Chiang Mai 5: Conference Room
10. Exhibition Area

- SP1** Bara Scientific Co., Ltd.
- SP2** LMS Instruments Co., Ltd. & Thermo Fisher Scientific Inc.
- S** Puditec Co., Ltd. & HORIBA (Thailand) Ltd.
- S1** Coax Group Corporation Ltd.
- S2** Crest Nanosolution (Thailand) Co., Ltd.
- S3** Lab Connection Co., Ltd. & Analytik Jena Instruments (Thailand) Ltd.
- S4** Kinetics Corporation Ltd.
- S5** Murata Electronics (Thailand), Ltd.
- S6** Seagate Technology (Thailand) Ltd.
- S7** DKSH Technology Ltd.

- C1** Faculty of Science, Chiang Mai University
- C2** Materials Science Research Center (MSRC), Chiang Mai University
- C3** Hub of Talents in Bioplastics for Use in Medical Applications, NRCT
- C4** Hub of Talents in Advanced Ceramics(HAC), NRCT
- C5** PBP-CMU Electron Linac Laboratory (PCELL), Chiang Mai University
- C6** King Mongkut's University of Technology North Bangkok

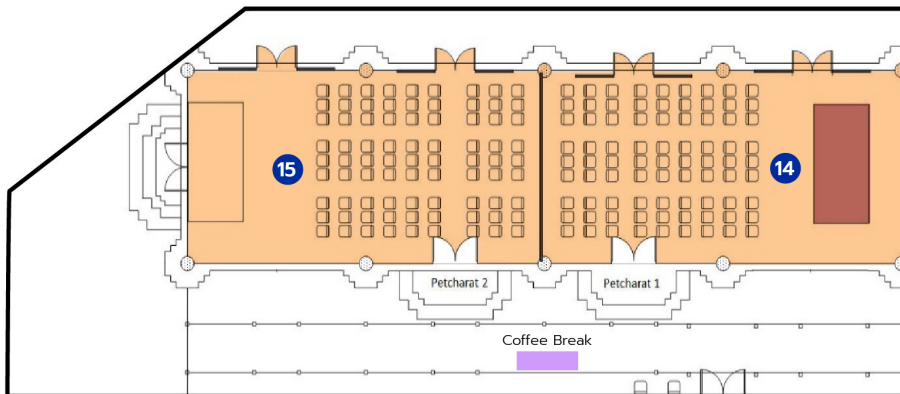
## EMPRESS CONVENTION CENTER



### The Empress Floor 3<sup>rd</sup>

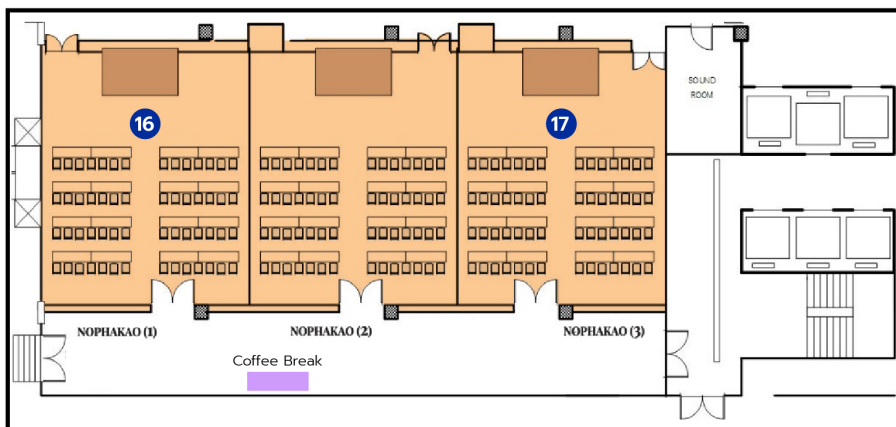
- 11. Empress Grand Hall: Welcome Reception, Opening Ceremony, Conference Banquet & Conference Room
- 12. Poster Session
- 13. Photo Backdrop

## THE EMPRESS HOTEL CHIANGMAI



### Petcharat Room - Floor 3<sup>rd</sup>

- 14. Petcharat 1: Conference Room
- 15. Petcharat 2: Conference Room



### Noppakao Room - Floor 3<sup>rd</sup>

- 16. Noppakao 1: Conference Room
- 17. Noppakao 3: Conference Room

June 28, 2026		Venue
10:00-12:00	IUMRS Executive Council Meeting	Nokyoong Meeting Room, The Empress Premier
13:00-17:00	Set-up & Registration	The Empress Convention Center
14:00-17:00	IUMRS AB Leadership Forum 2026	Nokyoong Meeting Room, The Empress Premier

June 29, 2026	
8:00-9:00	Registration
9:00-9:45	Opening Ceremony
9:45-10:30	Plenary Talk [PL01]
10:30-10:45	Break
10:45-11:30	Plenary Talk [PL02]
11:30-12:15	Plenary Talk [PL03]
12:15-13:30	Lunch
13:30-15:00	Parallel Session
15:00-15:15	Break
15:15-16:45	Parallel Session (15:15-16:15)/Grand Hall Elsevier Outreach/Author Workshop
17:00-19:30	Poster session & Welcome Reception  Cocktail refreshments & beverages served from 17.30

June 30, 2026	
8:00-9:00	Registration
9:00-9:45	Plenary Talk [PI04]
9:45-10:30	Plenary Talk [PL05]
10:30-10:45	Break
10:45-11:15	Parallel Session
11:15-12:15	Parallel Session
12:15-13:30	Lunch
13:30-15:00	Parallel Session
15:00-15:15	Break
15:15-16:45	Parallel Session (16:00-17:30)/Conference 1 MCP Editorial Board Meeting
17:00-18:00	Poster session
18:00-20:30	Conference Banquet

July 1, 2026	
8:30-9:00	Registration
9:00-9:45	Plenary Talk 6
9:45-10:30	Parallel Session
10:30-10:45	Break
10:45-11:15	Parallel Session
11:15-12:15	Parallel Session
12:15-13:30	Lunch
13:30-14:15	Parallel Session
14:15-14:30	Parallel Session
14:30-15:30	Closing Ceremony

## LOCATIONS FOR CONFERENCE ACTIVITIES

Conference Activities	Locations
Registration & Lunch	1 <sup>st</sup> Floor, Main Hall, The Empress Convention Center
Sponsor Booth Coffee Break	2 <sup>nd</sup> Floor, Main Hall, The Empress Convention Center
Opening Ceremony Plenary Sessions Conference Banquet Closing Ceremony	3 <sup>rd</sup> Floor, The Empress Grand Hall, The Empress Convention Center
Poster Session Welcome Reception Coffee Break	3 <sup>rd</sup> Floor, The Empress Grand Hall, The Empress Convention Center
Parallel Sessions Coffee Break	The Empress Convention Center <ul style="list-style-type: none"> <li>Boardroom (2&amp;3), 1<sup>st</sup> Floor</li> <li>Chiang Mai (1-5), 2<sup>nd</sup> Floor</li> <li>The Empress Grand Hall, 3<sup>rd</sup> Floor</li> </ul> Hotel Wing <ul style="list-style-type: none"> <li>Petcharat (1&amp;2), 3<sup>rd</sup> Floor</li> <li>Nopphakao (1&amp;3), 3<sup>rd</sup> Floor</li> </ul>

## Download Program Book



## Download Abstract Book



# PLENARY SPEAKERS



## **Prof. Rodrigo Ferro Paiva Martins**

NOVA School of Science and Technology, University Lisbon, Portugal

Abstract: Pioneering Sustainable Solutions: The Rise of Eco-Friendly Materials in Electronics

**PL1: June 29, 2026 (9:45-10:30)**



## **Prof. Ying-Hao Chu**

National Tsing Hua University, Chinese Taipei

Abstract: Soft Technology Beyond Polymers: Muscovite Mica as a Universal Platform for High-Performance Flexible Sensors and Actuators

**PL2: June 29, 2026 (10:45-11:30)**



## **Prof. Xing Yi Ling**

Nanyang Technological University, Singapore

Abstract: Machine Learning-Assisted SERS Nanosensors for Predictive Applications

**PL3: June 29, 2026 (11:30-12:15)**

## **Prof. Chihaya Adachi**

OPERA, Kyushu University, Japan

Abstract: Advanced Organic Optoelectronic Devices by Controlling Precise Charge Transfer Phenomena

**PL4: June 30, 2026 (9:00-9:45)**



## **Assoc. Prof. Soorathep Kheawhom**

Chulalongkorn University, Thailand

Abstract: Beyond materials: Understanding electrochemical energy systems through operando science

**PL5: June 30, 2026 (9:45-10:30)**



## **Dr. Adisorn Tuantranont**

Thai Microelectronics Center (TEEC), NSTDA, Thailand

Abstract: Graphene Electronics for Next Generation of Sensors and Energy Storages

**PL6: July 1, 2026 (9:00-9:45)**





# Symposium 1: Semiconductors, Photonic Materials and Devices

June 29, 2026

Room: Chiang Mai 1

Time	Title/Authors
	Chair: Assoc. Prof. Anucha Watcharapasorn Co-Chair: Prof. Wisanu Pecharapa
13.30-14.00	[KN] (S1_013) <b>Semiconductor Oxide Materials Steering Hydrogen Transition</b> <u>Sanjay Mathur</u>
14.00-14.30	[KN] (S1_03) <b>Transition Metal Dichalcogenides as Emerging Semiconductors: Growth, Doping/ Alloying, Optical Properties, and Light-driven Applications</b> <u>Li-Chyong Chen</u> , Tadios Tesfaye Mamo, Chih-Yang Huang, Yu-Chung Yeh, Mohammad Qorbani, Kuei-Hsien Chen
14.30-14.45	[OP] (S1_07) <b>Unveiling Noncollinear Antiferromagnetic and Altermagnetic Orders in Mn-based Materials</b> <u>Pin Ho</u>
14.45-15.00	[OP] (S1_010) <b>Ab Initio Investigation of Polaron-Mediated Charge Carrier Transport in BiOBr, BiOI, and BiOBr–BiOI Heterostructures</b> <u>Pathipat Latthiwan</u> , Thanayut kaewmaraya
15.00-15.15	Afternoon Break Chair: Prof. Wisanu Pecharapa Co-Chair: Dr. Tossaporn Lertvanithphol
15.15-15.45	[KN] (S1_016) <b>Influences of Cu<sub>1-x</sub>Ni<sub>x</sub> on the Rapid Formation, Grain Refinement, and Orientation Diversification of TLPB Microbumps in 3D-IC microelectronic packaging</b> <u>Jenq-Gong Duh</u> , Yin-Ku Lee
15.45-16.15	[KN] (S1_040) <b>Analog Synaptic Computing Using Janus WSSe Memristors for next generation Neuromorphic Systems</b> Faisal Ghafoor, Muneeb Ahmad, Muhammad Wajid Zulfiqar, Hammad Ghazanfar, Honggyun Kim, <u>Deok kee Kim</u>
16.15-16.30	[OP] (S1_01) <b>Development of Design rules for Minimizing Asymmetry Lateral Etch in MEMS Fabrication on Cavity-SOI Substrates</b> <u>Anantachai Lakrathok</u> , Jakrapong Supadech, Watcharapong Paosangthong, Chana Leepattarapongpan, Nithi Atthi, Wutthinan Jeamsaksiri, Adisorn Tuantranont, Chinorat Kobdaj

16.30-16.45 [OP] (S1\_011) **High-Temperature PDIV Performance of Sinter-Free MgO Powder Encapsulation for SiC Power Devices**

Wei Meng, Wenyuan Li, Xuebao Li, Yiping Wu, Zhibin Zhao, Rui Jin

17.00-18.30 Poster Session

June 30, 2026

Room: Chiang Mai 1

Time	Title/Authors
	Chair: Dr. Tossaporn Lertvanithphol Co-Chair: Asst. Prof. Thutiyaporn Thiwawong
10.45-11.15	[KN] (S1_04) <b>Structure–Chirality–Optical Response Relationships in Semiconducting Carbon Nanotubes</b> <u>Cecilia Noguez</u>
11.15-11.35	[IV] (S1_06) <b>Metal@Semiconductor Yolk@Shell Nanostructures for Broadband Solar-to-Hydrogen Conversion</b> <u>Chun-Yi Chen</u> , Jung-hoe Her, Tso-Fu Mark Chang, Masato Sone, Yung-Jung Hsu
11.35-11.50	[OP] (S1_029) <b>Plasmon-enhanced Au-decorated 3D semiconductor photocatalysts: Synthesis, optimization and enhanced optical properties for ultrasensitive detection and photocatalytic removal of organic pollutants</b> <u>Rupam Sharma</u> , Jai Prakash
11.50-12.05	[OP] (S1_014) <b>Activating WS<sub>2</sub> for Enhanced CO<sub>2</sub> Reduction via Cerium Doping: A Combined Experimental and Theoretical Study</b> <u>Chih-Yang Huang</u> , Kuei-Hsien Chen, Li-Chyong Chen
12.15-13.30	Lunch break Chair: Assoc. Prof. Doldet Tantraviwat Co-Chair: Asst. Prof. Thutiyaporn Thiwawong
13.30-14.00	[KN] (S1_05) <b>Interesting phenomena observed in electronic materials and at their joints: thermodynamics and kinetics</b> <u>Sinn-wen Chen</u>
14.00-14.20	[IV] (S1_024) <b>From Low-Dimensional Metal Oxide Semiconductors to Bio-Integrated Systems: Bridging Sensing, Thermal Switching, and Functional Platforms</b> Sakon Rahong

14.20-14.35	[OP] (S1_020) <b>Impact of Substrate Carbon Impurities on MOSFET Breakdown Voltage via Enhanced Phosphorus Out-Diffusion in n/n<sup>+</sup> Epitaxial Wafers</b>  Jinge Wang, Tong Zhao, Feihong Lu, Pengfei Gao, Junyuan Zhang, Xingbo Liang, Daxi Tian, Xiangyang Ma, Deren Yang
15.00-15.15	Afternoon Break
<b>Time</b>	<b>Title/Authors</b>
	Chair: Assoc. Prof. Sakon Rahong  Co-Chair: Assoc. Prof. Doldet Tantraviwat
15.15-15.45	[KN] (S1_035) <b>Light Enhanced Direct Metal Bonding for Advanced Electronic Assembly</b>  Jenn-Ming Song
15.45-16.05	[IV] (S1_025) <b>Geometric Metasurfaces for Advanced Photonic Devices</b>  Yuttana Intaravanne
16.05-16.20	[OP] (S1_012) <b>Transient Liquid Phase Bonding for High-Temperature SiC Power Devices Materials, Processes, and Performance</b>  Bo Zhao, Xuebao Li, Hao Li, Hongji Li, Yiping Wu, Zhibin Zhao, Rui Jin
16.20-16.35	[OP] (S1_037) <b>Effect of metal-doped W<sub>18</sub>O<sub>49</sub> material on their structural and optical properties for their photochromic application</b>  Junkrajang Wattana, Thanaphon Kansaard, Wanichaya Mekprasart, Kanokthip Boonyarattanakalin, Wisanu Pecharapa
17.00-18.30	Poster Session

July 1, 2026

Room: Chiang Mai 1

<b>Time</b>	<b>Title/Authors</b>
	Chair: Dr. Yuttana Intaravanne  Co-Chair: Assoc. Prof. Anucha Watcharapasorn
09.45-10.15	[KN] (S1_017) <b>Novel Materials Enabling DUV Extension in Device Scaling</b>  Luan Tran
10.15-10.35	[IV] (S1_034) <b>Enhanced Cubic Phase Stability in Epitaxial Lateral Overgrowth GaN on [110] Stripe-Patterned GaAs (001) Grown by MOVPE</b>  Sakuntam Sanorpim, Pattana Suwanyangyaun
10.35-10.45	Morning Break  Chair: Assoc. Prof. Sakuntam Sanorpim  Co-Chair: Dr. Tossaporn Lertvanithphol
10.45-11.00	[OP] (S1_038) <b>Comprehensive Electronic, Mechanical, and Vibrational Characterization of Orthorhombic MgSiN<sub>2</sub>: A Comparative First-Principles Study</b>  Anucha Yangthaisong
11.00-11.15	[OP] (S1_039) <b>A Unified Computational Framework for Physics-Based Semiconductor Material Ranking</b>  Atchariya Phuangyod, Wirat Wongsrinak, Watcharin Srirattanakul
11.15-11.30	[OP] (S1_041) <b>Analysis of Chlorophyll Fluorescence Emission and Photosynthetic Performance by Using Quantum Viewpoint of Radiation</b>  Atirat Maksuwan, Arpaong Changjan, Warapol Kasemsan, Nuttakorn Intaravicha
12.15-13.30	Lunch break
14.45-15.30	Closing Ceremony



# Symposium 1: Thermoelectrics - Theories, Materials, Devices and Applications (Special Session)

June 30, 2026 Room: Boardroom 3

Time	Title/Authors	
	Chair: Prof. Li-Chyong Chen	Chair: Prof. Tosawat Seetawan
	Co-Chair: Assoc. Prof. Anucha Watcharapasorn	Co-Chair: Assoc. Prof. Anucha Watcharapasorn
10.45-11.15	[KN] (S1_019) <b>Energy and carbon cycling by combustion of agricultural residue</b> <u>Ryoji Funahashi</u> , Tomoyuki Urata, Hiroyo Murakami, Hitomi Ikenishi	15.15-15.35 [IV] (S1_022) <b>Development of Heusler alloys and rapid sintering technique for practical thermoelectric power generation</b> <u>Masashi Mikami</u>
11.15-11.35	[IV] (S1_015) <b>Organic Thermoelectric Modules for Sustainable Low-Grade Thermal Energy Harvesting</b> <u>Qingshuo Wei</u>	15.45-16.05 [IV] (S1_036) <b>Manipulation of crystal symmetry and crystallinity in germanium-antimony-tellurides as thermoelectric bulk materials</b> <u>Atsuko Kosuga</u>
11.35-11.55	[IV] (S1_032) <b>Scalable Flexible Thermoelectric Modules for Self-Powered IoT and Wearable Thermal Management</b> Jakrit Gobpant, Chalernpol Rudradawong, Takahito Ono, Nguyen Van Toan, <u>Aparporn Sakulkalavek</u>	16.05-16.25 [IV] (S1_033) <b>Development of bulk Silver Selenide-based Thermoelectric Materials through Cold Sintering Process Approach</b> <u>Supree Pinitsoontorn</u> , Dulyawich Palaporn, Dejjikom Theprattanakorn, Piyawat Piyasin, Peeranut Kitthonbancha, Nuttapon Kongsip, Wanida Duangsimma, Wei-Di Liu, Zhi-Gang Chen
11.55-12.15	[IV] (S1_031) <b>Thermoelectricity of Iron-Titanium-Antimony Distorted Heusler Alloy Thin Films</b> <u>Athorn Vora-ud</u>	16.25-16.45 [IV] (S1_018) <b>Development and evaluation of MgAgSb/Mg<sub>3</sub>(Sb,Bi)<sub>2</sub> thermoelectric modules</b> Kazuo Nagase, Hironori Ohshima, Yosuke Goto, Masayuki Murata, <u>Chul-Ho Lee</u>
12.15-13.30	Lunch break Chair: Prof. Li-Chyong Chen Co-Chair: Prof. Tosawat Seetawan	16.45-17.05 [IV] (S1_027) <b>Thermal Utilization and Thermal Management Technologies in Photovoltaic Systems</b> <u>K. Kamide</u> , R. Funahashi, T. Urata, J. Sakuma, H. Akiyama, K. Tanahashi
13.30-14.00	[KN] (S1_028) <b>Anisotropic Crystals for High-performance Room-Temperature Thermoelectrics</b> <u>Hsin-Jay Wu</u>	17.05-17.20 [OP] (S1_08) <b>Low Cost, Room-Temperature Synthesis of High-Performance Ductile Thermoelectric Semiconductors</b> <u>Dejjikom Theprattanakorn</u> , Tong Xing, Tingwei Yin, Pengfei Qiu, Supree Pinitsoontorn, Xun Shi
14.00-14.20	[IV] (S1_021) <b>Recent theoretical progress of phonon-drag effect and magnon-drag effect</b> <u>Hiroyasu Matsuura</u>	17.20-17.35 [OP] (S1_09) <b>Enhanced Thermoelectric Performance of Ga-Doped AgCuTe</b> <u>Nur Janna</u> , Supree Pinitsoontorn
14.20-14.40	[IV] (S1_023) <b>Development of Mg<sub>3</sub>(Bi,Sb)<sub>2</sub> with axis-dependent conduction polarity for transverse thermoelectric devices</b> <u>Yosuke Goto</u>	17.00-18.30 Poster Session
14.40-15.00	[IV] (S1_026) <b>Measuring Key Thermoelectric Parameters from Materials to Modules — Absolute Seebeck coefficient and Module Efficiency</b> <u>Yasutaka Amagai</u>	
15.00-15.15	Afternoon Break	

