

Asia-Pacific International Conference on Perovskite, Organic Photovoltaics and Optoelectronics (IPEROP27)

Fukuoka, Japan, 2027 January 18th - 20th
Conference organizers: Toshinori Matsushima, Zhanglin Guo, Tingli Ma and Antonio Guerrero

Conference Program

January 18th - Day 1 (Monday) 1	
14:00 - 14:50	**Registration**
14:50 - 15:00	**Opening and Annoucement**
	Session 1A Chair: Chu-Chen Chueh
15:00 - 15:45 1A-K1	Alex K-Y. Jen *(Department of Materials Science & Engineering, City University of Hong Kong Kowloon, Hong Kong SAR)* Molecular Engineering of Hybrid Materials for Highly Efficient and Stable Organic and Perovskite Solar Cells
15:45 - 16:15 1A-I1	Annalisa Bruno *(School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore)* Vacuum-Processed Perovskites: From Scalable Photovoltaics to Nanoscale Optoelectronics
16:15 - 16:20	Industry talk
16:20 - 16:50 1A-I2	Akinori Saeki *(The University of Osaka)* Automated Experiments and Digital Transformation in Next-Generation Solar Cell Research
16:50 - 17:35 1A-K2	Atsushi Wakamiya *(Institute for Chemical Research, Kyoto University)* Materials Innovation and Interfacial Engineering for Practical Perovskite Photovoltaics: From Molecular Design to Commercialization
17:35 - 18:45	**Welcome reception**



January 19th - Day 2 (Tuesday) 2

08:50 - 09:00 **Annoucement of the day**

Session 2A
Chair: Alex K-Y. Jen

09:00 - 09:45 2A-K1 Tsutomu Miyasaka *(Toin University of Yokohama, Peccell Technologies, Inc.)*
Interface Engineering for Highly Durable Perovskite Solar Cells

09:45 - 10:15 2A-I1 Gerrit Boschloo *(Department of Chemistry, Ångström Laboratory, Physical Chemistry, Uppsala University, Uppsala SE-751 20, Sweden)*
Mixed Ionic-Electronic Conduction and Electrochemical Doping in FAPbI3 Perovskite Solar Cells

10:15 - 10:45 **Coffee Break**

Session 2B
Chair: Akinori Saeki

10:45 - 11:15 2B-I1 Angus H-L Yip *(Department of Materials Science & Engineering, City University of Hong Kong Kowloon, Hong Kong SAR)*
Epitaxy Mimicking Molecular Interfaces for Organic and Perovskite Solar Cells

11:15 - 11:20 Industry talk

11:20 - 11:50 2B-I2 Yutaka Matsuo *(Department of Chemical Systems Engineering, Graduate School of Engineering, Nagoya University, Nagoya, Aichi, Japan.)*
Nanocarbon Materials for Perovskite Solar Cells

11:50 - 12:20 2B-I3 SEIGO ITO *(University of Hyogo)*
Cost-Effective Carbon-Electrode Perovskite Solar Cells

12:20 - 12:25 Industry talk

12:25 - 12:55 2B-I4 Tzu-Chien Wei *(National Tsing-Hua University, Taiwan)*
Beyond Chasing Higher Conversion Efficiencies: The Potential of Perovskite Photovoltaics to Mitigate the Duck Curve in Power Grid

12:55 - 15:00 **Lunch Break**

Session 2C1
Chair: Annalisa Bruno

15:00 - 15:30 2C1-IS1 Takurou Murakami *(National Institute of Advanced Industrial Science and Technology (AIST))*
Development of Materials and Process Technologies toward the Commercialization of Perovskite Solar Cells

15:30 - 15:45 2C1-O1 Elin Worsley *(SPECIFIC IKC, Faculty of Science and Engineering, Swansea University, United Kingdom)*
Optimising Nanosecond Laser Scribing for Flexible Perovskite Solar Modules

15:45 - 16:00 2C1-O2 Chang-Le Liu *(Department of Electronic Engineering, National Taiwan University of Science and Technology, Taipei 106335, Taiwan)*
Interfacial Engineering for High-Yield Flexible Perovskite Solar Modules

16:00 - 16:15 2C1-O3 He-Tai Huang *(Bachelor Program in Semiconductor Materials and Fabrication, Ming Chi University of Technology , New Taipei City, 243303, Taiwan)*
Green Solvent Formulations for One-Step Flash-Evaporated Flexible Devices

16:15 - 16:30 2C1-O4 Jia-You Ho *(Department of Electro-Optical Engineering, National Taiwan University of Science and Technology, Taipei 106335, Taiwan)*
Molecular and Process Engineering for Mechanically Durable Flexible Perovskite Solar Cells

16:30 - 16:45 2C1-O5 Jun-Cang Chen *(Department of Electronic Engineering, National Taiwan University of Science and Technology, Taipei 106335, Taiwan)*
Widening the Processing Window of Formamidinium Iodide for Scalable Vacuum-Deposited Perovskite Solar Cells

Session 2C2
Chair: Tsutomu Miyasaka

15:00 - 15:30 2C2-IS1 Ajay Jena *(RCAST, The University of Tokyo)*
Carrier Dynamics and Light-induced Phase Segregation in 1.9 -2 eV Wide-bandgap Perovskites Aimed for 3-J Solar Cells



