

S0801. Oral Session I

🕒 Nov 27, Wednesday, 13:30-15:00

📍 Room 502

🗣️ **Presider:** Prof. Fang-Chung Chen (National Yang Ming Chiao Tung University, Taiwan)
Prof. Cheng-Liang Liu (National Taiwan University, Taiwan)

13:30

2024-WED-S0801-I001

Invited

Organic/Hybrid Thermoelectric Materials and Devices

Prof. Cheng-Liang Liu, National Taiwan University (Taiwan)

14:00

2024-WED-S0801-O001

Phenethyl Ammonium Iodide as an Effective Additive for Lead-free Perovskite Solar Cells

Nutchha Khambunkoed, Fang Chung Chen, National Yang Ming Chiao Tung University (Taiwan)

14:15

2024-WED-S0801-O002

Optically Engineered Ceramic Nanofiber Aerogels for Versatile Passive Radiative Cooling Applications

Ching-Wen Hwang, Pin-Hui Lan, Dehui Wan, National Tsing Hua University (Taiwan)

14:30

2024-WED-S0801-O003

Heterogeneous Integration: CsPbBr₃ Grown on a Silicon Substrate via Chemical Vapor Deposition by Heating the Silicon Wafers

Wei-Chun Hsu, Yi-Syuan Li, Yu-Pin Lan, National Yang Ming Chiao Tung University (Taiwan)

14:45

2024-WED-S0801-O004

Using SiC/SiO_x as Front Transparent Passivating Contacts in Crystalline Silicon Solar Cells

Chun-Ping Lin, National Cheng Kung University (Taiwan); Jin-Cheng Chen, Yi-Ping Lin, National Yang Ming Chiao Tung University (Taiwan); Han-Chen Chang, Industrial Technology Research Institute (Taiwan); Ying-Yuan Huang, National Cheng Kung University (Taiwan)

S0802. Oral Session II

🕒 Nov 27, Wednesday, 15:15-16:45

📍 Room 502

🗣️ **Presider:** Prof. Chih-Wei Chu (Academia Sinica, Taiwan)
Prof. Chang-Hua Liu (National Tsing Hua University, Taiwan)

15:15

2024-WED-S0802-I001

Invited

Advancing Sustainable Mid-Infrared Optoelectronics with Black Phosphorus-Based van der Waals Heterostructures

Prof. Chang-Hua Liu, National Tsing Hua University (Taiwan)

15:45

2024-WED-S0802-O001

Numerical study of thin film solar cell with kesterite Absorber layer and non-toxic buffer layers

Bhavya K, Venkatesh N, Balaji Gururajan, Wei Sheng Liu, Yuan Ze University (Taiwan)

16:00

2024-WED-S0802-O002

Optimization of the Carrier Selection Layer of Interdigitated Tunnel Back Contact Solar Cell

Sheng-Hsiang Huang, Ying-Yuan Huang, National Cheng Kung University (Taiwan)

16:15

2024-WED-S0802-O003

Analysis of Charge Transport and Exciton Diffusion Mechanisms in Host-Guest Systems of OLED Device with One-Dimensional Simulation

Liang-Yu Chen, Yuh-Renn Wu, National Taiwan University (Taiwan)

16:30

2024-WED-S0802-O004

Physics-driven Deep Learning in Laser-induced Thin Film Color Prediction

Yun-Jie Jhang, Chia-Hung Chou, Wisarud Yongbanjerd, Pin-Han Huang, National Tsing Hua University (Taiwan); Tsung-Ming Tai, NVIDIA (Taiwan); Hung-Wen Chen, National Tsing Hua University (Taiwan)

S0803. Oral Session III

🕒 Nov 28, Thursday, 10:45-12:00

📍 Room 502

🗣️ Presider: Prof. Zingway Pei (National Chung Hsing University, Taiwan)
Prof. Yu-Ching Huang (Ming Chi University of Technology, Taiwan)