# Symposium 2: Polymers, Biomaterials and Medical Devices

June 29, 2026

Room: Chiang Mai 2

Time	Title/Authors
	Chair: Prof. Minna Hakkarainen Co-Chair: Assoc. Prof. Kiattikhun Manokruang
13.30-14.00	<b>[KN] (S2_03) Development of phosphorus-containing macromolecular therapeutics for the treatment of bone diseases</b>  <u>Yasuhiko Iwasaki</u> , Sayako Takai, Hitomi Iisaka, Yota Okuno
14.00-14.20	<b>[IV] (S2_032) From liquid gallium to functional nanomaterials: Applications in electrochemical biosensors and biomedical devices</b>  <u>Benchaporn Lertanantawong</u> , Devi Govindaraj, Pornnapat Tungtrakarnkul, Anthony P. O'Mullane
14.20-14.35	<b>[OP] (S2_028) Biodegradable Polymer-Ceramic Composite Scaffolds for Bone Tissue Engineering through Mechanical Design, Surface Engineering, and Stem Cell Response</b>  <u>Sonthikan Sitthisang</u>
14.35-14.50	<b>[OP] (S2_016) PLGA/PEO/TC Electrospun Membranes for Dental Application</b>  <u>Thannaphat Jenvoraphot</u> , Krissana Tangamatakul, Chayarop Supanchart, Robert Molloy, Matthew J. Derry, Paul D. Topham, Brian J. Tighe, Patnarin Worajittiphon, Winita Punyodom, Donraporn Daranarong
14.50-15.05	<b>[OP] (S2_019) Formulation and Optimization of Curcumin-Loaded PDLGA Nanoparticles with Cationic Surface Functionalization for Enhanced Cartilage Targeting</b>  <u>Panta Pairsomran</u> , Paveena Tikakosol, Chawan Manaspon, Winita Punyodom
15.05-15.15	Afternoon Break Chair: Assoc. Prof. Pakorn Opaparakasit Co-Chair: Assoc. Prof. Kannika Sahakaro
15.15-15.45	<b>[KN] (S2_04) Long-chain branches in linear semi-crystalline polymers enhance overall crystallization by promoting homogeneous nucleation</b>  <u>Alejandro J. Müller</u>
15.45-16.00	<b>[OP] (S2_030) Synergistic Reinforcement of Chitin Nanofibers in Chitosan Films: Enhancing Properties for Food Packaging</b>  <u>Supachok Tanpichai</u> , Anyaporn Boonmahitthisud
16.00-16.15	<b>[OP] (S2_09) Effect of the Degree of Substitution of Carboxymethyl Cellulose on Packaging Film Properties</b>  <u>Piyathida Sriudom</u> , Yaowapa Treekamol
16.15-16.30	<b>[OP] (S2_021) Bio-based Biodegradable Films with Spent Coffee Ground Extract for Light-Protective Pharmaceutical Packaging</b>  <u>Kanyanat Chaiyasat</u> , Sumontha Ramangkoon, Patnarin Worajittiphon, Puttinan Meepowpan, Paul D. Topham, Winita Punyodom
16.30-16.45	<b>[OP] (S2_027) Silylated Bacterial Nanocellulose Aerogel via Chemical Vapor Deposition for Controlled-Release Cleaning in Painting Conservation</b>  <u>Norman Verschueren</u> , Pichayada Katemake, Ochana Poonthongdeewatthana, Kamonwan Pacaphol
17.00-18.30	Poster Session



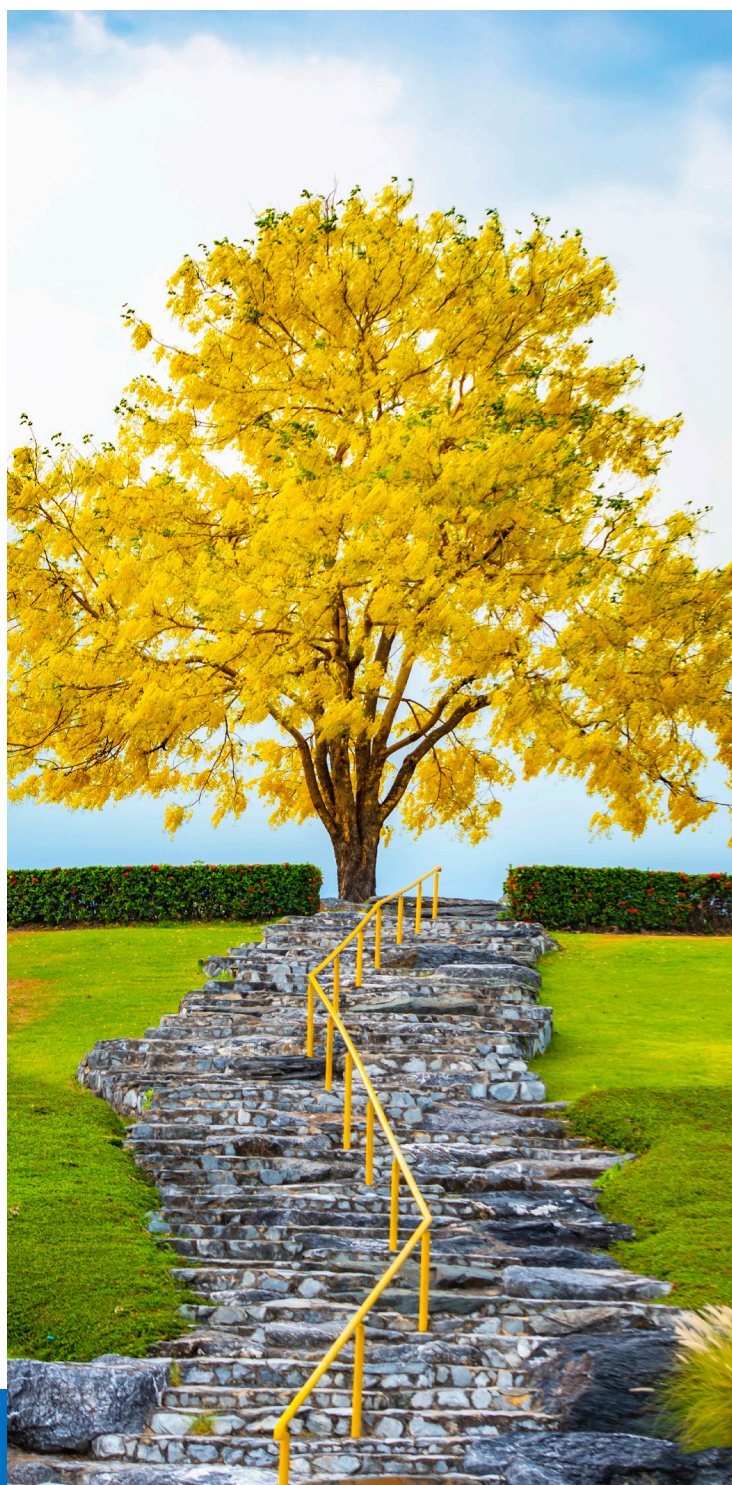


June 30, 2026

Room: Chiang Mai 2

Time	Title/Authors
	Chair: Prof. Yasuhiko Iwasaki Co-Chair: Asst. Prof. Patchara Punyamoongwongsa
10.45-11.15	<b>[KN] (S2_014) Valorization of Biochemicals for the Development of Bio-based Elastomers</b> <u>Suwabun Chirachanchai</u> , Seema Agarwal, Autchara Pangon, Rattapit Wuttisarn
11.15-11.30	<b>[OP] (S2_023) Antimicrobial thermoplastic cassava starch composite with chlorhexidine gluconate and titanium dioxide nanoparticles</b> <u>Kittisak Jantanasakulwong</u>
11.30-11.45	<b>[OP] (S2_024) Biodegradable Thermo-responsive Hydrogels for Water Retention in Soil at Elevated Temperature</b> <u>Sorapat Niyomsin</u> , Pongsakorn Pandee, Suwabun Chirachanchai
11.45-12.00	<b>[OP] (S2_025) Functionalization of Silk Sericin for Biomedical Application</b> <u>Witchaya Phasayavan</u> , Gareth M Ross, Jirapas Jongjitwimol, Thanyaporn Pinthong, Sararat Mahasaranon, Pensri Charoensit, Jarupa Viyoch, Paul D Topham, Brian J Tighe, Sukunya Ross
12.00-12.15	<b>[OP] (S2_029) Designing Stimuli Responsive and Injectable Hydrogel Scaffolds for Tissue Engineering Applications</b> <u>Pawitchaya Madech</u> , Nuttawut Khammata, <u>Ain Us Saba</u> , Doraporn Daranarong, Chawan Manaspon, Winita Punyodom, Kiattikhun Manokruang
12.15-13.30	Lunch break Chair: Assoc. Prof. Sukunya Ross Co-Chair: Assoc. Prof. Panya Sunintaboon
13.30-14.00	<b>[KN] (S2_015) Commercialization of biomaterials with a biodegradable polymer particle technology platform</b> <u>Hsu-Wei Fang</u>
14.00-14.20	<b>[IV] (S2_033) Design and Synthesis of Antibacterial Coating from Natural Materials and Phenolic Compounds</b> <u>Anchitta Sangsawang</u> , <u>Rattapol Pinnaratip</u>
14.20-14.35	<b>[OP] (S2_011) Enhancing Titanium Surfaces for Bone and Dental Applications</b> <u>Chawan Manaspon</u> , Traipob Korpanitchkul, Patipat Kamdenlek, Warit Powcharoen, Thantrira Porntaveetus, Thanaphum Osathanon, Shuichi Watanabe, Chavin Jongwannasiri
14.35-15.05	Academia-Industrial Sharing — Prof. Hsu-Wei Fang, Asst. Prof. Dr. Rattapol Pinnaratip, Assoc Prof Dr. Chawan Manaspon, All Industrial Partnerships
15.05-15.15	Afternoon Break Chair: Prof. Suwabun Chirachanchai Co-Chair: Assoc. Prof. Winita Punyodom
15.15-15.45	<b>[KN] (S2_01) Sustainable Polymers with Built-in Circularity</b> <u>Minna Hakkarainen</u>
15.45-16.00	<b>[OP] (S2_06) Highly active bis-lithium N-heterocyclic carbene complexes as lewis-acid organocatalysts for room-temperature <math>\epsilon</math>-caprolactone ring-opening polymerization: a mechanistic investigation</b> <u>Nathaporn Cheechana</u> , Natthapol Akkravijitkul, Chawanakorn Kongsak, Winita Punyodom, Puttinan Meepowpan
16.00-16.15	<b>[OP] (S2_012) DSC as a Fast Method to Determine the Activation Parameters for the Non-isothermal Ring-opening Polymerization of <math>\epsilon</math>-Caprolactone : A Comparative Study</b> <u>Wanich Limwanich</u> , Puttinan Meepowpan, Winita Punyodom
16.15-16.30	<b>[OP] (S2_022) Thermoresponsive Chitosan with Biomolecular Recognition: A Simple Platform for Low-Temperature Single-Phase Antigen Extraction</b> <u>Thanit Kertsomboon</u> , Chahya Kreangkaiwal, Kanitha Patarakul, Suwabun Chirachanchai
16.30-16.45	<b>[OP] (S2_026) Visible-light-crosslinkable zwitterionic quaternized chitosan-based hydrogel coating with dual antibacterial and antifouling properties</b> <u>Petchgaw Kanjanawattana</u>

16.45-17.00	[OP] (S2_017) <b>Wavelength-Selective Macromolecular Reorganization and Chain Cleavage in Poly(lactide-co-ε-caprolactone) via Mid-Infrared Free-Electron Laser Irradiation</b>  Jutamas Kongsuk, Nuttawat Khammata, Nuttawat Khammata, Hideaki Ohgaki, Heishun Zen, Sakhorn Rimjaem, Winita Punyodom
17.00-18.30	Poster Session



Time	Title/Authors
	Chair: Prof. Hsu-Wei Fang Co-Chair: Assoc. Prof. Patnarin Worajittiphon
09.45-10.15	[KN] (S2_034) <b>Smart Surfaces: Enhancing Bone-Implant Integration while Combating Bacterial Adhesion with SLPI Peptides</b>  Sarawut Kumphune
10.15-10.35	[IV] (S2_02) <b>Polymeric Materials for Sustainable Food Packaging</b>  Xu LI
10.35-10.50	Morning Break  Chair: Prof. Hsu-Wei Fang Co-Chair: Assoc. Prof. Patnarin Worajittiphon
10.50-11.05	[OP] (S2_018) <b>Sustainable Polymeric Biomaterials with Enhanced Mucoadhesion: Chitosan-Coated PLGA Nanoparticles towards Brain-Targeted Cannabidiol Delivery</b>  Sumontha Ramangkoon, Brian J. Tighe, Matthew J. Derry, Jutamas Jiaranaikulwanitch, Puttinan Meepowpan, Donraporn Daranarong, Paul D. Topham, Winita Punyodom
11.05-11.20	[OP] (S2_020) <b>Tailoring Electrospun PCL/PEO Fiber Morphology for 3D-Printed Composite Scaffolds in Parietal Bone Repair</b>  Chanathip Pathit, Manasanan Namhongsa, Tanyaluck Mekpothi, Tawan Chaiwon, Winita Punyodom
11.20-11.35	[OP] (S2_08) <b>Effect of MOF Dimensionality on Proton Transport in SPEEK-Based Polymer Electrolytes</b>  Teerapat Kotpatjim, Yaowapa Treekamol, Kanjana Janmapraw
11.35-11.55	[OP] (S2_05) <b>Visible light-induced formation of silver nanocomposites stabilizes with polyphosphodiester</b>  Thanaporn Jullabuth
12.15-13.30	Lunch break
14.30-15.00	Closing Ceremony



## Symposium 3: Biosensors, Sensors, Flexible, and Wearable Electronics

### June 29, 2026 Room: Chiang Mai 3

Time	Title/Authors
	Chair: Dr. Adisorn Tuatranont Co-Chair: Assoc. Prof. Kamonwad Ngamchuea
13.30-14.00	[KN] (S3_023) <b>Multifunctional Conductive Hydrogels for Biomedical Applications</b> <u>Jae Young Lee</u>
14.00-14.15	[OP] (S3_03) <b>Modified screen-printed electrodes for heavy metal determination in environmental samples</b> <u>Pattanut Ngaosri</u> , Watchara Suphap, Johannes Philipp Mensing, Chanpen Karuwan
14.15-14.30	[OP] (S3_04) <b>A portable electrochemical immunosensing of citrullinated histone H3 using screen-printed graphene electrodes</b> <u>Vitsarut Primpray</u> , Wichayaporn Kamsong, Assawapong Sappat, Anurat Wisitsoraat, Awirut Charoensappakit, Asada Leelahavanichkul, Chanpen Karuwan
14.30-14.45	[OP] (S3_06) <b>Signal-off electrochemical detection of glutathione based on competitive chloride-thiol coordination at copper-functionalized MIL-100(Fe)</b> <u>Chanida Jakkrawhad</u> , Christopher Batchelor-McAuley, Supinya Nijpanich, Kamonwad Ngamchuea
14.45-15.00	[OP] (S3_011) <b>Molecularly imprinted polymer for electrochemical detection of nucleosides</b> <u>Raputporn Kongjapo</u> , Jinnapat Wijitsak, Kamonwad Ngamchuea
15.00-15.15	Afternoon Break Chair: Dr. Adisorn Tuatranont Co-Chair: Dr. Chanpen Karuwan
15.15-15.35	[IV] (S3_01) <b>Quantum Dots-Based Gas and Chemical Sensors: From Fundamental Mechanisms to Real-World Applications</b> <u>Chatchawal Wongchoosuk</u>

15.35-15.55	[IV] (S3_018) <b>AI-Augmented Wearable Bioelectronics: A Flexible, Sweat-Based Glucose Monitoring System for Precision Diabetes Management</b> <u>Nadtinan Promphet</u> , Chusak Thanawattano, Thidarut Laochai, Panlop Lormaneenopparat, Wiwittawin Sukmas, Pranee Rattanawaleedirojn, Pumidech Puthongkham, Pranut Potiyaraj, <u>Nadnudda Rodthongkum</u>
15.55-16.10	[OP] (S3_08) <b>CuO and CeO<sub>2</sub> Functionalized PLA-Derived Polyurethane/MXene Networks for Flexible Non-Enzymatic Glucose Sensing Platforms</b> <u>Oceu Dwi Putri</u> , Atitsa Petchsuk, Pakorn Opaprakasit, Kazuaki Matsumura
16.10-16.25	[OP] (S3_016) <b>Design and Development of a Wearable Dual-Electrode Sweat-Harvesting Energy Device</b> <u>You-Zeng, Wu</u> , Jennifer Marsha Susanto, Dhanaprabhu Pattappan, Yi-Ting Lai
17.00-18.30	Poster Session

### June 30, 2026 Room: Chiang Mai 3

Time	Title/Authors
	Chair: Dr. Adisorn Tuatranont Co-Chair: Assoc. Prof. Kamonwad Ngamchuea
10.45-11.15	[KN] (S3_05) <b>Quasi-2D Layered Double Perovskite Nanocrystals: A New Game Changer for Eco-Friendly Flexible Light-Converting Applications</b> <u>Maning Liu</u>
11.15-11.30	[OP] (S3_013) <b>Polypyrrole/Ag<sub>2</sub>S Quantum Dot-Based Nanocomposite for Gas Sensing Applications at Room Temperature</b> <u>Supakit Chinpakdee</u> , Tanatsaparn Tithito, Sarawut Kondee, Chatchawal Wongchoosuk
11.30-11.45	[OP] (S3_015) <b>Development of a Sustainable Paper-based Analytical Device Using Natural Anthocyanin for Rapid Sweat Lactic Acid Detection as a Preliminary Health Indicator</b> <u>Kanyarat Suksomjaisaman</u> , Timpika Hormsombut, Nopchulee Cheeveewattanagul, <u>Patsamon Rijiravanich</u>

