CLOSING CEREMONY OF PVSEC-36
Friday, 14 November 2025, Bangkok

INTERNATIONAL PVSEC-36

Agenda

1) Review Memorial Photo of PVSEC-36
2) Summary of PVSEC-36 by Prof. Dusit Kruangam, Chair of PVSEC-36
2) Summary of Highlight of Program by Assist. Prof. Dr. Patamaporn Sripadungtham, Co-Chair of PVSEC-36
3) Award Presentations
    - 3.1 PVSEC Awards
    - 3.2 PVSEC Special Awards
    - 3.3 Hamakawa Awards
    - 3.4 Young Scientist Awards
    - 3.5 Best Oral Presentation Awards (Regular)
    - 3.6 Best Poster Awards (Regular)
    - 3.7 Best Oral Presentation Awards (Students)
    - 3.8 Best Poster Awards (Students)
    - 3.9 Introduction of Future Conferences
        - WCPEC-9, 2026 (South Korea)
        - IEEE PVSC, 2026 (USA) (Video)
        - EU PVSEC, 2026 (Netherlands) (Arno)
        - PVSEC-38, 2027 (China)
        - PVSEC-39, 2028 (Japan)
        - PVSEC-40, 2029 (India)
4) Closing Remarks by Prof. Usama, Chair of PVSEC IAC.

Number of Participants at PVSEC-36, 2025, Bangkok, Thailand

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Type	Number	%
Regular	305	66%
Student	157	34%
Total	462	100%

Nationality	Number	%
Thailand	116	25.1%
Japan	108	23.4%
South Korea	52	11.3%
China	43	9.3%
India	20	4.3%
Germany	11	2.4%
Taiwan	8	1.7%
Egypt	7	1.5%
France	6	1.3%
Vietnam	6	1.3%
Netherlands	6	1.3%
Austraila	6	1.3%
Indonesia	6	1.3%
USA	6	1.3%
Myanmar	5	1.1%
Philippines	5	1.1%
Saudi Arabia	5	1.1%
Sri Lanka	5	1.1%
Malaysia	4	0.9%
Bangladesh	3	0.6%
Iran	3	0.6%
Spain	3	0.6%
Yemen	3	0.6%
Singapore	3	0.6%
Lao	2	0.4%
Mexico	2	0.4%
Morocco	2	0.4%
Nigeria	2	0.4%
Pakistan	2	0.4%
Romania	2	0.4%
Russia	2	0.4%
Brazil	1	0.2%
Kazakhstan	1	0.2%
Malawi	1	0.2%
Sudan	1	0.2%
Tanzania	1	0.2%
Togo	1	0.2%
Turkey	1	0.2%
United Arab Emirates	1	0.2%
Total	462	100.0%

Number of Students at PVSEC-36, 2025, Bangkok, Thailand

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Nationality	Number	%
Japan	37	23.4%
Thailand	27	17.1%
South Korea	24	15.2%
China	20	12.7%
India	10	6.3%
Myanmar	5	3.2%
Sri Lanka	5	3.2%
Philippines	3	1.9%
Malaysia	3	1.9%
Saudi Arabia	3	1.9%
Bangladesh	2	1.3%
Egypt	2	1.3%
Iran	2	1.3%

USA	1	0.6%
France	1	0.6%
Germany	1	0.6%
Indonesia	1	0.6%
Malawi	1	0.6%
Morocco	1	0.6%
Nigeria	1	0.6%
Pakistan	1	0.6%
Romania	1	0.6%
Singapore	1	0.6%
Taiwan	1	0.6%
Togo	1	0.6%
Vietnam	1	0.6%
Yemen	1	0.6%
Total	157	100.0%