10:45

2024-THU-S0803-I001

Invited

Towards Highly Efficient 4-Terminal Perovskite/Si Tandem Solar Cells

Prof. Yu-Ching Huang, Ming Chi University of Technology (Taiwan)

11:15

2024-THU-S0803-O001

Harvesting the high-level singlet fission energy transfer in tetracene-based photovoltaics

Anas Mujahid, Luo Shihong, Chien-Chih Wu, Tzung-Fang Guo, National Cheng Kung University (Taiwan)

11:30

2024-THU-S0803-O002

Fabrication of High Efficiency FA-base Perovskite Solar Cells via Hybrid Solution-Vacuum Process

Yu-Hung Hsiao, National Taiwan University of Science and Technology (Taiwan); Shin-Han Huang, Hou-Chin Cha, Yu-Ching Huang, Ming Chi University of Technology (Taiwan); Chih-Chien Lee, National Taiwan University of Science and Technology (Taiwan); Shun-Wei Liu, Ming Chi University of Technology (Taiwan)

11:45

2024-THU-S0803-O003

Enabling Long-Term Stability of Ambient-Fabricated Perovskite Photodetectors by Microwave-Assisted Synthesis

Denice Feria, Guo-Hong Wu, Tai-Yuan Lin, National Taiwan Ocean University (Taiwan)

S0804. Oral Session IV

🕒 Nov 28, Thursday, 14:00-14:45

📍 Room 502

🗣️ Presider: Prof. Yeu-Long Jiang (National Chung Hsing University, Taiwan)
Prof. Chu-Chen Chueh (National Taiwan University, Taiwan)

14:00

2024-THU-S0804-I001

Invited

(to be determined)

Prof. Wei-Hsuan Hung, National Central University (Taiwan)

14:30

2024-THU-S0804-O001

The Impact of Chloride in Perovskite Solar Cell Via Sequential and Segmented Evaporation Process

Chi-Yang Wei, National Taiwan University of Science and Technology (Taiwan); Galing Murokinas, Shun-Wei Liu, Ming Chi University of Technology (Taiwan); Chih-Chien Lee, National Taiwan University of Science and Technology (Taiwan)

S0805. Oral Session V

🕒 Nov 28, Thursday, 15:00-16:00

📍 Room 502

🗣️ Presider: Prof. Chao-Yu Chen (National Cheng Kung University, Taiwan)
Prof. Hao-Wu Lin (National Tsing Hua University, Taiwan)

15:00

Invited

2024-THU-S0805-I001

Interface Design for Efficient Organic, Perovskite and Perovskite/Organic Tandem Solar Cells

Prof. Chu-Chen Chueh, National Taiwan University (Taiwan)

15:30

2024-THU-S0805-O001

Investigation of Optical and Electrical Properties of a-Si:H Thin Films Prepared by Plasma-Assisted Reactive Sputtering with Substrate Bias

Hao-Hsuan Tsai, Wei-Cheng Lin, Chien-Jen Tang, Feng Chia University (Taiwan)

15:45

2024-THU-S0805-O002

Diffractionless Beam Formed by Photonic Crystal Ring Arrays

Hao-Liang Ke, Yung-Chun Hsu, Chii-Chang Chen, National Central University (Taiwan)

S8. Poster Session II

🕒 Nov 28, Thursday, 13:30-16:00

📍 Room 500

2024-THU-P0802-P001

Study on the photocorrosion resistance of hydrothermally grown Co(OH)₂ films on n-type GaN photoelectrodes with a Nickel Oxide seed layer for photoelectrochemical reactions

Wei-Cheng Hsu, Ching-Yung-Lan Chuang, Wei-Tung Wei, Da-Wei Xiao, National Cheng Kung University (Taiwan); Ming-Lun Lee, Southern Taiwan University of Science and Technology (Taiwan); Jinn-Kong Sheu, National Cheng Kung University (Taiwan)