11.45-12.00	[OP] (S3_014) <b>Interface-Engineered Au Nanoclusters/zinc oxide-CQDs via Microwave-Assisted Synthesis for Ratiometric Fluorescence Sensing and Photocatalytic Degradation of Antibiotics</b>  <u><a href="#">linda Kumalayanti</a></u>	Chair: Dr. Adisorn Tuatranont  Co-Chair: Assoc. Prof. Kamonwad Ngamchuea
12.00-12.15	[OP] (S3_027) <b>Facile Fabrication of Cost-effective Plasmonic SERS Substrates for Sensitive Paraquat Detection</b>  Nopphamat Thepin, Asmar Sathukarn, Pitak Eiamchai, Mati Horprathum, Noppadon Nuntawong, Khwanchai Tantiwanichapan, <u><a href="#">Raju Botta</a></u>	15.15-15.35 [IV] (S3_02) <b>Engineering Morphology and Interfacial Properties of Silicide-based Nanowires for Electrochemical Energy Storage and Magnetic Applications</b>  <u><a href="#">Boon Tong Goh</a></u> , Xiaoxi Li, Najwa binti Hamzan, Mohammad Mukhlis Ramly
12.15-13.30	Lunch break  Chair: Dr. Adisorn Tuatranont  Co-Chair: Dr. Chanpen Karuwan	15.35-15.50 [OP] (S3_010) <b>Correlating structural properties with capacitive and faradaic responses in graphene screen-printed electrodes</b>  <u><a href="#">Tharinda Kasemphong</a></u> , Monchai Jitvisate, Chanida Jakkrawhad, Wichayaporn Kamsong, Chanpen Karuwan, Pachanuporn Sunon, Supinya Nijpanich, Phanawan Whangdee, Theranun Siritanon, Kamonwad Ngamchuea
13.30-13.50	[IV] (S3_026) <b>Toward Simple and Deployable Nano-Enabled Sensing Platforms for Diagnostics and Environmental Monitoring</b>  Aurachat Lert-itthiporn, Tik Ouiram, Nararat Yong, Satita Gerdsapaya, Suwussa Bamrungsap, Dechnarong Pimalai, Weeraphat Pon-On, <u><a href="#">Weerakanya Maneeprakorn</a></u>	15.50-16.05 [OP] (S3_024) <b>Surface-Modified Titanium Electrodes for In Situ Electrochemical Monitoring of Corrosion and Shelf-Life Degradation in Canned Food Packaging</b>  <u><a href="#">Pornsak Srisungsitthisunti</a></u> , Noparat Kanjanprayut
13.50-14.05	[OP] (S3_017) <b>A Versatile Colorimetric Assay for Rapid Environmental Lead Ion Screening and Detection Using DNAzyme-Functionalized Magnetic and Gold Nanoparticles</b>  <u><a href="#">Nopchulee Cheeveewattanagul</a></u> , Nutsara Mekjinda, Paskorn Muangphroma, Patsamon Rijiravanich	16.05-16.20 [OP] (S3_022) <b>CNT/PDMS Nanocomposite In-Sensor Reservoir Computing Device for Real-Time Object Recognition</b>  <u><a href="#">Kouki Kimizuka</a></u> , Ahmet Karacali, Saman Azhari, Yuki Usami, Shuhei Ikemoto, Hakaru Tamukoh, Hirofumi Tanaka
14.05-14.20	[OP] (S3_020) <b>All-in-one, multiplex paper microfluidic diagnostic kit for malarial pathogens quantification in remote populations</b>  <u><a href="#">Natcha Siriyod</a></u> , Nopchulee Cheeveewattanagul, Khajohnpong Manopwisedjaroen, Wang Nguित्रagool, Patsamon Rijiravanich	17.00-18.30 Poster Session
14.20-14.35	[OP] (S3_025) <b>Rapid Determination of H<sub>2</sub>O<sub>2</sub> in Exhaled Breath Condensate using a Laminated Paper-Based Chemiluminescence Device with Co-MOF as a Catalyst</b>  <u><a href="#">Chonnatee Tinala</a></u> , Wasin Somboot, Tippawan Prapamontol, Jaroon Jakmunee, Tinakorn Kanyanee	
15.00-15.15	Afternoon Break	

**June 29, 2026**

**Room: Empress Grand Hall**

Time	Title/Authors
	Chair: Prof. Naratip Vittayakorn
	Co-Chair: Prof. Hyunwook Nam and Assist.Prof. Sasipohn Prasertpalichat
13.30-14.00	[KN] (S4_06) <b>Ultrahigh Piezoelectric Response in Relaxor Ferroelectric Ceramics and Crystals from Local Structural Heterogeneity</b>  Fei Li
14.00-14.15	[OP] (S4_05) <b>Lead zirconate titanate ceramics with aligned crystallite grains</b>  Jinglei Li, Shujun Zhang, Fei Li
14.15-14.30	[OP] (S4_01) <b>Bi<sub>2</sub>O<sub>2</sub>Se /PbHfO<sub>3</sub> Heteroepitaxy for Antiferroelectric Field-Effect Transistor</b>  Ping Li Huang, Yu Hao Tu, Yu Hsien Lee, Ying Hao Chu
14.30-14.45	[OP] (S4_07) <b>Preparation of Several Novel Ferroic Functional Oxides based on Lattice Strain Engineering</b>  Tianyu Li, Jun Chen
14.45-15.00	[OP] (S4_09) <b>Barrier-free near-zero-field switching in sliding ferroelectrics</b>  Yuanda Liu, Jinghua Teng
15.00-15.15	Afternoon Break



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17.00-18.30 Poster Session

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**June 30, 2026**

**Room: Empress Grand Hall**

<b>Time</b>	<b>Title/Authors</b>
	Chair: Assoc.Prof. Natthaphon Raengthon Co-Chair: Assist. Prof. Thitirat Charoonsuk
10.45-11.05	[IV] (S4_03) <b>Development of sustainable functional materials for triboelectric nanogenerators</b> <u>Viyada Harnchana</u>
11.05-11.25	[IV] (S4_010) <b>Ordered Heterogeneous Interfaces Enable Temperature-Insensitive and Ultrahigh-Energy-Storage Multilayer Ceramic Capacitors</b> <u>Nengneng Luo, Xiafeng He</u>
11.25-11.40	[OP] (S4_015) <b>Liquid-Solid Interfacial Dynamics-Driven Performance Enhancement in Tube-Shaped Triboelectric Nanogenerators for Ocean Wave Energy Harvesting</b> <u>Utchawadee Pharino, Yossaya Jaitam, Ananya Intharangsee, Sirinya Ukasi, Naratip Vittayakorn</u>
11.40-11.55	[OP] (S4_012) <b>Zn-Mg ZIF-Incorporated PVDF-HFP-based Nanofiber Films for Biomechanical Energy Harvesting</b> <u>Venkata Siva Kavarthapu, Goutham Gatla, Jae Su Yu</u>
11.55-12.10	[OP] (S4_013) <b>Liquid Metals in Liquid-Solid Nanogenerators for High-Performance Energy Conversion</b> <u>Supakarn Worathat, Utchawadee Pharino, Kanokwan Chaithaweep, Sugato Hajra, Charalampos Pitsalidis, Noppawit Sukpan, Pongsakorn Kanjanaboos, Wanwilai Vittayakorn, Saichon Sriphan*, Naratip Vittayakorn</u>
12.15-13.30	Lunch break Chair: Prof. Theerachai Bongkarn Co-Chair: Prof. Nengneng Luo
13.30-14.00	[IV] (S4_02) <b>Quenching-Driven Enhancement of Thermal and Piezoelectric Stability in Bi-based Ferroelectrics</b> <u>Hyunwook Nam, Yuka Takagi, Hajime Nagata</u>
14.00-14.15	[OP] (S4_011) <b>Enhanced Electromechanical Strain in A-site Modified Lead-Free Relaxor Ferroelectric Ceramics</b> <u>Ketkao Bunpang, Puripat Kantha, Jialuo Wang, Pathit Premwichit, Sasipohn Prasertpalichat, Xiaoxu Zhao, Natthaphon Raengthon</u>
14.15-14.30	[OP] (S4_08) <b>Synthesis of Carbon Dots Derived from Coffee Grounds for Enhancing the Performance of Triboelectric Nanogenerator</b> <u>Sulen Chann, Sikharithan Chitthongkul, Viyada Harnchana</u>
14.30-14.45	[OP] (S4_014) <b>Kinetic Analysis of Liquid-Solid Contact Electrification: Using Adsorption Models as Mechanistic Probes for Hybrid EDL Behavior</b> <u>Kanokwan Chaithaweep, Utchawadee Pharino, Satana Pongampai, Saichon Sriphan, Thitirat Charoonsuk, Sugato Hajra, Wanwilai Vittayakorn, Tosapol Maluangnont, Naratip Vittayakorn</u>
15.00-15.15	Afternoon Break
17.00-18.30	Poster Session



# Symposium 5: Solar Cells and Optoelectronic Materials and Devices for Energy Harvesting

June 29, 2026

Room: Chiang Mai 4

Time	Title/Authors
	Chair: Prof. Duangmanee Wongratanaphisan Co-Chair: Dr. Pisist Kumnorkaew
13.30-14.00	[KN] (S5_07) <b>Advancing the performance of printed organic photovoltaics</b> <u>Thomas D. Anthopoulos</u>
14.00-14.20	[IV] (S5_018) <b>Emerging Organic Semiconductors for Photovoltaics</b> <u>Aung Ko Ko Kyaw</u>
14.20-14.40	[IV] (S5_09) <b>NIR and SWIR light detection: next-generation organic photodetectors for imaging and biometric applications</b> <u>Nicola Gasparini</u>
14.40-15.00	[IV] (S5_010) <b>Design and Synthesis of Semiconducting Polymers for Solar-driven Hydrogen Evolution from Water</b> <u>Ho-Hsiu Chou</u>
15.00-15.15	Afternoon Break Chair: Prof. Duangmanee Wongratanaphisan Co-Chair: Dr. Pisist Kumnorkaew
15.35-15.55	[IV] (S5_032) <b>Sustainable Routes for the Synthesis and Circularity of Metal Halide Perovskite Materials and Devices</b> <u>Martyn A. Mclachlan</u>
15.55-16.10	[OP] (S5_033) <b>Secondary Ammonium-Mediated 2D/3D Heterointerface Reconstruction for Stable Perovskite Solar Cells</b> <u>Chukwuebuka Emmanuel Usulor</u>
16.10-16.25	[OP] (S5_034) <b>Bridging Small-Molecule Adducts and Macromolecular Topology to Engineer Stable Perovskite Halide under Ambient Conditions</b> <u>Rongrong Cheacharoen</u> , Chinnatip Harnmanasvate, Rico Meitzner, Rungroj Chanajaree, Eva Unger, Nopporn Rujisamphan, Yuxin Liu, Yaoguang Rong
16.25-16.40	[OP] (S5_045) <b>Cu<sub>2</sub>O-MIL-53(Al) Metal-Organic Framework Nanocomposite Surface Passivation for Stable Perovskite Solar Cells</b> <u>Sorrawit Meeklinhom</u> , Madsakorn Towannang, Chalita Ratanatawanate, Kitiphath Sinthiptharakoon, Anusit Kaewprajak, Pisist Kumnorkaew
16.40-16.55	[OP] (S5_046) <b>CsPbBr<sub>3</sub> Quantum Dots for Efficient and Stable Carbon-Based Perovskite Solar</b> <u>Isaac Chinaza Ogbuagu</u>
17.00-18.30	Poster Session

June 30, 2026

Room: Chiang Mai 4

Time	Title/Authors
	Chair: Dr. Pisist Kumnorkaew Co-Chair: Prof. Duangmanee Wongratanaphisan
10.45-11.15	[KN] (S5_016) <b>Upconversion Behavior for Energy Harvest and High-Temperature Spectral Properties of Yb/Ho- SiAlON, and Yb/Er- BiVO<sub>4</sub> Ceramics</b> <u>Soo Wahn Lee</u> , Yuwaraj K Kshetri
11.15-11.35	[IV] (S5_015) <b>Automated Experiments and Digital Transformation in Next-Generation Solar Cell Research</b> <u>Akinori Saeki</u>
11.35-11.55	[IV] (S5_030) <b>Compositional Engineering on Metal Halide Perovskites for Efficient Tandem Photovoltaics</b> <u>Dong-Won Kang</u>
11.55-12.15	[IV] (S5_024) <b>Low-temperature (<math>\leq 100^\circ\text{C}</math>) Processed p-i-n structured AgBiS<sub>2</sub> Solar cell via Co-evaporation</b> <u>Minho CHOI</u> , Suhwan KIM, <u>Jongsung PARK</u>
12.15-13.30	Lunch break Chair: Prof. Vinich Promarak Co-Chair: Dr. Pichaya Pattanasattayavong
13.30-13.50	[IV] (S5_021) <b>Towards Ultrahigh Osmotic Energy Harvesting by MOF and COF Based Ionic Diode Membranes</b> <u>Li-Hsien Yeh</u>
13.50-14.10	[IV] (S5_019) <b>Bridging 3D Carbon Foams and COF-Based Composites: A Multi-Scale Approach to Next-Generation Energy Storage</b> <u>Hugo Lavillunière</u> , Cécile Jouanne, Thuan Pham-Truong, Cédric Vancaeyzeele, <u>Pierre-Henri Aubert</u>
14.10-14.25	[OP] (S5_014) <b>Tailoring crystallization in hybrid metal organochalcogenide semiconductors: From large structures to nanocrystals</b> <u>Watcharaphol Paritmongkol</u>
14.25-14.40	[OP] (S5_025) <b>Development of Photocatalytic Platforms via Integration of Plasmonic Nanoparticles with Double-Network Hydrogels</b> <u>Irjeng Ruan</u> , Chen-Yi Hsueh
15.00-15.15	Afternoon Break

	Chair: Dr. Pichaya Pattanasattayavong Co-Chair: Prof. Vinich Promarak
15.15-15.35	[IV] (S5_028) <b>Light to Logic: Ambient Photocapacitors for Battery-Free Edge Computing</b> <u>Marina Freitag</u>
15.35-15.50	[OP] (S5_04) <b>Short-wavelength infrared imaging with organic photodetectors based on non-fullerene acceptors with detection above 1200 nm</b> <u>Zhuoran Qiao</u> , Martin Heeney, Nicola Gasparini
15.50-16.05	[OP] (S5_05) <b>From Charge Collection Narrowing to Photomultiplication: Unconventional Strategies to Enhance NIR/SWIR Detection in Organic Photodetectors</b> <u>Matilde Brunetta</u> , Bob C. Schroeder, Nicola Gasparini
16.05-16.20	[OP] (S5_01) <b>Complex formation of hybrid electron transport materials enabling high performance and photostability in organic photovoltaics</b> <u>Patipan Sukpoonprom</u>
16.20-16.35	[OP] (S5_03) <b>Effect of Side Chain Modification on Performance of Organic Solar Cells</b> <u>Amadou Barry</u> , Safakath Karuthedath
17.00-18.30	Poster Session

July 1, 2026

Room: Chiang Mai 4

Time	Title/Authors
	Chair: Dr. Pisist Kumnorkaew Co-Chair: Dr. Pichaya Pattanasattayavong
09.45-10.15	[KN] (S5_017) <b>Colloidal Semiconductor Topological Lasers</b> <u>Handong SUN</u>
10.15-10.35	[IV] (S5_047) <b>(Macro)molecular materials based on through-space donor-acceptor interactions</b> <u>Fabrice Mathevet</u> , Dizheng Liu, Chao Wu, Lihua Chen, Lucas Frederic, Lydia Sosa-Vargas, David Kreher, Shaodong Zhang, Chihaya Adachi
10.35-10.50	[OP] (S5_012) <b>Light emitting materials based on oxygen-bridged triphenylamine polymers for optoelectronic applications</b> <u>Patthira Sumsalee</u> , Yusei Kaya, Chihaya Adachi, Lydia Sosa Vargas, Fabrice Mathevet
	Morning Break

	Chair: Dr. Pichaya Pattanasattayavong Co-Chair: Prof. Vinich Promarak
10.50-11.10	[IV] (S5_08) <b>Charge Generation in Organic Solar Cells</b> <u>Safakath Karuthedath</u>
11.10-11.30	[IV] (S5_027) <b>Triplet Formation and Photo-Switching in Flexible Molecular Electron Acceptors</b> <u>Paul A. Hume</u> , Sai Shruthi Murali, Aditi Kumar, Justin M. Hodgkiss
11.30-11.50	[IV] (S5_020) <b>Modeling coordination polymer interfaces for device simulations</b> <u>Daniel Packwood</u> , James Scott, Joseph Nelson, Pichaya Pattanasattayavong
11.50-12.05	[OP] (S5_02) <b>Interfacial Charge Transfer toward Artificial Leaf Architectures Probed by Scanning Probe Techniques</b> <u>He-Yun Du</u> , Kuei-Hsien Chen, Li-Chyong Chen
12.15-13.30	Lunch break Chair: Prof. Vinich Promarak Co-Chair: Prof. Duangmanee Wongratanaphisan
13.30-13.45	[OP] (S5_023) <b>Efficient Non-Doped Deep Red to Near-Infrared (NIR) Fluorescent OLEDs Using o-Hydroxyphenylphenanthroimidazole-Indandione Derivatives via ESIPT Mechanism</b> <u>Pongsupradit Y.</u> , Wongkaew P., Saenubol P., Rueantong K., Sudyodsuk T., Promarak V.
13.45-14.00	[OP] (S5_013) <b>Triplet-Charge Annihilation Governs Recoverable Thermal Degradation in Organic Solar Cells</b> <u>Yexiao Huang</u> , Safakath Karuthedath
14.00-14.15	[OP] (S5_026) <b>SiO<sub>2</sub> interfacial layer for the improved photodiode properties of Silicon Schottky diodes.</b> <u>M.M. Ntobeng</u> , J. O. Bodunrin, S. J. Moloi
14.30-15.30	Closing Ceremony



# Symposium 6: Batteries, Materials and Devices for Energy Storage

June 29, 2026

Room: Chiang Mai 5

Time	Title/Authors
	Chair: Dr. Pinit Kidkhunthod Co-Chair: Prof. Siriporn Jungstittiwong
13.30-14.00	[KN] (S6_037) <b>Nanostructured Energy Storage Materials and Devices</b> <u>Liqiang Mai</u> , Ruohan Yu
14.00-14.30	[KN] (S6_015) <b>Field-effect electrochemical energy storage devices</b> <u>Mengyu Yan</u>
14.30-14.45	[OP] (S6_07) <b>Effect of activation strategy on the electrochemical performance of silk cocoon derived carbon for supercapacitor applications</b> <u>Suritno Fayanto</u> , Wassana Wannabut, Pawinee Klangtakai
14.45-15.00	[OP] (S6_08) <b>Investigation of the charge storage mechanism of hydrothermally synthesized cobalt sulfides in supercapacitors</b> <u>Jiraphong Sararat</u> , Pawinee Klangtakai
15.00-15.15	Afternoon Break Chair: Dr. Pinit Kidkhunthod Co-Chair: Prof. Siriporn Jungstittiwong
15.15-15.45	[KN] (S6_013) <b>Frontier Engineering of Solid-State Li-Ion and Metal-Air Batteries for High-Energy-Density Storage</b> <u>Ru-Shi Liu</u>
15.45-16.15	[KN] (S6_016) <b>Hydrogen vs. Lithium Ion Batteries for Energy Storage -from Mobile to Stationary Applications</b> <u>Huaiyu Shao</u>
16.15-16.35	[IV] (S6_038) <b>Metastable Silicon-based Anode Materials for Stable Lithium-Ion Batteries</b> <u>Ruohan Yu</u> , Liqiang Mai
16.35-16.50	[OP] (S6_09) <b>Effect of cobalt incorporation on the structural evolution and electrochemical performance of Ni(OH)<sub>2</sub> for high-performance supercapacitor electrodes</b> <u>Phatcharin Phumuen</u> , Pisist Kumnorkaew, Ekkaphan Sawatsitang, Pawinee Klangtakai, Samuk Pimanpang, Vittaya Amornkitbamrung

16.50-17.05	[OP] (S6_010) <b>Enhanced performance of gel polymer electrolyte with hydroquinone for supercapacitors</b> <u>Nannaphat Kiatkaiwansiri</u> , Pawinee Klangtakai, Samuk Pimanpang
17.05-17.20	[OP] (S6_011) <b>Real-Time UV-Vis Monitoring of I-/I2/I3- Traveling in Electrolyte of an Fe<sub>2</sub>O<sub>3</sub>/Activated Carbon Aqueous Energy Storage System</b> <u>Wassana Wannabut</u> , Pawinee Klangtakai, Samuk Pimanpang
17.00-18.30	Poster Session

June 30, 2026

Room: Chiang Mai 5

Time	Title/Authors
	Chair: Assoc. Prof. Soorathep Kheawhom Co-Chair: Asst. Prof. Prasit Pattananuwat
10.45-11.15	[KN] (S6_03) <b>Engineered Polymer Electrolytes for Solid-State Lithium Metal Batteries</b> <u>Jae Hyun Kim</u>
11.15-11.45	[KN] (S6_017) <b>Enhancing the electrochemical efficiency of N-rGO using coal fly-ash derived SiO<sub>2</sub> nanoparticles and m-COF for advanced supercapattery applications</b> <u>Katlego Makgopa</u> , Mpho Sofnee Ratsom, Daniel Malesela Teffu
11.45-12.00	[OP] (S6_012) <b>Effect of Slow Heating Rate on the Synthesis of Hard Carbon Derived from Macadamia Shell for Use as an Anode Electrode in Sodium-Ion Batteries</b> <u>Ukrit Sahapatsombut</u> , Panpanat Tesatchabut, Yaowamarn Chuminjak, Naruemon Apinyakul, Pimpa Limthongkul
12.00-12.15	[OP] (S6_014) <b>Solvent-Controlled <math>\beta</math>-Phase in PVDF for Stable Sodium Deposition and Enhancing Cycle Life in Anode-Free Sodium Metal Batteries</b> <u>Narisara Inarn</u> , Mussatorn Promachan, Parita Jumpaburee, Phonchita Thahong, Jiraphat Prakopphon, Kanokwan Duchthuyawat, Ratchataphan Thammawat, Nonglak Meethong, Orapa Thamwattan