Summary Paper Contribution of PVSEC-36, Nov. 06, 2025

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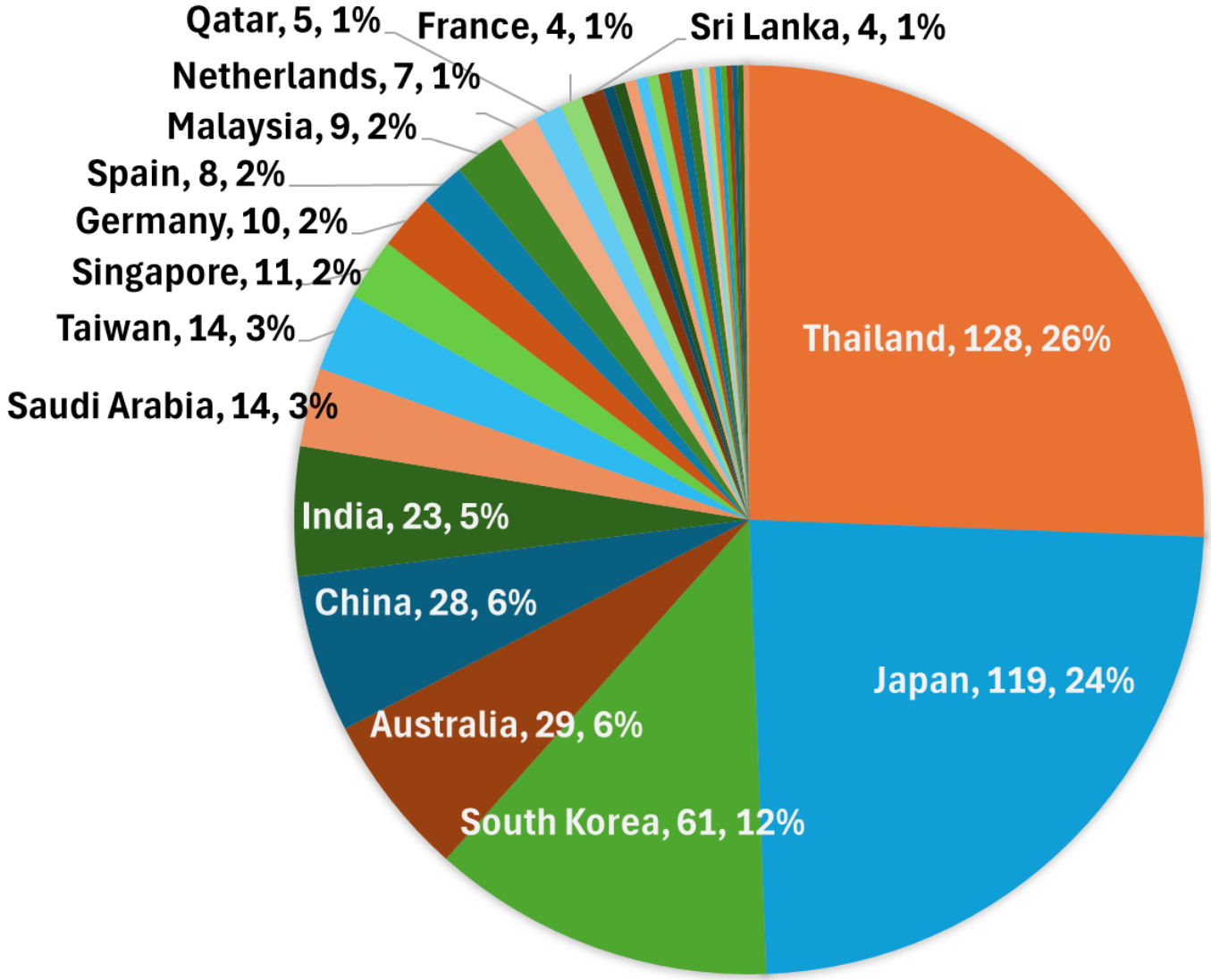

Hong Kong	2
Indonesia	2
Italy	2
Laos	2
Mexico	2
Morocco	2
Romania	2
Russia	2
Bangladesh	1
Finland	1
Kazakhstan	1
Kenya	1
Mali	1
Switzerland	1
UAE	1
Vietnam	1
Myanmar	1
Philippines	1

500 Abstracts, 34 Countries, 245 Oral presentations, 255 Poster presentations

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Potential publication outlets have been identified for PVSEC-36, including

A. The special issues of "**Japanese Journal of Applied Physics" for PVSEC-36**.

Submission deadline: **January 15, 2026.**

B. Conference Proceedings: the PVSEC-36 Organizers will publish an electronic Proceedings of the PVSEC-36 for the permanent records of the contributions of the speakers. **Publication Date: Jan – Feb, 2026.**

C. Collaborated Thai Journal is **the Journal of Renewable Energy and Smart Grid Technology, RAST,** (TCI Tier 1) and it is indexed in Scopus. An academic journal published by Naresuan University in Thailand, with a focus on renewable energy and smart grid systems.