2024-THU-P0802-P002

Research on Interface Modification Engineering by Adding Sulfur-Containing Organic Compound MSM to Enhance the Efficiency of Perovskite Solar Cells

Yi-Ling Tsai, Qi-Ming Zhao, Lung-Chien Chen, National Taipei University of Technology (Taiwan)

2024-THU-P0802-P003

Study on Enhancing the Efficiency of Perovskite Solar Cells Using Antisolvents with Pure Natural Plant Extracts

Yu-Fang Hu, Qi-Ming Zhao, Lung-Chien Chen, National Taipei University of Technology (Taiwan)

2024-THU-P0802-P004

Exploring the Impact of Adding H₂O in the Active Layer on the Efficiency of Perovskite Solar Cells

Tsai-Lun Chen, Wen-Ying Yu, Lung-Chien Chen, National Taipei University of Technology (Taiwan)

2024-THU-P0802-P005

High Entropy Alloy-based (AgAlCuNiTi) Plasmonic Nanocomplex for Efficient Photocatalytic Hydrogen Evolution Reaction

Yi-Jung Kuo, Yu-Hsuan Cheng, Ta-Jen Yen, National Tsing Hua University (Taiwan)

S8. Poster Session II

🕒 Nov 28, Thursday, 13:30-16:00

📍 Room 521

2024-THU-P0802-P006

Enhancing device efficiency and stability of perovskite solar cells through surface engineering of NiOx and perovskite layers with hexafluorophosphate salts

Zong-Xuan She, Che-Chia Hsu, Sheng-Hsiung Yang, National Yang Ming Chiao Tung University (Taiwan)

2024-THU-P0802-P007

Enhancement of Solar Radiation Absorption Above 1.1 μm in Hot Carrier Photovoltaic Components through the Local Plasmon Resonance Effect of Metal Nanoparticles in a Simulated Schottky Structure

Wei-Cheng Hsu, Ching-Fuh Lin, Hsin-Ting Lin, National Taiwan University (Taiwan)

2024-THU-P0802-P008

Polyvinylcarbazole Passivation for Highly Enhanced Efficiency of Perovskite Solar Cells via Sandwich Evaporation Technique

Yu-Hsiang Hung, Ching-Fuh Lin, National Taiwan University (Taiwan)

2024-THU-P0802-P009

The Characteristics of Dye-Sensitized Solar Cells using Red Algae Extract

Hong You Li, Bing-Mau Chen, Shang-Ping Ying, Minghsin University of Science and Technology (Taiwan)

2024-THU-P0802-P010

Application of Vertically Oriented Graphene Nanoflakes Doped $\text{Cs}_{0.05}\text{FA}_{0.8}\text{MA}_{0.15}\text{Pb}(\text{I}_{0.85}\text{Br}_{0.15})_3$ in Perovskite Solar Cells

Jia-De Wei, Wei-Shiuan Tseng, Hong-Cheng Kuo, National Yang Ming Chiao Tung University (Taiwan); Mei-Hsin Chen, National Taipei University of Technology (Taiwan)

2024-THU-P0802-P011

Research on Algae Carbon Sequestration and Light Sources

Yu-Lun Chen, Chen-En Wan, Ming-Chuan Chang, Liang-Ni Chen, Zi-Xuan You, Wei-Yu Chen, Fu Jen Catholic University (Taiwan)

2024-THU-P0802-P012

Ultrabroad Perfect Absorber Using Transition Metal Nitride Metasurfaces

Chih-Ang Lin, Tzu-Yu Peng, National Taiwan University (Taiwan); Jia-Wern Chen, Sheng-Jhe Shen, Academia Sinica (Taiwan); Chen-Yu Wang, Chu-Chen Chueh, National Taiwan University (Taiwan); Yu-Jung Lu, Academia Sinica (Taiwan)

2024-THU-P0802-P013

Plasmon-Enhanced Photocatalytic Hydrogen Evolution in WS_2 -Based Hybrid Systems

Yen-Hua Lin, Ta-Jen Yen, National Tsing Hua University (Taiwan)