12.15-12.30	[OP] (S6_040) <b>Colorimetric Coordination-Acid-Base Coupling Additive Enables Local pH Stabilization for Durable Aqueous Zn Metal Batteries</b>  <u>Mingwu Luo</u> , Mengyao Li, Feiyu Kang
12.15-13.30	Lunch break  Chair: Assoc. Prof. Dr. Soorathep Kheawhom Co-Chair: Asst. Prof. Dr. Prasit Pattananuwat
13.30-14.00	[KN] (S6_022) <b>Electronic Structure Evolution and Reaction Heterogeneity Across Battery Interfaces</b>  <u>Seongmin Bak</u>
14.00-14.30	[KN] (S6_023) <b>High-Performance Hydrogen Storage Alloys for Microgrids and Remote Area Power Supply Systems</b>  <u>Sammy Lap Ip Chan</u>
14.30-14.50	[IV] (S6_029) <b>Reimagining Titanium Diboride: From Inert Ceramic to 2D Electrodes for Next-Generation Batteries</b>  <u>Kabeer Jasuja</u>
15.00-15.15	Afternoon Break  Chair: Assoc. Prof. Soorathep Kheawhom Co-Chair: Asst. Prof. Prasit Pattananuwat
15.15-15.45	[KN] (S6_028) <b>End of Life Electric Vehicle Battery NMC for Circular Economy: Repurposing and Recycling</b>  <u>Evvy Kartini</u> , Bagus Aggraini, Muhammad Fakhruddin
15.45-16.05	[IV] (S6_031) <b>From Semiconductors to Energy: ALD-Enabled Interface Engineering</b>  Amarnath T. Sivagurunathan, Sangeeta Adhikari, <u>Do-Heyoung Kim</u>
16.05-16.20	[OP] (S6_020) <b>Impact of Carbon Incorporation Strategies on the Electrochemical Performance of FeNbO<sub>4</sub> Anodes for Lithium-Ion Batteries</b>  <u>Napassorn Kietisirrojana</u> , Kamonpan Pengpat, Uraivan Intatha, Sukum Eitssayeam
16.20-16.35	[OP] (S6_021) <b>Stabilizing P2-Type Na<sub>0.67</sub>Ni<sub>0.22</sub>Fe<sub>0.22</sub>Mn<sub>0.56</sub>O<sub>2</sub> Layered Oxide Cathodes via Calcium Doping for Sodium-Ion Batteries</b>  <u>Awatsada Buraned</u> , Songyoot Kaewmal, Natthawan Prasongthum, Nonglak Meethong, Panya Thanwisai

16.35-16.50	[OP] (S6_024) <b>Graphitic carbon nitride: a gamma radiation-tolerant dielectric insulator</b>  <u>Tosapol Maluangnont</u>
17.00-18.30	Poster Session





# Symposium 6: Batteries, Materials and Devices for Energy Storage

July 1, 2026

Room: Chiang Mai 5

Time	Title/Authors	Chair: Asst. Prof. Prasit Pattananuwat
	Chair: Asst. Prof. Prasit Pattananuwat Co-Chair: Asst. Prof. Jitti Kasemchainan	
09.45-10.15	[KN] (S6_05) <b>Degradation Mechanisms and Surface Modification of Ferritic Stainless Steels as Interconnect Materials for Solid Oxide Fuel Cells</b> <u>Somrerk Chandra-ambhorm</u>	Weeraporn Treerittiwittay, Mongkol Tipplook, Sidra Jamil, Chayanon Atthapak, Pinit Kidkhunthod, Jintara Padchasri, Krongthong Kamonsuangkasem, Suttipong Wannapiboon, Pimpa Limthongkul, Hongyi Gao, Annop Ektarawong, Nuria Tapia-Ruiz, Katsuya Teshima, <u>Jitti Kasemchainan</u>
10.15-10.35	[IV] (S6_042) <b>The highly active catalyst for the fuel electrode of solid-oxide cells</b> Zheng dao Jin, <u>Hee Jung Park</u>	
10.30-10.45	Morning Break Chair: Asst. Prof. Prasit Pattananuwat Co-Chair: Asst. Prof. Jitti Kasemchainan	
10.45-11.15	[KN] (S6_041) <b>Light-Driven Polymerization to Afford Functional Hydrophilic Polymers with Antifouling Property, Programmable Degradation and Thermoresponsiveness</b> <u>Chia-Chih Chang</u>	
11.15-11.35	[IV] (S6_018) <b>Atomic Defects in 2D Materials: Single-Image-Based Deep Learning Identification &amp; Catalytic Platinum Anti-Substitutions</b> <u>Xiaoxu Zhao</u> , Kangshu Li, Jun Zhao	
11.35-11.50	[OP] (S6_025) <b>A Comprehensive Study of CoO and CoO@GO/SiO<sub>2</sub> for Enhancement of Anode Materials in Lithium Ion Battery</b> <u>Meti Desalegn Tadesse</u>	
11.50-12.05	[OP] (S6_027) <b>Engineered Macadamia Nut Shell-Derived Biochar as a Sustainable Zincophilic Current Collector for High-Performance Zinc-Air Batteries: Operando Synchrotron Insights</b> <u>Ramin Khezri</u> , Soorathep Kheawhom, Wanwisa Limphirat, Shiva Rezaeimotlagh	
12.15-13.30	Lunch break	
13.30-13.50	[IV] (S6_044) <b>Single-crystal-like Na<sub>x</sub>MnO<sub>2</sub> for high-performance sodium-ion batteries</b>	
13.50-14.05	[OP] (S6_036) <b>Biomass (Durian Peel)-Derived Carbon and Metal Chalcogenide Composites for Energy Storage Electrodes</b>	Murali Krishna Sreeramareddygar, <u>Jinatcha Arunrat</u> , Natchanon Songpracha, Boonsita Wigath
14.05-14.20	[OP] (S6_030) <b>Graphene-based fiber cathode fabrication from recycled graphite for zinc ion batteries</b>	Nakaran Subjalearndee, <u>Jirada Chanpriang</u> , Phrutsakorn Thongkrait, Panpanat Tesatchabut, Prieu Eiamlamaic, Panida Muangkasem, Zezhao Lid, Nattanai Kunanusont, Xiangwu Zhang, Theeranun Siritanon, Pimpa Limthongkul
14.20-14.35	[OP] (S6_032) <b>Electrospun Ni-Mg Selenide Electrocatalysts Toward Water Splitting and Zinc-air Batteries</b>	<u>Ramakrishna Reddy Ayyaluri</u> , Manoj Pathala, Jae Su Yu
14.30-15.30	Closing Ceremony	





# Symposium 7: Innovative Material Processing for Technological Applications

## Symposium 12: Industrial Perspectives in Materials and Innovation

June 29, 2026

Room: Nophakao 1

Time	Title/Authors
	Chair: Dr. Anchalee Manonukul
13.30-14.00	[KN] (S12_01) <b>Navigating the Great Realignment: Engineering Petrochemical Innovation for a New Industrial Order</b>  <u>Jirut Wattoo</u>
14.00-14.30	[KN] (S12_08) <b>Sensory AI – augmenting the senses of human and artificial intelligence: from academic lab to spin-off company</b>  <u>Teerakiat Kerdcharoen</u>
14.30-15.00	[KN] (S12_09) <b>From Atoms to Markets, from Thermodynamics to AI, and from 3D Printing to Organs. Navigating Materials Innovation Across Academic, Industrial, and Entrepreneurial Frontiers</b>  <u>Boonrat Lohwongwatan</u> , Chedtha Puncreobutr, Chetarpa Yipyintum, Thanawat Petchratanarungsri
15.00-15.15	Afternoon Break  Chair: Prof. Yuttanant Boonyongmaneerat  Co-Chair: Prof. Daniel Chua
15.15-15.45	[KN] (S7_03) <b>Predictive Design of Electrocatalysts for CO<sub>2</sub> Reduction</b>  <u>Hui Pan</u>
15.45-16.15	[KN] (S7_08) <b>Fabrication and Processing of scalable Electro-catalytical Materials for water splitting and fuel cells</b>  <u>Daniel HC Chua</u>
16.15-16.45	[KN] (S7_18) <b>Electroactive Materials for Sustainable Energy: From basic Research to Applications</b>  <u>Hyacinthe Randriamahazaka</u>
16.45-17.00	[OP] (S7_01) <b>Spinel Ferrites Enabling Synergistic Photocatalysis and Piezocatalysis for Organic Compound Degradation</b>  <u>Tso-Fu Mark Chang</u> , Xinyu Jin, Yu-Hao Chen, Shota Kitaok, Tomoyuki Kuriok, Chun-Yi Chen, Yung-Jung Hsu, Masato Sone, Satoshi Okamoto
17.00-18.30	Poster Session

June 30, 2026

Room: Nophakao 1

Time	Title/Authors
	Chair: Dr. Anchalee Manonukul  Co-Chair: Prof. Samuel Chigome
10.45-11.15	[KN] (S7_011) <b>Advancement of Electrospun Nanofiber based Research in Africa</b>  <u>Samuel Chigome</u>
11.15-11.30	[OP] (S7_014) <b>Exfoliation-Free Solvothermal Synthesis of ink-like MoS<sub>2</sub> gel for Printable Water Purification Filters</b>  <u>Muralikrishna Sreeramareddygari</u> , Chatuporn Phanthong, Mithran Somasundrum, Patsamon Rijiravanich, Werasak Surareungchai, Jyothi Mannekote Shivanna
11.30-11.45	[OP] (S7_06) <b>Metal-Modified Buckypaper for Enhanced Wettability and Thermal Transport in Liquid Metal Interfaces</b>  <u>Yao-Tien Tseng</u> , Jui-En Chang, Sammy Lap Ip Chan
12.15-13.30	Lunch break  Chair: Prof. Jyotsna Dutta Majumdar  Co-Chair: Asst. Prof. Dr. Niti Yongvanich
13.30-14.00	[KN] (S7_023) <b>Design of Novel Electro-Catalysts for the Cost-Effective Generation of Hydrogen</b>  <u>Kandalam Ramanujachary</u>
14.00-14.30	[KN] (S7_022) <b>Laser Surface Engineering Magnesium and its Alloys for Improved Corrosion Resistance</b>  <u>Jyotsna Dutta Majumdar</u>
14.30-14.45	[OP] (S7_010) <b>Microstructure and Electrochemical Properties of Al-Sn and Al-Sn-In Alloys Produced by Friction Stir Processing for Anode Applications</b>  <u>Pornpan Wanna</u> , Jesada Punyafu, Suphitcha Moonngam, Chaiyasit Banjongprasert
15.00-15.15	Afternoon Break

July 1, 2026

Room: Nophakao 1

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Chair: Assoc. Prof. Sirithan Jiemsirilers

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Co-Chair: Assoc. Prof. Oratai Jongprateep

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15.15-15.45 [KN] (S12\_010) **In-House Development and Knowledge Transfer for Accelerated Commercialization of Medical Devices**

Narin Kaabbuathong

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15.45-16.15 [KN] (S12\_02) **From Surface to Sound: Multidisciplinary Pathways for Industrial and Cultural Innovation**

Yuttanant Boonyongmaneerat

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16.15-16.45 [KN] (S7\_016) **End-of-Life Lithium-Ion Battery Management through Recycling Technology**

Sakhob Khumko

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16.45-17.00 [OP] (S7\_07) **Revisiting High-Temperature Activation in La-Ca-Mg-Ni-Based AB<sub>3</sub> Hydrogen Storage Alloys: Advantage of Room-Temperature Activation for Fuel Cell Applications**

Min-Wei Lee, Yu-Chen Kuo, Yun-Lin Liao, Meng-Cheng Chou, Ruiran Guo, Yifan Zhou, Sammy Lap Ip Chan

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17.00-18.30 Poster Session

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Time	Title/Authors
	Chair: Dr. Anchalee Manonukul
	Co-Chair: Assoc.Prof. Theeranun Siritanon
10.45-11.15	[KN] (S7_04) <b>Cold Sintering Processing of Ceramic-based Hybrids and Functional Oxides</b>
	<u>Tohru Sekino</u> , Yeongjun Seo, Shotaro Doi, Seungmi Lee, Yoshifumi Kondo, Tonoyo Goto
11.15-11.45	[KN] (S7_012) <b>Engineering Charge Carrier Pathways in Photocatalysts: From Defects to Interfaces</b>
	<u>Theeranun Siritanon</u> , Anurak Waehayee, Praphaiphon Phonsuksawang, Teera Butburee, Suwit Suthirakun
11.45-12.00	[OP] (S7_015) <b>Development of Co-W and Co-W-Cu Coatings on AISI 430 Stainless Steel via Electrodeposition for SOFC Interconnects</b>
	Grid Suparapinyopapkul, Thanasak Nilsonthi, <u>Thammaporn Thublaor</u>
12.00-12.15	[OP] (S7_05) <b>Electro-Assisted Fabrication of Silane-Bridged Graphene Electrodes for Efficient Electrochemical Heavy Metal Removal</b>
	<u>Chen-Cheih Liao</u>
12.15-13.30	Lunch break
14.30-15.30	Closing Ceremony

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# Symposium 8: Instrumentation and Advanced Materials Characterization

June 29, 2026

Room: Petcharat 1

Time	Title/Authors
	Chair: Prof. Supree Pinitsoontorn Co-Chair: Assoc.Prof. Viyada Harnchana
13.30-14.00	[KN] (S8_06) <b>Small-scale deformation and in situ characterization of advanced ceramic materials: from high entropy oxides to additively manufactured ceramics</b> <u>Ravi Kumar</u>
14.00-14.30	[KN] (S8_04) <b>Advanced Materials Characterization of Environmental Materials</b> <u>Chanchana Thanachayanont</u>
14.30-14.50	[IV] (S8_08) <b>Atomic Structure of Novel Precipitates in Low Zn/Mg Ratio Al-Zn-Mg Alloys</b> <u>Seungwon Lee</u> , Wanlalak Sanphiboon, Calin D. Marioara, Norio Nunomura, Taiki Tsuchiya, Abrar Ahmed, Susumu Ikeno, Tomoo Yoshida, Randi Holmestad, Kenji Matsuda
15.00-15.15	Afternoon Break Chair: Dr. Chanchana Thanachayanont Co-Chair: Dr. Annop Klamchuen
15.15-15.45	[KN] (S8_012) <b>Interface Study and Charge Carrier Dynamics in 2D-3D Heterostructured Mixed-Cation Lead Mixed Halide <math>\text{FA}_{0.75}\text{Cs}_{0.25}\text{Pb}(\text{IO}_{0.77}\text{Br}_{0.23})_3</math> Perovskite</b> Amos Milimo Nalianya, Henry Barasa, Miller Shatsala, <u>Victor Odari</u>
15.45-16.15	[KN] (S8_010) <b>Spin Probe for Spintronics</b> <u>Chanyong Hwang</u>
16.15-16.35	[IV] (S8_011) <b>Infrared-THz free-electron lasers and femtosecond lasers for materials research</b> <u>Sakhorn Rimjaem</u>
16.35-16.50	[OP] (S8_09) <b>Investigation of Factors Affecting Reliability of Real-Time Color Monitoring System in Sugar Production Lines</b> <u>Nichakarn Termsaithong</u> , Kamonchanok Duangkanya, Nantararat Srisuai, Patharakorn Rattanawan, Jia-Yi Chia, Paramin Sangwongngam, Rungroj Jintamethasawat, Noppadon Nuntawong

16.50-17.05 **Beyond the Surface: Unveiling Hidden Material Features through DualBeam FIB-SEM Characterization**

Chatnapa Intanont (Thermo Fisher/LMS)

17.00-18.30 Poster Session

June 30, 2026

Room: Petcharat 1

Time	Title/Authors
	Chair: Prof. Supree Pinitsoontorn Co-Chair: Assoc.Prof. Viyada Harnchana
10.45-11.15	[KN] (S8_07) <b>Advanced Characterization of ZrN Thin Films for Durable and High-Sensitivity Surface Enhanced Raman Substrate (SERS)</b> <u>Annop Klamchuen</u> , Winadda Wongwiriyan, Nguentra Sucheewa, Narathon Khemasiri, Jiti Nukeaw
11.15-11.45	[KN] (S8_013) <b>Commissioning and current status of High Energy Photon Source (HEPS)</b> <u>Yuhui Dong</u>
11.45-12.05	[IV] (S8_014) <b>Impact of Fe Film Thickness and Si(B) Substrate on Spin Current and Shunting Effects in Longitudinal Spin Seebeck Effect Studies</b> <u>Poramed Wongjoma</u> , Benjarong Samransuksameraa
12.05-12.20	[OP] (S8_05) <b>Development of a Two-Color Ultrafast Pump-Probe Experimental Station at Chiang Mai University</b> <u>Nuttawat Khammata</u> , Nattanon Chaidet, Sakhorn Rimjaem
12.15-13.30	Lunch break
17.00-18.30	Poster Session

# Symposium 9: AI-driven Electronics, IoT and Digital Technologies for Next-generation Innovations

June 30, 2026

Room: Petcharat 1

Time	Title/Authors
	Chair: Prof. Hirofumi Tanaka Co-Chair: Assoc. Prof. Ittipon Fongkaew
13.30-14.00	[KN] (S9_01) <b>From Nanofibres to Intelligent Systems: Advanced Functional Materials Powering AI-Driven Electronics and Digital Health Technologies</b> <u>Norbert Radacsi</u>
14.00-14.30	[KN] (S9_04) <b>Ultra-Low-Power AI through Analog In-Memory Computing</b> <u>Yusuke Sakemi</u>
14.30-15.00	[KN] (S9_08) <b>Machine learning-augmented DFT for computational design of energy materials</b> Lappawat Ngamwongwan, Poobodin Mano, Kwanchanok Kaewkwan, Keerati Keeratikarn, Ittipon Fongkaew, <u>Suwit Suthirakun</u>
15.00-15.15	Afternoon Break Chair: Dr. Wiwat. Nuansing Co-Chair: Assoc. Prof. Ittipon Fongkaew
15.15-15.45	[KN] (S9_09) <b>Interpretable Machine Learning Mapping of the Defect-Induced Electronic Structure Continuum in Reduced TiO<sub>2</sub></b> <u>Adriana Martinez-Oviedo</u> , Cesare Ovando-Vazquez, Jose Tuxpan-Vargas
15.45-16.15	[KN] (S9_011) <b>Material Computation Devices for Physical Reservoir AI and Security Systems</b> <u>Hirofumi Tanaka</u>
16.15-16.35	[IV] (S9_07) <b>Neuromorphic Computation using Nano-Molecular Networks</b> <u>Takuya Matsumoto</u>
16.35-16.50	[OP] (S9_05) <b>Associative Memory Operation in a Spintronic Oscillator via a Virtual Oscillator Network</b> <u>Sumito Tsunegi</u> , Kay Yakushiji, Shinji Yuasa, Hitoshi Kubota
17.00-18.30	Poster Session





# Symposium 10: Recycling Materials and Environmentally-friendly Processing

June 29, 2026

Room: Nophakao 3

Time	Title/Authors
	Chair: Assoc. Prof. Pakorn Opaprakasit Co-Chair: Asst. Prof. Niti Yongvanich
13.30-14.00	[KN] (S10_06) <b>Phase Segregation Effects in Conjugated Polymer Blends on the Performance of Organic Solar Cells</b>  <u>Benjamin Agyei-Tuffour</u>
14.00-14.30	[KN] (S10_011) <b>Cellulose-Enabled Multifunctional Material Systems</b>  <u>Zoubeida Ounaies</u>
14.30-15.00	[KN] (S10_010) <b>Upcycling of Metal and Plastic Wastes into Functional MOFs for CO<sub>2</sub> Adsorption and Pollution Mitigation</b>  <u>Paiboon Sreearunothai</u>
15.00-15.15	Afternoon Break
	Chair: Assoc. Prof. Oratai Jongprateep Co-Chair: Asst. Prof. Niti Yongvanich
15.15-15.45	[KN] (S10_09) <b>Bridging Fundamental Discovery and Scalable Engineering: A Translational Pathway for TiO<sub>2</sub>-Based Photocatalytic Systems in Environmental Remediation</b>  <u>Wenbin Cao</u>
15.45-16.15	[KN] (S10_012) <b>Metallurgy for A Sustainable Future - Development of a New Method of Impurity Removal for Upgrading Recycling of Aluminum</b>  <u>Hideki Ono, Kengo Kato</u>
16.15-16.30	[OP] (S10_01) <b>Valorization of Platinum Smelter Slag into High Performance Geopolymer Pavers for Sustainable Mining Infrastructure</b>  <u>Eng Felix Mudhindi, Nyasha C Kadenge, Munashe Felix Mudhindi</u>
16.35-16.50	[OP] (S10_02) <b>Development of Green Roof Tile by Utilization of Mine Slag and Plastic Waste from A Local Mine.</b>  <u>Nyasha C Kadenge, Nyasha C Kadenge, Munashe Felix Mudhindi</u>
16.50-17.05	[OP] (S10_03) <b>Investigating the use of coconut fibres reinforcement, polyester resin, and macadamia shell filler materials in bio composites to promote sustainability</b>  <u>Mbatha Abednigo Jabu</u>
17.00-18.30	Poster Session