D. **Journal of Metals, Materials and Minerals (JMMM)** publishes original research articles as well as review articles related to research and development in science, technology and engineering of metals, materials and minerals.

Submission deadline: March 31, 2026.

PVSEC-36

Summary of the Technical Program

Program Chair: Dr. Krissanapong Kirtikara (KMUTT/KU)

Vice Program Chair: Asst. Prof. Dr. Tanokkorn Chenvidhya (KMUTT),
CSSC, Pilot Plant Development and Training Institute, King Mongkut's University of Technology Thonburi

Area Chair 1: Dr. Siripha Junlakarn (ERI/CU),
Energy Research Institute, Chulalongkorn University

Area Chair 2: Dr. Kobsak Sriprapha (NECTEC/NSTDA),
National Electronics and Computer Technology Center, National Science and Technology Development Agency

Area Chair 3: Dr. Amornrat Limmanee (ENTEC/NSTDA),
National Energy Technology Center, National Science and Technology Development Agency

Area Chair 4: Dr. Taweewat Krajangsang (ENTEC/NSTDA),
National Energy Technology Center, National Science and Technology Development Agency

Area Chair 5: Dr. Rongrong Cheacharoen (CU),
Metallurgy and Materials Science Research Institute, Chulalongkorn University

Area Chair 6: Assoc. Prof. Dr. Surawut Chuangchote (KMUTT),
Department of Tool and Material Engineering, Faculty of Engineering, King Mongkut's University of Technology Thonburi

Including all Session Chairs of PVSEC-36

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Solar Energy At Night Using A Thermoradiative Diode

Ned Ekins-Daukes, NSW, Australia

- Thermoradiative power generation has been demonstrated with $mW.m^{-2}$ electrical power density.
- In the radiative limit, thermoradiative power can be generated on spacecraft at levels of tens $W.m^{-2}$
- Terrestrial thermoradiative power is limited by atmospheric downwelling radiation to $W.m^{-2}$

High efficiency silicon-based PV technology for high volume manufacturing

LONGi, China

- LONGi focus on BC technology and explores all possible solutions for peak performance,
- 27.81% efficiency achieved with HIBC cell structure with optimal structure and materials,
- First 26% efficiency module manufactured with mass production feasible technology,
- High-end HIBC is already in mass production, products on the way…

ASEAN Photovoltaics (PV): Development, Learning, Performance, Marketing, and Policy

Krissanapong Kirtikara, KMUTT, Thailand

- Divergent starting points, convergent momentum
- Rooftop and distributed solar are critical growth drivers
- Grid integration is now the choke point, not just generation
- Supply chain, trade, and localization strategies are crucial
- Innovation and hybrid models will unlock next-tier growth

Molecular Engineering for Porphyrin-Based Dye-Sensitized Solar Cells

Tomohiro Higashino, Kyoto Univ., Japan

- High power conversion efficiency of DSSC (PCE ~15%), design flexibility and potential for indoor applications.
- Development of Porphyrin sensitizers has advanced through energy-level engineering for Cu(I/II) redox shuttles.

Importance of Solar-powered Vehicles toward Creation of Clean Energy Society

Masafumi Yamaguchi, Toyota Technological Institute, Japan

- Si tandem solar cells are expected to have strong potential for solar-powered vehicle applications.
- New-record efficiency 33.7% with InGaP/GaAs/Si 3-junction tandem solar cells module (775 cm^2).
- Perovskite/Si tandem solar cell modules will have to improve reliability for solar-powered vehicle applications.

High-Performance Transparent Luminescent Solar Concentrators (TLSCs) Using ESIPT Luminophores

Vinich Promarak, VISTEC, Thailand

- Modified ESIPT dyes with negligible overlap integral and high edge emission efficiency have been developed as promising luminophores for transparent LSC-PV devices in BIPV applications.
- Transparent LSC-PV devices (1 × 0.65 m^2) have been fabricated and tested, achieving a PCE of 2.21%, η_{ext} of 21.47%, AVT of 95%, and CRI of 95.

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Integrating perovskite with thin-film technologies: challenges and breakthroughs in flexible and tandem solar cells

Makoto Konagai, Tokyo City Univ., Japan

- Manufacturing flexible solar cells requires addressing through-hole collector electrode issues, which are critical to improving conversion efficiency.
- Bendable perovskite/Si tandem solar cell and perovskite/CIGS tandem solar cell have been improved to 27% and 24%, respectively.