2024-THU-P0802-P014

Optimizing the Design and Development of a Novel Solar Power Circulation System

Hsiang-En Hsu, Shang-Yang Lin, Min-Hsun Hsu, Hung-Chih Hsieh, National United University (Taiwan)

2024-THU-P0802-P015

Nanostructured High-Entropy Oxide Thin Film Electrodes for Cost-effective and High-Performance Supercapacitors

Chia-En Lin, Chien-Tsung Li, Bu-Jine Liu, Li-Cheng Huang, National Yang Ming Chiao Tung University (Taiwan); Changsik Choi, Institute for Advanced Engineering (Korea, South); YongMan Choi, National Yang Ming Chiao Tung University (Taiwan)

2024-THU-P0802-P016

Defect engineering in wide-bandgap perovskite solar cells for indoor applications

Chia-Tse Hsu, Guan Zhou Lin, Fang-Chung Chen, National Yang Ming Chiao Tung University (Taiwan)

2024-THU-P0802-P017

Fabrication and Characterization of Doped Copper Oxide Thin Films for Photodetectors

Chien Tsung Li, Chia En Lin, Li Cheng Huang, National Yang Ming Chiao Tung University (Taiwan); Changsik Choi, Institute for Advance Engineering (Korea, South); Yong Man Choi, National Yang Ming Chiao Tung University (Taiwan)

2024-THU-P0802-P018

Bidentate Phosphine Oxides as Passivating Agents to Enhance the Performance of Perovskite Light-Emitting Diodes

Min-Xian Zhan, Chia-Hui Ho, Fang-Chung Chen, National Yang Ming Chiao Tung University (Taiwan)

2024-THU-P0802-P019

Lead-Less Red Emitting Perovskite Quantum Dots

Yan-Yu Shiu, Chen-Hsin Tu, Fang-Chung Chen, National Yang Ming Chiao Tung University (Taiwan)

S8. Poster Session II

🕒 Nov 28, Thursday, 13:30-16:00

📍 Room 521

2024-THU-P0802-P020

Enhanced Passivation of Solar Cells through Substitution of PECVD Silicon Nitride with Sputtered Silicon Nitride

Hao En Chan, Chu-Hsuan Lin, National Dong Hwa University (Taiwan)

2024-THU-P0802-P021

Performance of Solar Cells Integrated with Replica Encapsulation Layers of Leaf Surface Microstructures

Yen Ting Liu, Bing-Mau Chen, Shang-Ping Ying, Minghsin University of Science and Technology (Taiwan)

2024-THU-P0802-P022

Enhancing Perovskite Solar Cell Performance with boronic Acid: Boosting Efficiency and Stability of 3D/2D Perovskite Layers

Bharathi Jeyakumar, Lung-Chien Chen, National Taipei University of Technology (Taiwan)

2024-THU-P0802-P023

a-Si:H/a-C:H superlattice photodetectors

Yeu-Long Jiang, Yi-Shan Chen, Rui Tze Hung, National Chung Hsing University (Taiwan)

2024-THU-P0802-P024

Characterization of GaAs Solar Cells with Novel Mesa Designs

Chin-I Chen, Tao Deng, Chien-Chung Lin, National Taiwan University (Taiwan)

2024-THU-P0802-P025

Photoelectrochemical Water-Splitting Using Sputtered Cu₂O-based Electrodes for Hydrogen Production

Yu-Hsiang Tsai, Cheng-Ying Chen, National Taiwan Ocean University (Taiwan)

S8. Poster Session III

🕒 Nov 29, Friday, 09:00-11:00

📍 Room 521

2024-FRI-P0803-P001

Optimizing the high-quality c-axis GaN thin film using DC-Pulsed Reactive Sputtering

Li-Cheng Huang, Wei-Sheng Liu, Kuo-Jui Hu, Jiun-Yi Ye, Yuan Ze University (Taiwan)