June 30, 2026

Room: Nophakao 3

Time	Title/Authors
	Chair: Assoc. Prof. Sirithan Jiemsirilers Co-Chair: Assoc. Prof. Pakorn Opaprakasit
10.45-11.15	[KN] (S10_013) <b>Comparative Assessment of Thermal and Mechanical Recycling Pathways for End-of-Life Crystalline Silicon Photovoltaic Panels: Material Recovery Quality, Economic Feasibility, and Valorization Potential</b>  <u>Ubonwan Khopongpaiboon, Sakprayut Sinthupinyo</u>
11.15-11.35	[IV] (S10_07) <b>Characterization of Glass Fabricated from Biomass Ash and waste marine shells</b>  <u>Chonlathit Pitipoomsuksan, Wilaiwan Leenakul</u>
11.45-12.05	[IV] (S10_04) <b>Emerging Photocatalysts as Sustainable and Recyclable Nanomaterials: Multifunctional Applications from Environment to Health</b>  <u>Jai Prakash</u>
12.15-13.30	Lunch break
17.00-18.30	Poster Session



June 29, 2026

Room: Boardroom 3

Time	Title/Authors
	Chair: Assoc. Prof. Worawat Meevasana Co-Chair: Asst. Prof. Sukrit Sucharitakul
13.30-14.00	[KN] (S11_07) <b>Deep Neural Network in Integrated Photonic Architecture</b> <u>Leong Chuan Kwek</u>
14.00-14.30	[KN] (S11_09) <b>Key Essential Governing Factors behind Materials Properties for Data Science and AIs</b> <u>Masato Yoshiya</u>
14.30-14.50	[IV] (S11_04) <b>Overview of Siam Quantum Square (SQ2) and Experimental Work toward Superconducting Qubit</b> <u>Salinporn Kittiwatanakul</u>
15.00-15.15	Afternoon Break Chair: Dr. Nithiwadee Thaicharoen Co-Chair: Dr. Phatthamon Kongkhambut
15.15-15.45	[KN] (S11_011) <b>Enabling Next-Generation Sensing via Novel 2D Material Platforms</b> Shankeerthan Kalyanasundaram , Anais Ducray, <u>Sudha Mokkapati</u>
15.45-16.15	[KN] (S11_010) <b>Molecular electron conductivity in open-shell systems and their applications</b> <u>Yasutaka Kitagawa</u>
16.15-16.35	[IV] (S11_02) <b>First-Principles Insights into Near-Field Radiative Heat Transfer in Quantum Materials</b> <u>Raul Esquivel-Sirvent</u>
16.35-16.55	[IV] (S11_06) <b>Progress toward a neutral-atom-based platform for quantum technology at Chiang Mai university</b> <u>Narupon Chattrapiban</u> , Nithiwadee Thaicharoen, Phatthamon Kongkhambut
16.55-17.25	[KN] (S11_08) <b>Cu<sub>2</sub>Se-based Hierarchical Composites through Nanoscale Engineering</b> <u>Pierre F.P. Poudeu</u>
17.00-18.30	Poster Session





# Symposium 13: Rare Earth, Critical Materials and its Applications

June 30, 2026

Room: Nophakao 3

Time	Title/Authors
	Chair: Prof. David Bradley Co-Chair: Dr. Nuttawadee Intachai
13.30-14.00	[KN] (S13_08) <b>Bridging Spectral Conversion and Device Integration: Rare-Earth Doped Photonic Materials for Silicon Solar Cells</b>  Keenatampalle Suresh, C.R. Kesavulu, Rella Reddappa, Wanichaya Mekprasart, Wisanu Pecharapa, Y. Ruangtaweep, J. Kaewkhao, C.K. Jayasankar
14.00-14.20	[IV] (S13_01) <b>Role of Thailand Institute of Nuclear Technology in Thailand's Rare Earth Element Ecosystem</b>  Somsak Dangtip, Dussadee Rattanaphra, Sasikarn Nuchdang, Wilasinee Kingkam
14.20-14.40	[IV] (S13_03) <b>Comparative Study of Spectroscopic and Luminescence Properties of Tb<sup>3+</sup>-Doped Tellurite Glasses with ZnF<sub>2</sub> and ZnO</b>  Patarawagee Yasaka, Winut Wongwan, Seubsakun Khondara, Kitipun Boonin, Jakrapong Kaewkhao
14.40-14.55	[OP] (S13_011) <b>Structural, Optical and Photoluminescence Properties of Samarium-Doped Sugarcane Leaf Ash Glasses for Display Devices Applications</b>  Pattraporn Saengk
15.00-15.15	Afternoon Break Chair: Prof. Jayasankar C. K. Co-Chair: Assoc. Prof. Patarawagee Yasaka
15.15-15.45	[KN] (S13_09) <b>Ultra-thin PTFE sheets: a radiation responsive material for polymer-based rare earths production dosimetry</b>  David Bradley
15.45-16.05	[IV] (S13_04) <b>Development of Dual-Functional Gd<sup>3+</sup>-doped Glass with UVB Emission and Radiation Shielding Properties</b>  Nuttawadee Intachai
16.05-16.25	[IV] (S13_05) <b>Fast Luminescence Decay Characteristics and X-ray Imaging of CeF<sub>3</sub> doped Alkaline Earth Phosphate Oxyfluoride Glasses for Medical X-ray Application</b>  Piyachat Meejitpaisan

16.25-16.45	[IV] (S13_012) <b>Platinum(II)-complexes for Efficient Organic Light-Emitting Diodes</b>  Jeong-Hwan Lee
16.45-17.00	[OP] (S13_010) <b>Enhanced Luminescence and Optical Properties of Dy<sup>3+</sup>-Doped Rice Husk Ash Glasses for Photonic Devices Application</b>  Nattaporn Mahingsa
17.00-18.30	Poster Session

July 1, 2026

Room: Nophakao 3

Time	Title/Authors
	Chair: Dr. Phakkhananan Pakawanit Co-Chair: Dr. Phieraya Pulphol
09.45-10.05	[IV] (S13_014) <b>Low-Temperature Co-Fired Microwave Dielectric Ceramics: Emerging Roles of Rare-Earth Elements</b>  Phieraya Pulphol, Naratip Vittayakorn
10.05-10.20	[OP] (S13_013) <b>Luminescent Behavior of Eu<sup>3+</sup> ion-Doped Boro-Tellurite Glass for Reddish orange Light Emission Applications</b>  Seubsakun Khondara
10.30-10.45	Morning Break Chair: Dr. Wutthikrai Busayaporn Co-Chair: Prof. Jakrapong Kaewkhao
10.45-11.00	[OP] (S13_06) <b>Artificial Intelligence for Deciphering Mobility and Trap Dynamics in OLED Transient Responses</b>  Al Amin, Rino Choi, Jeong-Hwan Lee
11.00-11.15	[OP] (S13_07) <b>Lead-Free Perovskite RbYbI<sub>3</sub> as an Efficient Electron Injection Layer for High-Performance OLEDs</b>  Amarja Sunil Katware
12.15-13.30	Lunch break
14.30-15.30	Closing Ceremony

# Symposium 14: Consortium for Advancing High Performance Industrial Postdoctoral and Postgraduate Researchers in Novel Materials to Drive High Impact Technology for Future Industry (PMU-B)

**June 29, 2026**

**Room: Boardroom 2**

Time	Title/Authors
13.30-13.40	Welcome Speech by Head of Materials Science Research Center and Opening Remarks by Deputy Director of PMUB — Dr. Rattapoom Tuchinda and Asst. Prof. Dr. Chaiyasit Banjongprasert
13.40-14.00	Brainpower for Future Industries and Sustainable Society — Dr. Rattapoom Tuchinda  Chair: Asst. Prof. Chaiyasit Banjongprasert Co-Chair: Asst. Prof. Yothin Chimupala
14.00-14.20	<b>Industrial Talk from Murata Electronics (Thailand) Co., Ltd.</b>  <u>Atsuyoshi Maeda/Prusapa Wikanet</u>
14.20-14.40	<b>Industrial Talk from CMH life science Co., Ltd.</b>  <u>Rutthavith Siriamornsith</u>
14.40-15.00	[IV] (S14_010) <b>Multi-Scale Ion Accessibility Engineering for Advanced Electrochemical Energy Storage and Conversion Systems</b>  <u>Hyung Mo Jeong</u>
15.00-15.15	Afternoon Break  Chair: Assoc. Prof. Dr. Wassanai Wattanutchariya  Co-Chair: Assoc. Prof. Dr. Kittisak Jantanasakulwong
15.15-15.30	[OP] (S14_01) <b>Integrated Approach to Plasma-Activated Hydrogel Design: From Factorial Optimization to Veterinary Application</b>  <u>Kochakon Moonsub</u> , Phisit Seesuriyachana, Wassanai Wattanutchariya
15.30-15.45	[OP] (S14_06) <b>Engineering PHEMA-Based Porous Scaffolds and Compact Hydrogel Sheets Using Functionalized Silk Sericin as a Multifunctional Crosslinker</b>  <u>Pattaraporn Suttaphakdee</u> , Nantaprapa Tuancharoensri, Sudarat Promkrainit, Medta Boupan, Preeyawass Phimnuan, Anuphan Sittichokechaiwut, Jirapas Jongjitwimol, Sararat Mahasaranon, Pensri Charoensit, Gareth M. Ross, Jarupa Viyoch, Sukunya Ross
15.45-16.00	[OP] (S14_07) <b>Tailoring Mechanical Performance and Printability of PLA-Based Filaments via ATEC Plasticization and TMC-200 Nucleation</b>  <u>Manasanan Namhongsa</u>
16.00-16.15	[OP] (S14_08) <b>Effect of PEG Molecular Weight on the Synthesis of Zinc Oxide Nanoparticles and Their Integration into PLA/PBAT Films for Enhanced Antibacterial Active Packaging</b>  <u>Gopinath Kasi</u> , Sarinthip Thanakkasaranee, Kittisak Jantanasakulwong, Pornchai Rachtanapun  Chair: Assoc. Prof. Thapanee Sarakonsri Co-Chair: Asst. Prof. Pawin Lamprasertkun
16.15-16.30	[OP] (S14_03) <b>Development of high-performance aluminum-air batteries for future energy storage systems</b>  <u>Jesada Punyafu</u> , Suphitcha Moonngam, Chaiyasit Banjongprasert
16.30-16.45	[OP] (S14_05) <b>Electrostatic PVC Film-Enabled Vacuum Heat-Transfer Engineering for Flexible Carbon-based Perovskite Solar Modules</b>  <u>Woraprom Passatorntaschakorn</u> , Warunee Khampa, Wongsathon Musikpan, Athipong Ngamjarurojana, Anusit Kaewprajak, Pisist Kumnorkaew, Pipat Ruankham, Duangmanee Wongratanaphisan
16.45-17.00	[OP] (S14_04) <b>Catalytically amplified nickel metal-organic framework-based electrochemical immunosensor for competitive insulin detection</b>  <u>Siriporn Anuthum</u> , Jaroon Jakmune, Kontad Ounnunkad
17.00-17.15	[OP] (S14_02) <b>Structural Insights into Sustainable Biomass-Derived Si-SiO<sub>2</sub> Nanocomposites Anchored with Sn-SnO<sub>2</sub> Nanoparticles within a Carbon Protective Buffer for High-Energy Lithium-Ion Battery Anodes</b>  <u>Orapim Namsar</u> , Chawin Yodbunork, Waewwow Yodying, Kittiputh Kunniyom, Thanapat Authawong, Jiayi Wu, Mitsutaka Haruta, Thapanee Sarakonsri
17.15-17.30	[OP] (S14_09) <b>Anion-Dependent Redox Pathways Governing Water Splitting in Superconcentrated Lithium Electrolytes</b>  <u>Sagar Ingavale</u> , Pawin Lamprasertkun
17.00-18.30	Poster Session



# Symposium 15: Frontier Research of Quantum Beam and Material Applications in Japan and Thailand

June 30, 2026 Room: Boardroom 2

Time	Title/Authors
	Chair: Prof. Dr. Hiroyuki Nishikawa Co-Chair: Assoc. Prof. Duangmanee Wongratanaphisan
13.30-13.35	Opening Remarks — Prof. Hiroyuki Nishikawa
13.35-13.55	[KN] (S15_011) <b>Quantum Beam Science for Sustainable Materials and Energy: From Collaboration to Action</b> <u>Duangmanee Wongratanaphisan</u>
13.55-14.15	[KN] (S15_05) <b>Advances in Terahertz Technologies for Environmental Solutions to Marine Plastic Pollution</b> <u>Tadao Tanabe</u>
14.15-14.30	[IV] (S15_02) <b>Microstructure-assisted Nanoimaging by Proton Beam Writing Fabrication</b> <u>Nitipon Puttaraksa</u> , Hironori Seki, Yasuyuki Ishii, Tatsunosuke Matsui, Hiroyuki Nishikawa,
14.30-14.45	[IV] (S15_06) <b>Microplastics in the ocean environment —International initiative</b> <u>Haruka Nakano</u>
14.45-15.00	[IV] (S15_01) <b>Quantifying the age of environmental microplastics and its applications</b> <u>Zijiang Yang</u> , Hisayuki Arakawa
15.00-15.15	(Coffee Break)
	Chair: Asst. Prof. Dr. Sakhorn Rimjaem Co-Chair: Dr. Nitipon Puttaraksa
15.15-15.30	[IV] (S15_016) <b>Recent Progress in the Development of Terahertz Imaging Systems using Standing Wave Analysis for Non-Destructive Testing</b> <u>Pacharamon Somboonsaksri</u> , Seiya Miyazaki, Nantarat Srisuai, Patharakorn Rattanawan, Jia-Yi Chia, Nichakarn Termsaithong, Noppadon Nuntawong, Rungroj Jintamethasawat, Tadao Tanabe
15.30-15.45	[IV] (S15_04) <b>Observation of Pyroelectric effect using Nanoterasu</b> <u>Seiya Miyazaki</u> , Kazuma Iwasaki, Kim hyun Jue, Sho Hujii, Tsuyoshi Kimura, Masaya Yamamoto, Tadao Tanabe
15.45-16.00	[IV] (S15_014) <b>Femtosecond pulsed laser deposition of W-doped VO<sub>2</sub> thin film with low temperature metal to insulator transition</b> <u>Artitsupa Boontan</u> , Eric Kumi-Barimah, David P. Steenson, Gin Jose

16.00-16.15	[IV] (S15_03) <b>Positronium diffraction experiment using graphene</b> <u>Yugo Nagata</u> , Riki Mikami, Yasuyuki Nagashima
16.15-16.30	[OP] (S15_015) <b>Applications of Accelerator-Based Science Technique, muSR, to Energy-Storage Materials “What have been achieved and what is the future”</b> <u>Isao Watanabe</u>
	Chair: Prof. Dr. Hiroyuki Nishikawa Co-Chair: Dr. Nitipon Puttaraksa
16.30-16.45	[IV] (S15_012) <b>Fabrication and UV Photodetection Characterization of Annealed Cu<sub>3</sub>N/CuO Micro-sensors Using Maskless Lithography</b> <u>Ekkaphop Ketsombun</u> , Apinan Jantee, Hudsadin Chantarpromporn, Weerawut Hongtongdee, Benjarong Samransuksamer
16.45-17.00	[IV] (S15_07) <b>Muon-Based Quantum Beam Studies of Organic Superconductors and Quantum Criticality</b> <u>Dita Puspita Sari</u>
17.00-17.15	[IV] (S15_010) <b>Plasmonic Nanostructures for Enhanced Organic Photoelectric Conversion</b> <u>Akira Babaa</u> , Yuting Miao, Naritsara Kornkanlaya, Kanet Wongravee, Sachiko Jonai, Kazunari Shinbo, Sanong Ekgasit
17.15-17.30	[IV] (S15_09) <b>Infrared FEL-Induced Alteration of Zeta Potential in Electrochemically Grown Quantum Dots: Ion Modification and Applications in PSCs</b> <u>Sukrit Sucharitakul</u> , Siripatsorn Thanasanvorakun, Vasan Yarangsi, Suparoek Yarin, Kritsada Hongstith, Monchai Jitvisate, Hideaki Ohgaki, Surachet Phadungdhitidhada, Heishun Zen, Sakhorn Rim-jaem, Supab Choopun
17.30-17.45	[IV] (S15_013) <b>Deep Eutectic Solvent-Assisted Passivation of TiO<sub>2</sub> Electron Transporting Layers for Enhanced Carbon Electrode-based Perovskite Solar Cell Performance</b> <u>Warunee Khampa</u> , Woraprom Passatorntaschakorn, Wongsathon Musikpan, Chukwuebuka Emmanuel Usulor, Isaac Chinaza Ogbuagu, Athipong Ngamjarrojana, Pongsakorn Kanjanaboos, Anusit Kaewprajaki, Pisist Kumnorkaew, Pipat Ruankham, Duangmanee Wongratanaphisan
17.45-18.15	Co-Creation Dialogue: Shaping Future Directions Together — Prof. Hiroyuki Nishikawa
18.15-18.20	Closing Remarks

July 1, 2026

Room: Boardroom 2

Time	Title/Authors
10.00-11.30	<b>PMUB-JST Discussion</b>  Prof. Dr. Hiroyuki Nishikawa, Assoc. Prof. Dr. Duangmanee Wongratanaphisan, Prof. Dr. Tadao Tanabe, Dr. Nitipon Puttaraksa, Asst. Prof. Dr. Haruka Nakano, Dr. Ziji Yang, Ms. Pacharamon Somboonsaksri, Mr. Seiya Miyazaki, Dr. Artitsupa Boontan, Assoc. Prof. Dr. Yugo Nagata, Prof. Dr. Isao Watanabe, Dr. Ekkaphop Ketsombun, Assoc. Prof. Dr. Dita Puspita Sari, Prof. Dr. Akira Baba, Asst. Prof. Dr. Sukrit Sucharitakul, Ms. Warunee Khampa, Asst. Prof. Dr. Siramas Komonjinda, Asst. Prof. Dr. Rattachai Pinchaipat, Asst. Prof. Dr. Sakhorn Rimjaem, Asst. Prof. Dr. Pimonrat Tiansawat, Kaneya Tomotaka, Mr. Koichi Eguchi, Dr. Rungroj Jintamethasawat, Prof. Dr. Chesta Ruttanapun, Ms. Chia Jia Yi, Dr. Monchai Jitvisate, Dr. Nantararat Srisuai
12.15-13.30	Lunch break
14.30-15.30	Closing Ceremony

## The 1<sup>st</sup> Advanced Ceramics Innovation Consortium: Bridging Expertise from Lab to Industry

June 30, 2026

Room: Petcharat 2

Time	Title/Authors
13.30-13.40	<b>Opening Remarks</b> — Prof. Emeritus Dr. Tawee Tunkasiri
13.40-14.00	<b>Guest Keynote Speaker (Industry)</b>  <u>TBA</u>
14.00-15.00	<b>Panel Discussion</b>  Panel Moderator: Assoc. Prof. Dr. Kamonpan Pengpat and Teams
15.00-15.15	(Coffee Break)
15.15-15.45	<b>Panel Discussion (continued)</b>  Panel Moderator: Assoc. Prof. Dr. Kamonpan Pengpat and Teams
17.00-18.30	Poster Session