Scaling Up Processing of Perovskite Photovoltaics

Eva Ungar, Humboidt Univ., Germany

- Development of conversion efficiency of perovskite/Si Tandem cells and perovskite/ CIGS Tandem cells is on going.
- Halide perovskites enable triple-junction and multi-junction solar cells, and their tunable absorber properties help increase efficiency at low cost.
- NOMAD, open science data sharing platform.

Area 1: PV in Sustainable Energy System, Policy

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- Secure and flexible renewable integration is being enabled by Thailand's evolving energy and regulatory framework through the deployment of grid-scale energy storage.
- Precise PV active power prediction is being enabled by an interpretable AI method demonstrated at the 1.50-GW Sudair Solar PV Park in Saudi Arabia.
- In the ASEAN region, the integration of renewable energy (RE) and solar PV is proceeding at different paces and with varied strategies. This diversity is primarily driven by each country's unique mix of existing resources and future energy potential.
  - Singapore, having limited resources, is focused on procuring clean electricity from its neighbors.
  - Laos, which already has abundant hydropower, is also using MOUs to increase its RE share.
  - Indonesia is concentrating on developing its upstream supply chain, with a strategic focus on mineral resources.
  - Thailand is implementing diverse measures, such as Feed-in Tariffs (FIT) for solar-plus-storage, tax exemptions for PV installations, and community-based solar projects.

Area 2: System Engineering and Field Performance

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- ASEAN potential capacity, Growth and trends are presented.
- India: 50yrs experience and projection are proposed
- IEA-PVPS: Global trend and target,

  Top 10 countries 85% of global market 2024,

  Target 7.9 kW/CAP --> 75 TW in 2050
- EU: capacity 2025 → 1570 GW

- Challenge of land use: application in VIPV, Truck, Agri-PV, BIPV in many presentation

- AI machine learning applications in fault and failure

Area 3: Wafer-based Silicon Photovoltaics

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- Silver-lean/ Silver-free metallization approach for silicon solar cell with screen printed contact.
- Modified aluminum pastes for forming N^+ regions, offering a low-cost, self-doping route for improved back-contact silicon solar cells.
- Stability of laser-enhanced contacts under light anneal conditions, providing insights into long-term contact reliability.
- Structural advances in encapsulant-less vertical c-Si modules, using thermoplastic materials as module bases for lightweight and simplified module manufacturing.

Area 4: Thin-film Photovoltaics and Modules

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- Recent strategies advancing the photovoltaic performance and Reliability of organic solar cells.
- Advancing earth-abundant chalcogenide-based PVs: Structural, Defect & Interface engineering strategies for enhanced efficiency.
- Approaching 20% efficiency in kesterite indoor PV, advancing low-light energy harvesting for IoT and building applications.
- Final status of on-orbit demonstration test for next generation solar cell on HTV-X1.
- Optimized chalcogenide absorbers for low-light photovoltaics, overcoming spectral mismatch challenges in indoor environments.

Area 5: Perovskite and Emerging Photovoltaics

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- Controlling perovskite orientation enhance performance of tandems.
- Minimizing microstructure disorder can enhance mechanical stability.
- Multiple interfacial treatments can be utilized to enhance performance and stability of both single junction and tandems.
- Open Perovskite Database and ISOS stability testing consensus will get us there.
- Sustainable Carbon electrodes from local resources would be good alternatives.
- Scalable fabrication and green ink is important.
- Fibrous substrate with unconventional form factors for flexible and integrated Organic solar cells.

Area 6: Cross Cutting Areas

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- Polarity-dependent behavior in III–V multijunction solar cells fabricated via wafer bonding, creating new insights into high-efficiency tandem device design.
- Advances in indoor chalcogenide-based tandem pathways, pushing efficiency limits under low-intensity spectral conditions.
- Open-access generative datasets of solar cell luminescence images, enabling transparent AI benchmarking and accelerated defect analysis.
- MOF-based photocatalyst synthesis control for selective lignin conversion, expanding solar-to-chemical applications.
- Advanced optical and numerical modeling to guide high-efficiency, lightweight module designs for next-generation PV applications.