## 1. Semiconductors, Photonic Materials and Devices

Abstract code	Title / Author
S1_P1	<b>Impact of Oxygen Pressure during Rapid Thermal Annealing on ALD ZnO TFTs</b> <u>Jihun Ha</u> , Seung-Hun Lee, Ahyun Park, Jae Woong Lee, Jeong Hwan Kim
S1_P2	<b>Effect of Double Oxidation on ALD-Grown ZnO Thin Films and TFT performance</b> <u>Ahyun Park</u> , Seung-Hun Lee, Jihun Ha, Jae Woong Lee, Jeong Hwan Kim
S1_P3	<b>Enhanced Dielectric Properties of W and In co-doped TiO<sub>2</sub> ceramics</b> <u>Theeranuch Nachaithong</u> , Suphanut Sotonsak, Prasit Thongbai, Ken Kurosaki
S1_P4	<b>Enhanced Thermoelectric Performance of Screen-Printed Ag<sub>2</sub>Se Nanowire Films through Tellurium Compositing and Post-Treatment</b> <u>Peeranut Kitthonbancha</u> , Wei-Di Liu, Zhi-Gang Chen, Supree Pinitsoontorn
S1_P5	<b>Solid-State Synthesis and Thermoelectric Properties of Ag<sub>2</sub>Se</b> <u>Thunchanok Kongpiriyakorn</u> , Wisanart Teangchangrum, Weerawat Toaran, Santi Maensiri
S1_P6	<b>Hydrothermal Synthesis of PVP-Assisted Ag<sub>2</sub>Se and Its Thermoelectric Properties</b> <u>Wisanart Teangchangrum</u> , Thunchanok kongpiriyakorn, Weerawat Toaran, Santi Maensiri
S1_P7	<b>Advanced Thermal and Charge Management Systems for Thermally Chargeable Supercapacitor Modules in Energy Harvesting Applications</b> <u>Shohei Horike</u> , Ryoko Nakae, Yasuko Koshiba, Azumi Akiyama, Masahiro Funahashi, Qingshuo Wei
S1_P8	<b>Size-Controlled Synthesis of Metal Organic Chalcogenide Nanocrystals Through Antisolvent Reprecipitation Method</b> <u>Achawee Dangkongko</u> , Pimpan Leangtanom, Watcharaphol Paritmongkol
S1_P9	<b>Effects of Fe and Sn Co-doping on the Densification and Thermoelectric Properties of ZnO Ceramics</b> <u>Poonnisar Maneechai</u> , Benjarath Waytathum, Anucha Watcharapasorn
S1_P10	<b>Study on the Thermoelectricity of CCFN based on High-Entropy Alloys Thin Film as prepared by RF Magnetron Sputtering</b> <u>Wutthikrai Udomlap</u> , Mekhala Insawang, Saksorn Limwichean, Mati Horprathum, Tosawat Seetawan, Athorn Vora-ud
S1_P11	<b>Tunable visible and NIR emission characteristics of Ho<sup>3+</sup> and Ho<sup>3+</sup> /Yb<sup>3+</sup> co-doped zinc tellurite glasses for solid-state lightning and 2 μm laser applications</b> <u>Suresh Keenatampalle</u> , C.R. Kesavulu, A. Madhu, C.K. Jayasankar, Kanokthip Boonyarattanakalin, Thanaphon Kansaard, Wanichaya Mekprasart, Wisanu Pecharapa
S1_P12	<b>Engineering ZnO/Carbon Quantum Dot Heterojunctions for Enhanced Charge Transfer and Visible-Light Photoresponse</b> <u>Maneerat Songpanit</u> , Thanaphon Kansaard, Kanokthip Boonyarattanakalin, Hideyuki Okumura, Keiichi N. Ishihara, Wisanu Pecharapa, Wanichaya Mekprasart
S1_P13	<b>Current Induced Magnetic Switching of WTe<sub>2</sub>/Fe<sub>3</sub>GaTe<sub>2</sub> Two-Dimensional Heterostructure</b> Pradeep Raj Sharma, Bogeun Jang, <u>Jongill Hong</u>

## 2. Polymers, Biomaterials and Medical Devices

Abstract code	Title / Author
S2_P1	<b>Development of Nanocellulose-Based Spray Coatings for Enhanced Mechanical Strength and Water Resistance of Medical Protective Fabrics</b> <u>Kittiya Plermjai</u> , Parida Jampeeruangs, Phee Limpitheep
S2_P2	<b>Glucose-Sensitive and 3D-Printable Dynamic Chitosan Hydrogels from Boronic Acid-Functionalized Chitosan and Gallol-Functionalized Chitosan</b> <u>Ting-Yu Chang</u>
S2_P3	<b>Development of Natural Rubber and High-Density Polyethylene Blends: A Sustainable Alternative to Commercial Thermoplastic Elastomer</b> Athapon Simpraditpan, Anothai Pholsuwan, Varistha Chobpattana, Kawita Chattrakul, <u>Chuntip Skumnuantip</u>
S2_P4	<b>Polymer-Free Fabrication of Fibrinogen-Based Decellularized ECM Sheets with Enhanced Functionality via Ascorbic Acid</b> <u>Youngdoo Chung</u> , Hee Seok Yang
S2_P5	<b>Fibrinogen-Based 3D Spheroid Sheets Enhance Functional Regeneration of Full-Thickness Rotator Cuff Tears in a Rat Model</b> <u>Jin Hee Park</u> , Myung Seo Kim, Hee Seok Yang
S2_P6	<b>Engineering Radially Oriented Fibrous Scaffolds with Sustained Growth Factor Release for Improved Bone Regeneration</b> <u>Jungeun Ha</u>
S2_P7	<b>Macromolecular Crowding-derived ECM Nanovesicles as Bioinstructive Materials for Angiogenic Biomaterials</b> <u>Eunchae Kim</u> , Hee Seok Yang
S2_P8	<b>Bioconjugation Approaches for Nisin-Conjugated Liposomes as a Drug Delivery System for Breast Cancer Therapy</b> <u>Ubaid Ahmad</u> , Yanisa Panporm, Piyathida Wuthinonchai, Malinee Pradain, Chanida Phetdee, Panchika Prangkiro
S2_P9	<b>Mechanical properties of natural rubber latex sheets with edible mushrooms</b> <u>Sitthi Duangphet</u> , Uraiwan Intatha, Somwan Chumphongphan
S2_P11	<b>Enhancing Molecular and Thermal Properties of PCL via TNPP-Assisted Chain Extension in Ring-Opening Polymerization</b> <u>Tanyaluck Mekpothi</u> , Manasanan Namhongsa, Tawan Chaiwon, Donraporn Daranarong, Winita Punyodom
S2_P12	<b>PLG-LL-37 Microparticle for Controlled Peptide Delivery in Bone Regeneration</b> <u>Donraporn Daranarong</u>
S2_P13	<b>PMMA-Based Polymeric Blend Nanocarriers for Controlled Drug Delivery</b> <u>Montira Sriyai</u> , Nuttawut Khammata, Robert Molloy, Puttinan Meepowpan, Winita Punyodom
S2_P14	<b>Dimensionally Stable PNIPAM/PLGA-PEG-PLGA Thermoresponsive Blended Hydrogels for Biomedical applications</b> <u>Nuttawut Khammata</u>
S2_P15	<b>Fabrication of Bile Duct Tubular Prototype from Poly(L-lactide-co-ε-caprolactone) Monofilament utilizing 3D-Printing Technology</b> <u>Tawan Chaiwon</u> , Manasanan Namhongsa, Tanyaluck Mekpothi, Winita Punyodom

S2_P16	<b>Synthesis and Characterization of Amorphous Hydrogel Composed of P(Na-AMPS) and CMC for Use as Wound Dressing</b> <u>Waewpoy Sukmongkolwongs, Peerakan Aewprasert, Pharaporn Yodkrum, Amlika Rounrod, Runglawan Somsunan</u>
S2_P17	<b>Dual-Responsive Sprayable Hydrogel for Controlled Neem Delivery in Wound Dressing Applications</b> <u>Amlika Rungrod, Arthit Makarasen, Suwicha Patnin, Supanna Techasakul, Runglawan Somsunan</u>
S2_P18	<b>Multifunctional Electrospun Nanofibrous Membrane for Quercetin Release in Advanced Wound Dressing Applications</b> <u>Thanaphorn Rakkan</u>
S2_P19	<b>Thermochemical Evolution and Surface Chemical States of Biogenic Biphasic Calcium Phosphate Ceramics: Correlation with Mechanical Properties and In Vitro Bioactivity</b> <u>Theerachai Bongkarn, Nutkamon Sonchaopri, Sununta Yimsabai, Surirat Yotthuan, Nuttawan Sawangboon, Usanee Pantulap, Chittakorn Kornphom</u>
S2_P21	<b>Water-Resistant Paper with Improved Dry and Wet Mechanical Strength via Chemical Vapor Deposition</b> <u>Patcharawarin Sathapornwajana, Kuntinee Suvarnakich, Kamonwan Pacaphol</u>
S2_P22	<b>Synergistic effects of copper and iron co-doping on the multifunctional properties of hydroxyapatite for bone tissue engineering</b> <u>Tanawut Rittidach, Kueakoon Poonthong, Atipong Bootchanont</u>
S2_P23	<b>Differential miRNA Signatures of MSC-Derived Exosomes and Their Potential Regulatory Roles in Dermal Papilla Cells</b> <u>Hyun Jae Kim, Seokhwan Yun</u>

### 3. Biosensors, Sensors, Flexible, and Wearable Electronics

Abstract code	Title / Author
S3_P1	<b>Anomalous Sensing Behavior in 2D Gas Sensing Materials: Black Phosphorus and <math>Ti_3C_2Tx</math></b> <u>Lei Miao, Qiuyu Jin, Shu Yin</u>
S3_P3	<b>Enzyme-Free Glucose Sensor Based on Cobalt Hydroxycarbonate Nanostructures</b> <u>Zhanar Kalkozova</u>
S3_P4	<b>Green Synthesis of Gold Nanoparticles for Gas Sensing Application</b> <u>Natnicha Chanvithidkul, Witsanu Kunket, Kanokrak Boonmee, Alisa Saengsonachai, Jenjira Chaimanan, Chatchawal Wongchoosuk</u>
S3_P5	<b>Flexible sensor based on MXene Quantum Dots/Graphene for gas sensor</b> <u>Nathan Jamulitrath, Yossapat Phattarawuttinun, Nobpon Seniwong-Na-Ayuttaya, Supakit Chinpakdee, Usanee Pantulap, Nuttawan Sawangboon, Chatchawal Wongchoosuk</u>
S3_P6	<b>Biodegradable Waterborne Polyurethane-Reinforced Gelatin Eutectogels with Enhanced Mechanical and Ionic Performance</b> <u>Yen-Fei Lu, Chan-Yi Chu, Ting-Yu Chang, Shan-hui Hsu</u>
S3_P7	<b>Preparation and Structural Characterization of Ru-Loaded rGO/SnO<sub>2</sub> Nanocomposites for SO<sub>2</sub> Gas Sensing</b> <u>Siwakorn Bunnak, Pimpan Leangtanom, Sirorat Moollor, Chatchawan Sammana, Salintip Jongpongsa, Narong Chanlek, Viruntachar Kruefu</u>
S3_P8	<b>Facile Synthesis of CeO<sub>2</sub> Nanofiber/F-MXene Nanocomposites with Enhanced Structural Integration for Gas Sensor Applications</b> <u>Sirorat Moollor, Pimpan Leangtanom, Salintip Jongpongsa, Siwakorn Bunnak, Chatchawan Sammana, Viruntachar Kruefu</u>

S3_P9	<p><b>Microwave-Assisted One-Pot Synthesis of CeO<sub>2</sub>-Decorated NiO Nanoflower p–n Heterojunctions for Enhanced Ethanol Gas Sensing</b></p> <p><u>Viruntachar Kruefu</u>, Pimpan Leangtanom, Montawat Wiboon, Siwakorn Bunnak, Chatchawan Sammana, Salintip Jongpongsa, Sirorat Moollor, Patcharee Kongpark, Sakchai Satienperakul, Anurat Wisitsoraat, Narong Chanlek, Yingyot Poo-arporn, Kata Jaruwongrungee</p>
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#### 4. Ferroelectric, Piezoelectric, and Triboelectric Materials and Devices

Abstract code	Title / Author
S4_P2	<p><b>Capturing the Shift in Defect Compensation Near the Universal Acceptor Concentration in BaTiO<sub>3</sub> through Trace-Level La Control via Liquid-Phase Ultrasonic Doping</b></p> <p><u>Won Yeong Chung</u>, Young Soo Lim, Seok-Hyun Yoon</p>
S4_P3	<p><b>Control of Ca Site Occupancy in BaTiO<sub>3</sub> Ceramics via Sonochemical Processing with a Liquid Precursor</b></p> <p><u>Jin Uk Kim</u></p>
S4_P4	<p><b>Defect-compensation in trace-level La-doped SrTiO<sub>3</sub> ceramics</b></p> <p><u>Soon Jong Eom</u>, Won Yeong Chung, Young Soo Lim, Seok-Hyun Yoon</p>
S4_P5	<p><b>Relaxor behavior and high-temperature dielectric properties of (1-x)BaTiO<sub>3</sub>-x(Bi<sub>0.5</sub>Li<sub>0.5</sub>)SnO<sub>3</sub> ceramics</b></p> <p>Seung Wan Yu, Yean Joo Kim, Gil-Geun Lee, Young Soo Lim</p>
S4_P7	<p><b>A Triboelectric Nanogenerator with Micropits on PMMA Dielectric Surface for Improved Output Voltages</b></p> <p><u>Tomotaka Kaneva</u>, Takuma Kudo, Nitipon Puttaraksa, Hironori Seki, Hiroyuki Nishikawa</p>
S4_P8	<p><b>Simultaneous enhancement of high energy density and efficiency in high-entropy BNBSCT ceramics via Bi(Mg<sub>2/3</sub>Ta<sub>1/3</sub>)O<sub>3</sub> modification</b></p> <p>Pathit Premwichit, Sununta Yimsabai, Chen Deqin, Jia Yi Chia, Noppadon Nuntawong, Nengneng Luo &amp; <u>Sasipohn Prasertpalichat</u></p>
S4_P9	<p><b>Enhanced Strain and Magnetoelectric properties in MnO<sub>2</sub>-Doped KNLNTS-BCTZ Ceramics Synthesized via Solid-State Combustion Method</b></p> <p>Wiwat Pattanakasem, Sununta Yimsabai, Manlika Sriiondee, Pawarin Tharamas, Pawinee Pakkharawat, Naratip Vittayakorn, Supree Pinitsoontorn, Aurawan Rittidech, Truong-Tho Pham, <u>Theerachai Bongkarn</u></p>
S4_P10	<p><b>An Advanced Biomimetic Biomimetic Stevia–PVA Hydrogel Triboelectric Nanogenerator with Machine Learning-Enhanced Motion Recognition</b></p> <p><u>Kyungwho Choia</u>, Changbum Ryan Ahn, Hojin Lee</p>
S4_P11	<p><b>Flexible hybrid piezoelectric-triboelectric nanogenerator using lead-free BNBT-LS ceramics via the solid-state combustion technique</b></p> <p><u>Anupong Luangpangai</u>, Nattapong Apirattanon, Manlika Sriiondee, Rattiphorn Sumang, Aurawan Rittidech, Naratip Vittayakorn, Theerachai Bongkarn</p>
S4_P12	<p><b>Enhancement of electrical properties in BNT-ST ceramics modified by MnO doping for energy storage applications</b></p> <p><u>Piewpan Parjansri</u>, Sukum Eittsayeam, Uraivan Inthata, Kamonpan Pengpat</p>
S4_P13	<p><b>Effects of Eu<sup>3+</sup> Doping Concentration and Cooling Rate on Structural and Electrical Properties of (K<sub>0.47</sub>Na<sub>0.47</sub>Li<sub>0.06</sub>)<sub>1-x</sub>Eu<sub>x</sub>NbO<sub>3</sub> Ceramics</b></p> <p>Sriwan Kaewsit, Khanisorn Sompong, Worapong Pairindra, Kamonpan Pengpat, <u>Ploypailin Yongsiri</u></p>
S4_P14	<p><b>Synergistic Piezo-Photocatalytic Performance of Multiferroic BiFeO<sub>3</sub> Nanoparticles for Enhanced Rhodamine B Degradation</b></p> <p>Kokkiligadda Jhansi, Prasuraman Swaminathan</p>

## 5. Solar Cells and Optoelectronic Materials and Devices for Energy Harvesting

Abstract code	Title / Author
S5_P1	<b>Synthesis of Unsymmetric Diketopyrrolopyrrole-based Copolymers with Controlled Regioregularity and Their Photovoltaic Characteristics</b> <u>Ryosuke Kamimura</u> , Fumitaka Ishiwari, Akinori Saeki
S5_P2	<b>Effect of Ni<sup>2+</sup> Quantum Dots as Additive and Interface Passivation on Performance of NiO-Based Perovskite Solar Cells</b> <u>Wakul Bumrungsan</u> , Vasan Yarangsi, Kritsada Hongsith, Suparoek Yarin, Prapasiri Phimsarn, Siripatsorn Thanasanvorakun Sukrit Sucharitakul, Surachet Phaduanghitidhata, Supab Choopun
S5_P3	<b>Enhanced Performance of Perovskite Solar Cells via SnO<sub>x</sub> Quantum Dot Additives in SnO<sub>2</sub> Electron Transport Layers</b> <u>Suparoek Yarin</u> , Vasan Yarangsi, Kritsada Hongsith, Wakul Bumrungsan, Prapasiri Phimsarn, Siripatsorn Thanasanvorakun, Sukrit Sucharitakul, Surachet Phadunghitidhata, Supab Choopun
S5_P5	<b>Selective halide passivation enhances hole mobility in metal organochalcogenides</b> <u>Pimpan Leangtanom</u> , Rattapon Khamlue, Siriporn Jungsuttiwong, Achawee Dangkongko, Nuttapon Kongsip, Somlak Ittisanronnachai, Watcharaphol Paritmongkol
S5_P6	<b>Thiadiazole[3,4-c]pyridine Derivative as NIR Luminophore for Electroluminescent Device and Luminescence Solar Concentrator</b> <u>Rattanasiri Wanapakdee</u> , Praweena Wongkaew, Taweesak Sudyoadsuk, Vinich Promarak

## 6. Batteries, Materials and Devices for Energy Storage

Abstract code	Title / Author
S6_P1	<b>Regulating Zn Deposition Using Chelation-Buffer Electrolyte Additives for High-Rate Zn-Br<sub>2</sub> Hybrid Flow Batteries</b> <u>Phonnapha Tangthuum</u> , Pongpon Pipattanachaiyanana, Wathanyu Kao-ian, Suttipong Wannapaiboon, Phakkhananan Pakawanit, Ying Wang, Yuki Nagao, Manaswee Suttipong, Soorathep Kheawhom
S6_P2	<b>Mechanism-guided design of UiO-66-SO<sub>3</sub>H ASEI for enhanced cycling stability of zinc-metal anodes in aqueous batteries</b> <u>Vipada Aupama</u> , Manaswee Suttipong, Soorathep Kheawhom
S6_P3	<b>In situ surface transformation of Ni<sub>3</sub>S<sub>2</sub>/NF electrodes into Ni(OH)<sub>2</sub>/Ni<sub>3</sub>S<sub>2</sub> heterostructures for enhanced electrochemical energy storage</b> <u>Markhabayeva A.A.</u> , Abdullin Kh. A., Zh. K. Kalkozova, L.V. Gritsenko, Zh. S. Kanatov, D. Zhapargali
S6_P4	<b>Effect of Cu substitution on the structure and enhanced electrochemical performance of Bi<sub>12</sub>Ni<sub>1-x</sub>Cu<sub>x</sub>O<sub>19</sub> nanostructures for high-performance supercapacitor applications</b> <u>Jessada Khajonrit</u> , Wittawat Saenrang, Kittiya Salangsing, Kittima Salangsing, Suchunya Wongprasert, Nantawat Tanapongpisit, Santi Maensiri
S6_P5	<b>Artificial Solid Electrolyte Interface Derived from Fluorinated Cyclic Phosphate for Enhancing Lithium Metal Anode Performance</b> <u>Yune Shingaki</u> , Yota Okuno, Yukiko Matsui, Minako Deguchi, Masashi Ishikawa, Yasuhiko Iwasaki
S6_P6	<b>The Role of Current Collector Guiding Sodium Deposition and Cycling Stability of Anode-Free Sodium Metal Batteries</b> <u>Kanokwan Duchthuyawat</u> , Parita Jumpaburee, Mussatorn Promachan, Ratchataphan Thammawat, Narisara Inarn, Phonchita Thahong, Jiraphat Prakopphon, Orapa Thamwattana

S6_P9	<p><b>Defect-Engineered Mo-Doped NiCo<sub>2</sub>O<sub>4</sub> Nanowires with Abundant Oxygen Vacancies for High-Rate Vanadium Redox Flow Batteries</b></p> <p><u>Zih-Jhong Huang</u>, <u>Chen-Hao Wang</u></p>
S6_P12	<p><b>Optimizing Carbon-Free LiFePO<sub>4</sub> Cathodes via Temperature-Controlled Hydrothermal Synthesis</b></p> <p><u>Taegu Han</u>, <u>Yangdo Kim</u>, <u>Chang Sik Son</u>, <u>Donghyun Hwang</u></p>
S6_P14	<p><b>Improving the Low-Temperature and Fast-Charging Properties of MoOx@TiO<sub>2</sub>-Based Li-Ion Battery Anodes</b></p> <p><u>Hsien-Chun Tseng</u>, <u>Hong-Hwa Lu 1</u>, <u>Sheng-Chang Wang</u>, <u>Ching-Huan Lee</u>, <u>Yu-Min Shen</u></p>
S6_P32	<p><b>Hydrothermal Synthesis and Electrochemical Performance of Se Incorporated Zinc Cobalt Oxide for Energy Storage Applications</b></p> <p><u>Jae Su Yu</u>, <u>Obula Reddy Ankinapalli</u>, <u>Ramakrishna Reddy Ayyaluri</u></p>
S6_P33	<p><b>Butterfly Pea Flower (Clitoria ternatea L.)-Assisted Synthesis of MnO<sub>2</sub> Nanoparticles via Comparative Hydrothermal and Green Route for Enhanced Oxygen Reduction Reaction in Zinc-Air Batteries</b></p> <p><u>Wanrudee Kaewmesri</u>, <u>Sankum Nusen</u>, <u>Chaiyasit Banjongprasert</u>, <u>Manat Jaimasith</u></p>
S6_P34	<p><b>Surface Functionalization of Carbon Nanotubes with 2-aminothiazoline-derived molecules for High-Performance Pt Electrocatalysts toward Methanol Oxidation</b></p> <p><u>Siripon Wattanasing</u>, <u>Surin Saipanya</u>, <u>Wong Phakhodee</u>, <u>Suwaphid Themsirimongkon</u>, <u>Jaroon Jakmunee</u>, <u>Paralee Waenkaew</u></p>
S6_P37	<p><b>Platinum Nanoparticles on Cu–Ni/Polypyrrole Functionalized CNTs for Enhanced Methanol Oxidation Reaction</b></p> <p><u>Parisa Klanarong</u></p>
S6_P38	<p><b>Pt Nanoparticles Supported on aza-BODIPY-Modified Graphene Oxide for High-Performance Methanol Oxidation</b></p> <p><u>Natnicha Ingongngam</u>, <u>Surin Saipanya</u>, <u>Kullapa Chanawanno</u>, <u>Paralee Waenkaew</u>, <u>Jaroon Jakmunee</u>, <u>Suwaphid Themsirimongkon</u></p>
S6_P39	<p><b>Bifunctional ORR/OER Electrocatalysts Based on Ni, Co MOF-Derived N-Doped Porous Carbon Nanoparticles</b></p> <p><u>Kamonpan Manowilaikun</u></p>
S6_P40	<p><b>Harnessing Positional Isomerism and In Situ Synthesis to Optimize Lithium Azobenzenedicarboxylate for High-Performance Lithium-Storage</b></p> <p><u>Natthawat Semakul</u>, <u>Sirakorn Wiratchan</u>, <u>Wittawat Punyarthansakun</u>, <u>Anon Tabthong</u>, <u>Wipada Lomkaew</u>, <u>Pubet Yodaai</u>, <u>Thapanee Sarakonsri</u>, <u>Apinpus Rujiwattra</u>, <u>Dieter Baurecht</u></p>

## 7. Innovative Material Processing for Technological Applications

Abstract code	Title / Author
S7_P1	<b>Layered Vanadium Phosphates with Large Plate-like Morphology: Novel Substrate-Free Colored Pearlescent Pigments</b> <u>Qiuyu Cheng</u>
S7_P2	<b>Solvothermal Synthesis of Inorganic Nanomaterials with Excellent Infrared Light Response Performance</b> <u>Shu Yin</u>
S7_P8	<b>Frictional behavior of carbon coatings in extreme temperature environments</b> <u>Park Hyunjuna, Kim Jin-Young, Lee HanChan</u>
S7_P12	<b>Mechanical and Physical Aspects of ZrO<sub>2</sub> in Lithium Disilicate Glass Ceramics for Dental Applications</b> <u>Arnon Kraipok</u>
S7_P13	<b>Thermoluminescence Response of Eu, Cu Co-doped K<sub>2</sub>Ca<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> Nanostructures Under O<sup>6+</sup> Ion Beam Irradiation</b> <u>Jae-Young Park</u>
S7_P14	<b>Metallization of Silicone Rubber Using a Sol–Gel-Derived Pd–SiO<sub>2</sub> Catalyst Layer</b> <u>Hohyeong Kim</u>
S7_P15	<b>Deep Blue Vitreous Enamel from Chanthaburi Quartz as a Local Alternative for Domestic Enamel Production for Jewelry Applications</b> <u>Surapong Panyata</u>
S7_P16	<b>Hybrid 3D-Printed PLA–Electrospun PVA/HPMC Nanofiber Wound Dressings with TiO<sub>2</sub> Antimicrobial Activity and Ibuprofen Delivery</b> <u>Pratiharn Namsirivivat</u>
S7_P18	<b>Synergistic Effects of Hybrid Nanolubricants on Surface Integrity and Friction Behavior in Immersion Milling of Tool Steel</b> <u>Titiwat Ariyacharoendamrong</u>
S7_P19	<b>Influence of Coolant Jet Orientation on Surface Integrity and Tribological Performance of Reamed Holes in AISI 1045 Steel</b> <u>Chayapol Srideeiam</u>
S7_P20	<b>Effect of Nanoparticle-Enhanced Lubrication on Surface Integrity and Tribological Performance in Aluminum Milling</b> <u>Totsapol Junwadee</u>
S7_P21	<b>Engineered Surface Resistance via Fiber Laser Texturing for Controlled Heat Localization in Resistance Spot Welding of SUS304</b> <u>Nattawut Srikong</u>
S7_P22	<b>Load–Speed Interaction and Counter-Body Effects on the Tribological Behavior of SKH51 Tool Steel under Dry Sliding</b> <u>Worakorn Neamthong</u>
S7_P23	<b>Geometry Effects on Friction in Ring Compression of Al6061</b> <u>Nattaphat Boonthuama</u>
S7_P24	<b>Velocity-Dependent Friction Stabilization of Silicon Wafer under Dry Ceramic Sliding Contact</b> <u>Tanison Lekthong</u>

S7_P25	<b>Load-Induced Surface Damage Evolution of Silicon Wafer under Ceramic and Metallic Contact</b> <u>Satakun Sriassadorn</u>
S7_P26	<b>Interfacial engineering of ohmic-like type-I SnO<sub>2</sub>/BiOCl heterostructure for efficient charge carrier separation and phenol photodegradation.</b> <u>Boonyaporn Tiwthong</u>
S7_P27	<b>Effect of cations and anions composition on photocatalytic properties of single-halogen layered Sillén oxyhalide: a case study on ABi<sub>3</sub>O<sub>4</sub>X<sub>2</sub> (A = Li and Na; X = Cl and Br)</b> <u>Arraya Kapkham</u>
S7_P28	<b>Study on PLA/NR TPV fabricate via dynamic vulcanization and its printability using Portable 3D printing.</b> <u>Chayanon Yapraphon</u>

## 8. Instrumentation and Advanced Materials Characterization

Abstract code	Title / Author
S8_P1	<b>Revisiting the Color Physics of Amethyst: New Evidence Overturning the Classic Fe-Related Defect Model</b> <u>Nuatawan Thamrongsiripak, Wutthikrai Busayaporn, Nongnuch Jangawang, Tirapat Wechprasit, Wutthigrai Sailuam, Atipong Bootchanont</u>
S8_P2	<b>Effect of Heat Treatment on Microstructure and Mechanical Properties of Aluminum Alloys for Battery Components</b> <u>Jung Han Kim</u>
S8_P3	<b>Linking Colorimetric Change and Technical Imaging in the Assessment of Pigment/Binder Degradation under Accelerated Aging</b> <u>Krittin Assawaphom, Pichayada Katemake</u>
S8_P4	<b>Real-Time Monitoring of Crystal Structure Evolution under Thermal Treatments by in-situ Synchrotron XRD at BL1.1W, SLRI</b> <u>Krongthong Kamonsuangkasem, Miskawan Sripakdee, Suttipong Wannapaiboon, Chatree Saiyasombat, Prae Chirawatkul</u>
S8_P5	<b>Role of As-Cast Grain Boundary Network in Internal Oxidation of Al-Mg Alloys with Minor La and Zr Additions</b> <u>Seong-Ho Ha, Tae-Yeong So, Young-Chul Shin</u>
S8_P8	<b>Common Mistakes and Errors from Materials Characterization Techniques: Practical Experience and Suggestions</b> <u>Jindaporn Chaison, Yupawadee Kumoonand Chaiyasit Banjongprasert</u>

## 9. AI-driven Electronics, IoT and Digital Technologies for Next-generation Innovations

Abstract code	Title / Author
S9_P1	<b>High-reliability real-time CO<sub>2</sub> quantitative monitoring system using infrared sensor cluster and pre-treatment module</b> <u>Jin-Young Kim, Hyunjun Park</u>
S9_P2	<b>In-Materio Physical Reservoir Computing Device using SWNT/{Mo<sub>2</sub>(S<sub>2</sub>)<sub>3</sub>}-ring Composite Networks</b> <u>Muhammad Syahmi Hazim Bin Mohd Nizar, Tomoki Misaka, Yuki Usami, Takuya Matsumoto, Hirofumi Tanaka</u>
S9_P3	<b>Low-Cost IoT Flight Logger for Bang Fai Rocket Analysis and Safety Monitoring</b> <u>Anupon Suwannatrai</u>

## 10. Recycling Materials and Environmentally-friendly Processing

Abstract code	Title / Author
S10_P1	<b>Design of dynamic covalent networks with repeatable healing property via reversible phosphonate linkages</b> <u>Kazuho Maeda</u> , Yota Okuno, Yasuhiko Iwasaki
S10_P2	<b>Effect of Polymeric Binders on Mechanical and Physical Properties of Compression-Molded Rice Straw and Coconut Fiber Composite Panels</b> Athapon Simpraditpan, Chuntip Skumnuantip, Varistha Chobpattana, Kawita Chattrakul, <u>Anothai Pholsuwan</u>
S10_P3	<b>Low-Cost Fabrication of Hydrophobic Candle Soot/CaCO<sub>3</sub> Composite Coated Stainless-Steel Mesh for Oil-Water Separation</b> <u>Natda Wetchakun</u> , Khatcharin Wetchakun, Sumet Sakulsermsuk
S10_P4	<b>Development of Biodegradable Porous Cryogels for Effective Microplastic Remediation in Environmental Water Sources</b> <u>Sarocho Duangdesh</u> , Puracheth Rithchumpon, Nathaporn Cheechana, Wanich Limwanich, Winita Punyodom, Patnarin Worajittiphon, Puttinan Meepowpan
S10_P8	<b>Sustainable Recovery of Precious Metals from Electronic Waste via Hybrid Organic–Inorganic Materials</b> <u>Nichayanan Manyuan</u> , Rattapon Khamlue, Natcha Deechakawan, Paphitchaya Chaowalit, Watcharaphol Paritmongkol
S10_P10	<b>Fe-Doped TiO<sub>2</sub>/Hard Carbon Coated PLA 3D-Printed Structures for Synergistic Adsorption–Photocatalytic Removal of Methylene Blue in Water</b> Pornpailin Saengkla, Chanakan Permitt, <u>Sirinda Chalermthiralert</u> , Tyme Hetrakul, Benjaporn Inseemeeesak, Angsuthorn Ngamprasit, Natthaphong Thanawatthaimongkol, Gasidit Panomsuwan, Ratchatee Techapiesancharoenkij, Oratai Jongprateep
S10_P11	<b>Influence of Clear Glass Cullet and Lithium Contents on the Physical and Mechanical Properties of Low-Temperature Fired Clay Tiles</b> <u>Chonlathit Pitipoomsuksan</u> , Wilaiwan Leenakul
S10_P12	<b>Enzymatic Hydrolysis Pretreatment of Hemp Fibers for Size Reduction in Cellulose Nanofiber Production: Effects of Cellulase-to-Xylanase Ratio and Total Enzyme Loading</b> <u>Wiranchana Srichanachaichok</u> , Wichanee Bankeeree, Kamonwan Pacaphol
S10_P14	<b>Valorization of Industrial Mirror Waste as a Fluxing Agent for Low-Temperature Porcelain Synthesis</b> <u>Phumipat Chokimsuwan</u> , Sittha Kuntik, Thatpicha Meewong, Siritorn Thongboonsong, Thammapat Totaen, Niti Yongvanich
S10_P15	<b>Noble Metal-Based Intermetallic Compounds for Energy Catalysis</b> <u>Qipeng Lu</u>

## 11. Quantum Materials and Technologies

Abstract code	Title / Author
S11_P2	<b>Generic skyrmion phase diagram in ferrimagnetic films</b> <u>Moditha Viraj Wijethunga</u> , Xiangrong Wang

## 12. Industrial Perspectives in Materials and Innovation

Abstract code	Title / Author
S12_P1	<b>The impact of residual copper on oxide scale adhesion in recycled hot-rolled steels: a novel macro-tensile approach for assessing industrial process waste</b> <u>Thanasak Nilsonthi</u> , Somrerk Chandra-ambhorn
S12_P2	<b>Evaluation of Microstructure and Mechanical Properties of Non-Quenched and Tempered Steel According to Coating Treatment and Multi-stage Forging Process</b> <u>Do-Young Kim</u>

## 13. Rare Earth, Critical Materials and its Applications

Abstract code	Title / Author
S13_P4	<b>Opportunities for rare-earth and critical-element analysis using X-ray spectroscopic beamlines at the synchrotron Light Research Institute</b> <u>Wutthikrai Busayaporn</u>

## 14. Consortium for Advancing High Performance Industrial Postdoctoral and Postgraduate Researchers in Novel Materials to Drive High Impact Technology for Future Industry (PMU-B)

Abstract code	Title / Author
S14_P1	<b>Redox-Active Copper Metal-Organic Frameworks for Electrochemical Immunosensing of Hepatitis B Surface Antigen</b> <u>Supakeit Chanarsa</u> , Patnarin Worajittiphon, Jaroon Jakmune, Kontad Ounnunkad
S14_P2	<b>Oxygen-vacancy-rich TiO<sub>2</sub>-based metal oxide nanocomposites synthesized by spark discharge for visible-light photocatalytic hydrogen evolution</b> <u>Nirinphat Pooseekheaw</u> , Winai Thongpan, Arisara Panthawan, Pisith Singjai, Wattikon Sroila, Ekkapong Kantarak, Natthawikan Yodsungnoen, Wiradej Thongsuwan
S14_P4	<b>Mesoporous K- and Ca-Promoted Ni/Al<sub>2</sub>O<sub>3</sub> Catalysts Derived from MIL-53(Al) for Microwave Plasma-Assisted Dry Reforming of Methane into Syngas</b> <u>Supaphorn Thammakan</u> , Dheerawan Boonyawan, Yothin Chimupala, Saranphong Yimklan, Arlee Tamman, Pimchanok Tapangpan, Mudtorlep Nisoa, Choncharoen Sawangrat



## Pioneering Sustainable Solutions: The Rise of Eco-Friendly Materials in Electronics

Rodrigo Martins, P. Barquinha, L. Pereira, R. Silva, D. Vieira, E. Carlos, A. Kiazadeh, J. Santanu, D. Gaspar, E. Fortunato

<sup>a</sup> CENIMAT/i3N, Department of Materials Science, School of Science and Technology, NOVA University Lisbon and CEMOP/UNINOVA, Caparica, Portugal

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### Abstract

In today's digital age, our rapid technological advancements confront us with critical sustainability challenges, including material scarcity, mounting waste, and environmental pollution, often exacerbated by high-temperature manufacturing processes. The socio-economic growth driven by the demand for smart electronics and non-recyclable materials contributes to climate change and resource depletion.

As we embrace the Internet of Things (IoT) and wearable technology, the need for sustainable materials becomes more urgent. Emerging nanoscale devices provide promising alternatives to silicon-based options, particularly in the field of so called transparent and paper electronics, which have the potential to revolutionize our approach to electronic devices, transforming it.

This presentation explores strategies to minimize electronic waste while advancing eco-friendly technology solutions. We are committed to developing green electronic products that meet consumer needs and promote environmental stewardship, going from micro to nanoscale approaches. Our efforts also focus on raising social awareness about sustainable technologies, engaging with communities and policymakers to advocate for practices that harmonize technology with environmental responsibility.

Join us in this exploration of innovative approaches to sustainability, as we aim to significantly impact our environment and foster a resilient future empowered by green technology.

**Keywords:** Advanced Functional Materials for Electronics; Electronics beyond Silicon; Sustainable Electronics



### Prof. Rodrigo Ferro Paiva Martins

NOVA School of Science and Technology, University Lisbon,  
Portugal

Abstract: Pioneering Sustainable Solutions: The Rise of Eco-Friendly Materials in Electronics

**PL1: June 29, 2026 (9:45-10:30)**

# Soft Technology Beyond Polymers: Muscovite Mica as a Universal Platform for High-Performance Flexible Sensors and Actuators

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## Abstract

With the rapid evolution of the Internet of Things, Artificial Intelligence, and soft robotics, there is a surging demand for high-performance electronic components that possess mechanical flexibility, optical transparency, and environmental robustness. Conventional flexible substrates, such as polymers, are often limited by poor thermal tolerance and lattice mismatch, hindering the integration of high-quality functional oxides or semiconductors that require high-temperature processing. This plenary talk introduces "MICAtronics"—an emerging soft-technology platform based on muscovite mica, designed to overcome these limitations and enable high-performance sensing and actuation. By leveraging van der Waals heteroepitaxy, we demonstrate the direct growth of high-quality functional materials on mica, thereby circumventing strict lattice-matching constraints. This talk will highlight breakthrough advancements in two key areas: Sensors and Actuators. In the realm of sensors, we present ultra-high-responsivity, solar-blind, deep-UV photodetectors based on Ga<sub>2</sub>O<sub>3</sub> heterostructures that maintain superior optoelectronic performance under bending and at high temperatures. We will also demonstrate ZnO/mica heteroepitaxial strain sensors that exhibit a giant piezoresistive effect, with a gauge factor exceeding 1000. Furthermore, by integrating magnetostrictive and piezoelectric materials, we have developed flexible proximity sensors with high magnetoelectric coupling coefficients for non-contact human-machine interfaces. Additionally, we will discuss the development of 3D Ag nanocrystal-intercalated mica mesocrystals as highly sensitive Surface-Enhanced Raman Spectroscopy platforms for chemical sensing. Regarding actuators, we will introduce thermal actuators based on metal/mica quasi-van der Waals epitaxy. Exploiting the thermal expansion mismatch and robust interface, these structures exhibit giant thermal actuation with fast response times, offering new power sources for soft robotics. Additionally, we will discuss PVDF/mica bimorph structures that significantly enhance the pyroelectric response through thermal stress engineering, paving the way for advanced thermal harvesting and sensing/actuation. In summary, the MICAtronics platform not only preserves the transparency and high-temperature stability of mica but also opens a new avenue for next-generation transparent, durable, and multifunctional soft electronic systems through precise strain engineering and heterogeneous integration.

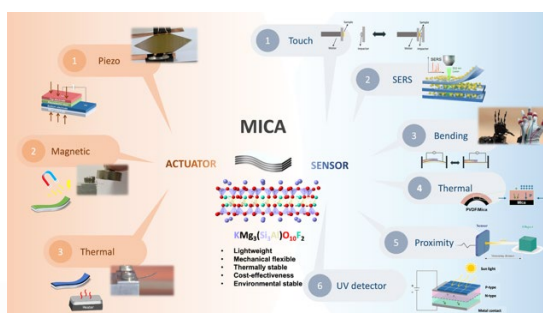


Fig.1 Sensors and actuators based on MICAtronics

**Keywords:** MICAtronics, van der Waals Heteroepitaxy, Flexible, Soft Technology

**Prof. Ying-Hao Chu**

National Tsing Hua University, Chinese Taipei

Abstract: Soft Technology Beyond Polymers: Muscovite Mica as a Universal Platform for High-Performance Flexible Sensors and Actuators

PL2: June 29, 2026 (10:45-11:30)





# Machine Learning-Assisted SERS Nanosensors for Predictive Applications

Xing Yi Ling

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## Abstract

Nanomaterial-based sensors (“nanosensors”) are attractive detection tool to detect multiple disease biomarkers swiftly and at point-of-care. These nanosensors make use nanometer-sized particles with unique physical, optical, and electrical properties to induce enhanced output signals in response to the detection and/or changes in concentrations of analytes. In this talk, I will discuss my group’s effort in using one of the nanosensors, surface-enhanced Raman scattering (SERS) nanosensors for various biomedical applications. SERS utilizes metallic nanoparticles such as Ag and Au to harness incoming light excitation, concentrate surface plasmon resonances, and boost the Raman vibrational signatures of biomarkers for ultrasensitive detection. Firstly, I will discuss various SERS platform fabrication strategies to bestow desirable chemoselectivity and increase target analyte/biomarker affinity to achieve higher detection sensitivity and selectivity. I will also highlight various emerging research strategies which utilize machine learning algorithms for rapid on-site prediction of disease infection. Specifically, how chemometrics and machine learning algorithms can transform the assimilation and interpretation of complex spectral data in biological samples by discerning more patterns hidden within the data, to achieve high throughput data analysis, sensitivity, and disease prediction. Collectively, these advances underscore the potential of SERS nanosensors and hybrid analytical strategies to address longstanding challenges in biomarker sensing and to accelerate innovation in biomedical diagnostics.



**Prof. Xing Yi Ling**

Nanyang Technological University, Singapore

Abstract: Machine Learning-Assisted SERS Nanosensors  
for Predictive Applications

**PL3: June 29, 2026 (11:30-12:15)**

# Advanced Organic Optoelectronic Devices by Controlling Precise Charge Transfer Phenomena

Chihaya Adachi\*

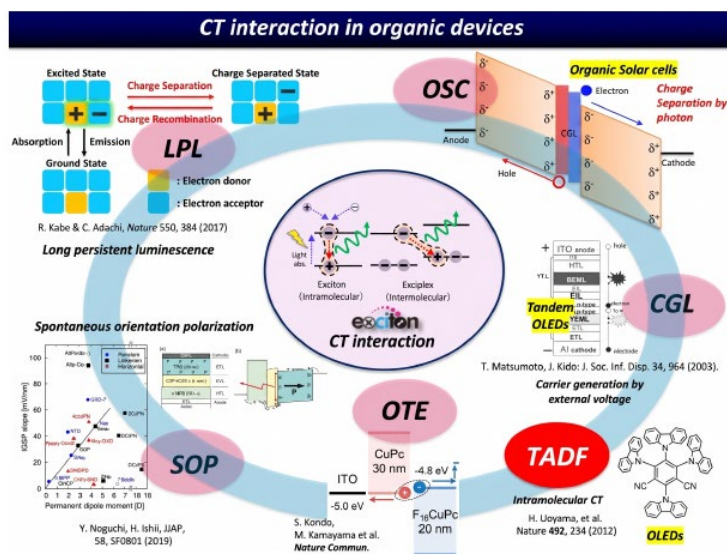
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## Abstract

In the last 10 years, there has been a wide variety of studies on thermally activated delayed fluorescence (TADF)-OLEDs, focusing on the limitless possibilities of molecular design<sup>1</sup>). Furthermore, hyperfluorescence (HF)-OLEDs have been developed because they can achieve high efficiency and a narrow spectral width, which is ideal for practical display applications. The advanced HF-OLEDs realized high light-emitting performance by engineering host, TADF, and terminal emitter (TE) molecules. Firstly, we present the comprehensive design principles for the materials and device architectures used in HP-OLEDs, focusing on fast T-S upconversion, negative gap, efficient FRET, GSP, and carrier trapping, aimed at high-performance OLEDs<sup>2-5</sup>). In addition, we underscore the crucial role of CT in organic optoelectronic devices, shedding light on its importance in future organic devices such as organic thermoelectrics<sup>6</sup>).



## References:

- [1] T. Uoyama et al., *Nature*, **492**, 234 (2012), [2] C.-Y. Chan et al., *Nat. Photonics*, **15**, 203 (2021), [3] Y.-T. Lee et al., *Adv. Elect. Mater.*, **7**, 2001090 (2021), [4] M. Tanaka et al., *ACS Appl. Mater. & Inter.*, **12**, 50668 (2020), [5] Y.-T. Lee et al., *Nat. Commun.*, **15**, 3659 (2024), [6] S. Kondo et al., *Nat. Commun.*, **15**, 8115 (2024)

**Keywords:** OLED, TADF, Hyperfluorescence, CT

**Prof. Chihaya Adachi**  
OPERA, Kyushu University, Japan

Abstract: Advanced Organic Optoelectronic Devices by  
Controlling Precise Charge Transfer Phenomena

**PL4: June 30, 2026 (9:00-9:45)**





# Beyond materials: Understanding electrochemical energy systems through operando science

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## Abstract

The past decade has witnessed extraordinary progress in the discovery of electrochemical materials. Yet the realization of energy technologies that are simultaneously efficient, durable, and scalable remains disproportionately slow relative to the pace of materials discovery. This persistent gap between materials innovation and technological deployment points to a deeper limitation in how electrochemical systems are commonly understood. Performance does not arise from materials in isolation. It emerges from dynamic, coupled, and often unstable interactions among interfaces, phases, transport pathways, and reaction environments during operation. A central challenge for the field is therefore not only to develop better materials, but also to understand how electrochemical systems evolve, degrade, and fail in real time, and how that knowledge can be translated into predictive design.

This talk will present operando science as a unifying framework for addressing that challenge. By integrating real-time spectroscopy, multimodal imaging, theory, modelling, and data-driven analysis, operando approaches make it possible to capture electrochemical function as an evolving process rather than a static endpoint. This perspective reveals that durability, efficiency, and scalability are governed by multiscale dynamics, spanning atomic rearrangements, interfacial evolution, mesoscale heterogeneity, and device-level instability. The emphasis, therefore, moves beyond incremental benchmarking and chemistry-specific optimization toward a broader scientific agenda centered on dynamic interface science, mechanistic insight, and process-aware understanding.

The broader argument of this lecture is that electrochemical energy research must now move beyond the era of empirical materials discovery alone. The next frontier lies in building predictive electrochemical systems, in which fundamental understanding, real-time observation, and intelligent engineering are brought into direct alignment. In this context, operando science is not merely a characterization strategy. It is an essential foundation for the future design of electrochemical energy systems.

**Keywords:** Operando science; Electrochemical energy systems; Dynamic interfaces; Multiscale characterization; Predictive design



**Assoc. Prof. Soorathep Kheawhom**  
Chulalongkorn University, Thailand

Abstract: Beyond materials: Understanding electrochemical energy systems through operando science

**PL5: June 30, 2026 (9:45-10:30)**

# Graphene Electronics for Next Generation of Sensors and Energy Storages

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<sup>b</sup>National Nanotechnology Center,

<sup>c</sup>National Energy Technology Center, National Science and Technology Development Agency (NSTDA), Thailand

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## Abstract

Carbon nanomaterials, particularly two-dimensional graphene and three-dimensional graphene foams, provide a versatile platform for next-generation electronic and electrochemical systems due to their high electrical conductivity, large surface area, and tunable physicochemical properties. This presentation focuses on the engineering of graphene across multiple length scales, emphasizing scalable synthesis methods such as electrolytic exfoliation and chemical vapor deposition (CVD).

For biochemical sensing, functionalized graphene electrodes fabricated via inkjet and screen-printing are integrated with loop-mediated isothermal amplification (LAMP) and portable electrochemical analyzers to enable rapid, point-of-care diagnostics. These platforms demonstrate high sensitivity and selectivity for a wide range of targets, including foodborne pathogens (*Vibrio parahaemolyticus*, *Salmonella* spp.), infectious agents (*Mycobacterium tuberculosis*, SARS-CoV-2), narcotics (methamphetamine, THC), glucose, and environmental microplastics. Enhanced performance is attributed to tailored surface functionalization and improved charge transfer kinetics.

In parallel, beyond-lithium energy storage systems are explored, focusing on zinc-ion (ZIBs) and sodium-ion batteries (SIBs). A key innovation is the development of nanoporous hard carbon derived from sustainable agricultural bio-waste, such as spent coffee grounds and bamboo, hybridized with graphene and MnO<sub>2</sub>. These materials mitigate dendrite formation while enhancing ion transport, enabling improved safety, sustainability, and cycling stability.

Additionally, nitrogen- and sulfur-co-doped reduced graphene oxide (N,S-rGO) is employed in high-performance supercapacitors with ionic liquid polymer electrolytes. Devices fabricated in coin, pouch, and cylindrical formats exhibit high power density, fast charge-discharge rates, and long cycle life. Scalable manufacturing approaches, including roll-to-roll electrode processing and semi-automated assembly, are also demonstrated.

Overall, this work highlights graphene engineering as a scalable and sustainable pathway toward advanced sensors and next-generation energy storage technologies. Moreover, the current work at Thai Microelectronics Center (TMEC) which is a specialized semiconductor foundry dedicated to the design and fabrication of customized MEMS devices and advanced sensors are presented. TMEC's mission is to serve as a strategic partner for MEMS and sensor startups, enabling their successful transition from prototype to production. TMEC achieve this by providing comprehensive design and process support, ensuring that our customers meet stringent quality standards and time-to-market requirements.

**Keywords:** Graphene, Carbon, Sensors, Battery, Supercapacitor

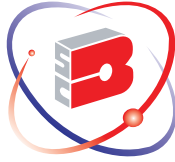
**Dr. Adisorn Tuantranont**

Thai Microelectronics Center (TMEC), NSTDA, Thailand

Abstract: Graphene Electronics for Next Generation of  
Sensors and Energy Storages

**PL6: July 1, 2026 (9:00-9:45)**





# Bara Scientific

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**บริษัท พาราไซแอนติฟิค จำกัด** เป็นบริษัทชั้นนำของประเทศ ในการนำเข้าและให้บริการแบบครบวงจร สำหรับเครื่องมือวิทยาศาสตร์ และเครื่องมือทดสอบด้านวิศวกรรม จากผู้ผลิตชั้นนำที่มีชื่อเสียงระดับโลก โดยเฉพาะอย่างยิ่งบริษัทฯ ได้เป็นตัวแทนจำหน่ายแต่เพียงผู้เดียวในประเทศไทย สำหรับเครื่องมือวิทยาศาสตร์ และเครื่องทดสอบของ **Shimadzu** ซึ่งเป็นบริษัทชั้นนำของประเทศญี่ปุ่น มาแล้วกว่า 30 ปี

เพื่อให้ลูกค้าของบริษัทฯได้รับความพึงพอใจสูงสุด บริษัทฯได้มีการพัฒนาประสิทธิภาพในการให้บริการแก่ลูกค้า โดยได้มีการนำระบบ **คุณภาพมาตรฐาน ISO 9001:2015** มาใช้ในการบริหารงาน และบริษัทฯ ยังสามารถให้ **บริการสอบเทียบเครื่องมือตามมาตรฐาน ISO/IEC 17025:2005** สำหรับเครื่อง UV-VIS Spectrophotometer และเครื่อง Universal Testing Machine และจะขยายขอบเขตเพื่อให้ครอบคลุมการสอบเทียบเครื่องมือชนิดอื่นต่อไป

และการที่ บริษัท พาราไซแอนติฟิค จำกัด เป็นบริษัทใน **กลุ่มบริษัท พาราวิชั่นเซอร์ จำกัด** ซึ่งเป็นองค์กรขนาดใหญ่ชั้นนำของประเทศ ทำให้บริษัทฯ มีศักยภาพสูง สามารถให้บริการลูกค้าได้ทุกระดับ ซึ่งรวมถึงการจัดซื้อ ที่เป็นโครงการขนาดใหญ่

## สำหรับลูกค้าของบริษัทฯ ได้ครอบคลุมทั้งกลุ่มลูกค้าราชการ และเอกชน เช่น

- มหาวิทยาลัยและสถาบันการศึกษาต่างๆ
- กรม-กองขงภาครัฐบาล
- สถาบันค้นคว้าวิจัยด้านวิทยาศาสตร์
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- LC-MS/MS (Triple Quadrupole)
- LCMS-Q-TOF MS
- LC-MS (Single Quadrupole)
- GC-MS/MS
- GC-MS

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- Microorganism Identification (MALDI TOFMS)
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- Functional Near-infrared Spectroscopy System for Research

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- Thermal Analyzer
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- Total Organic Carbon Analyzer

### Scientific Equipments

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- Optical Emission Spectrometer

#### Surface Analyzer Group

- Scanning Probe Microscope
- Electron Probe Micro Analyzer
- X-Ray Photoelectron Spectroscopy

### Testing Machines

- Universal Testing Machines
- Fatigue Tester Machine
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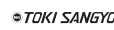
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Glove Box System  
Solvent Purification System



Centrifuges  
Table-top Centrifuge  
High Speed Refrigerated Centrifuge



Laboratory Equipment  
Rotary Evaporators  
Low Temperature Circulator



Viscosity Measurement  
Portable Viscometer  
Digital Viscometer



Shaker Technology  
Incubator Shaker  
Water Bath



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air sampling suction pump (air pump)



Desk Top NMR  
NMReady-60MHz : 1H, 7Li, 13B, 13C, 19F, 31P  
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# Enhance your materials analysis with Auto Cross Section Software for Thermo Scientific FIB-SEMs

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Focused ion beam scanning electron microscopes (FIB-SEMs), such as the Thermo Scientific™ Scios™ 3 FIB-SEM, are frequently used for the preparation of cross-sections; the FIB is used to remove bulk material while the SEM can visualize the process and the resulting cross-sectioned surfaces. This reveals features that are otherwise hidden under the surface of the sample, helping to unravel critical characteristics of materials.

Thermo Scientific Auto Cross Section (AXS) Software is a dedicated solution for automated FIB cross-sectioning and site imaging with SEM at multiple scales and resolutions. It can be used to define multiple sites on multiple specimens, to perform the subsequent automated cross-sectioning/imaging, and it will save the recorded SEM images produced during the process.

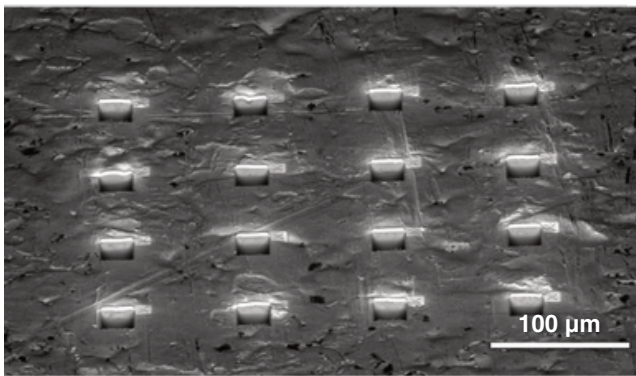


Figure 1. Scanning electron microscopy image of a cross-section array created on a Zn-Mg-Al-coated low-carbon steel. Cross-sections were generated automatically with AXS Software in a Scios 3 FIB-SEM.

In this way, AXS Software provides significant time-saving and efficiency improvements, enabling industrial and academic users to complete their tasks more quickly in order to focus on the critical analysis that follows. It also removes the complexity of operating a FIB-SEM instrument, allowing even users with minimal experience to acquire high-quality data.

Automation routines guarantee reproducibility and consistency, helping to ensure that each cross-section is prepared accurately for reliable and consistent results. Additionally, automation can reduce user bias and error while also improving safety, making the entire cross-sectioning workflow more dependable and secure, especially in industrial environments.

## Zinc-based automotive coating

Zinc-based coatings are extensively utilized in the automotive industry to enhance corrosion resistance and to extend the durability of steel components that are exposed to harsh atmospheric conditions. These coatings act as protective layers, preventing the oxidation of the underlying steel, and are applied through methods such as hot-dip galvanization and electroplating.

## Conclusions

Thermo Scientific Auto Cross Section Software, powered by the outstanding performance of the Scios 3 FIB-SEM, provides a precise and efficient solution for the analysis of zinc-based coatings. By enabling detailed cross-sectional imaging and analysis, the software aids in the assessment of coating thickness and uniformity, the evaluation of adhesion quality, and the detection of defects and inconsistencies. This method can help ensure the reliability and longevity of zinc-coated steel components in the automotive industry, facilitating proactive quality control and maintenance.

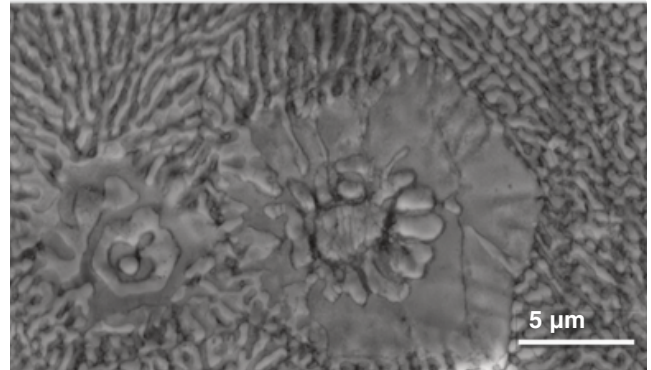


Figure 2. SEM imaging showing the surface features of a Zn-Mg-Al automotive coating.

Microstructural analysis of Zn-Al-Mg coatings is often challenging due to the complexity and varying scales of the developed structures. For instance, primary zinc dendrites can be large, with diameters exceeding 100  $\mu\text{m}$ , while the eutectic phase structures can be significantly smaller, with diameters around 100 nm. Therefore, it is essential to have access to an array of large cross-section SEM images (Figure 1 and 3) at multiple magnifications and at high resolution (Figure 4).

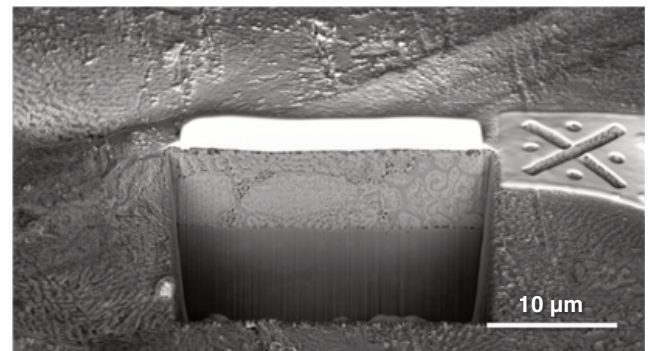


Figure 3. SEM image showing a cross-section automatically created by AXS Software on a Zn-Mg-Al-coated low-carbon steel.

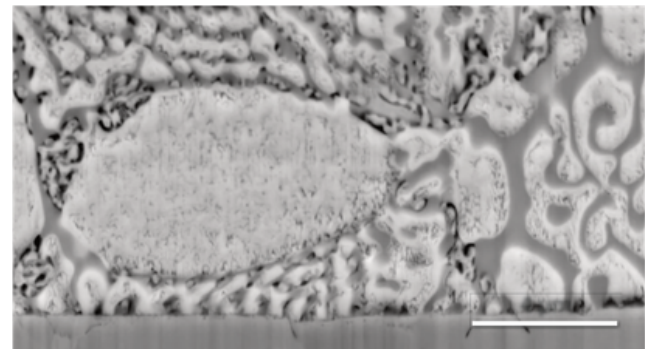


Figure 4. SEM tilt-corrected image showing microstructural features of the Zn-Mg-Al coating on the low-carbon steel substrate.



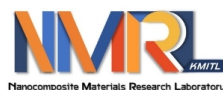
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