15:30 - 15:45 2C2-O1	Huan Bi *(i-Powered Energy System Research Center (i-PERC), The University of Electro-Communications)* Thermal-Cycling Stability of Wide-Bandgap Pb Perovskite Solar Cells Enabled by 4PADCB-Modified NiO_x
15:45 - 16:00 2C2-O2	Yi-Chen Lin *(Department of Chemical Engineering, National Chung Hsing University, 145 Xingda Road, Taichung, 402-27, Taiwan)* Molecularly Engineered FZ Self-Assembled Monolayers Reduce Voltage Losses in Wide-Bandgap Perovskite Solar Cells
16:00 - 16:15 2C2-O3	HAO WEI YU *(Department of Chemical Engineering National Taiwan University, TW)* Co-Assembly with Donor-Acceptor Self-Assembled Monolayers to Enhance Interfacial Hole Extraction, Wettability and Crystallization in Inverted Perovskite Solar Cells
16:15 - 16:30 2C2-O4	Lirong Rong *(State Key Laboratory of Displays and Optoelectronics, The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong SAR)* Thienoacene-bonded interphase stabilizes hole-selective contacts for efficient perovskite solar cells
16:30 - 16:45 2C2-O5	Guozheng Du *(School of Engineering, The Australian National University, Canberra, Australian Capital Territory 2601, Australia.)* Crystallization-regulating molecular electron contacts enable efficient perovskite photovoltaics
	Session 2C3 Chair: Nam-Gyu Park
15:00 - 15:30 2C3-IS1	Satoshi Uchida *(The University of Tokyo)* Stability evaluation for Capacitive Perovskite Solar Cells by ML-MPPT
15:30 - 15:45 2C3-O1	Mathias Uller Rothmann *(Foshan Xianhu Laboratory)* Analytical microscopy of halide perovskite films and devices
15:45 - 16:00 2C3-O2	Aleksandra Boldyreva *(Center for Energy Science and Technology, Skolkovo Institute of Science and Technology)* The Role of Parylene Derivative and its Deposition Conditions on Perovskite Solar Cell Extrinsic Stability
16:00 - 16:15 2C3-O3	Faleela V. S. *(IIT Indian Institute of Technology Bombay, Department of Energy Science and Engineering)* Chemical Insights into Cu^+-Driven Degradation and Its Suppression through Dual Modification Strategies in Cu2O–Perovskite Interfaces
16:15 - 16:30 2C3-O4	Jemisha Sherolin Jackson *(University of Lancashire, United Kingdom)* Investigation of Ionic Liquid Modified Interfaces in Lead-Based Perovskite Thin Films
16:30 - 16:45 2C3-O5	Byung Gi Kim *(Department of Intelligent Semiconductor Engineering, Chung-Ang University, Seoul, Republic of Korea)* Upcycled Carbon-Shelled Iron Nanoparticles as Dual Electronic and Plasmonic Hole-Transport Modifiers for High-Responsivity Perovskite Photodetectors
16:45 - 18:45	**Poster Session**
19:30 - 22:00	**Social Dinner**



January 20th - Day 3 (Wednesday) 3

08:50 - 09:00 **Annoucement of the day**

Session 3A
Chair: Gerrit Boschloo

09:00 - 09:45 Nam-Gyu Park *(Sungkyunkwan University (SKKU))*
3A-K1 From Precursor Chemistry to Interfaces: Molecular Control of Efficient and Stable Perovskite Solar Cells

09:45 - 10:15 Shuzi Hayase *(The University of Electro-Communications)*
3A-I1 Role of Ink Solvents in Determining GeOx Passivation vs. Sn–Ge (1:1) Alloyed Perovskite Solar Cells

10:15 - 10:45 **Coffee Break**

Session 3B
Chair: Hin-Lap (Angus) Yip

10:45 - 11:15 Ayumi Ishii *(Graduate School of Advanced Science and Engineering, Waseda University, Tokyo, Japan)*
3B-I1 Chiral and Polar Low-Dimensional Perovskites: From Spin-Polarized Photodetection to Bulk Photovoltaic Effects

11:15 - 11:20 Industry talk

11:20 - 11:50 Hideo Ohkita *(Department of Chemical Science and Engineering, Graduate School of Engineering, Kyoto University)*
3B-I2 Impact of Interfacial Energy Offsets on Polymer and Perovskite Photovoltaics: From Heterojunctions to Single-Component Systems

11:50 - 12:20 Chu-Chen Chueh *(Department of Chemical Engineering, National Taiwan University, Taipei City, Taiwan)*
3B-I3 Advancing Organic-Inorganic Hybrid Perovskites: From Photovoltaics to Emerging Applications

12:20 - 12:25 Industry talk

12:25 - 12:55

12:55 - 15:00 **Lunch Break**

Session 3C1
Chair: Hideo Ohkita

15:00 - 15:30 QING SHEN *(The University of Elecro-Communications)*
3C1-IS1 Defects, Interfaces, and Charge Extraction in Sn-Based Perovskite Nanocrystals and Solar Cells

15:30 - 15:45 Chieh-Ting Lin *(Department of Chemical Engineering, National Chung Hsing University, Taichung, 40227, Taiwan)*
3C1-O1 Interface and Crystallization Engineering of Sn–Pb Perovskite Solar Cells: Towards HTL-Free Devices

15:45 - 16:00 Suraya Shaban *(Info-Powered Energy System Research Center (i-PERC), The University of Electro-Communications, Japan)*
3C1-O2 Enhancing Efficiency, Thermal, and Light Stability in Hole-Transport-Layer-Free Narrow- Bandgap Sn-Pb Perovskite Solar Cells via Germanium Doping

16:00 - 16:15 Yi-Kai Chen *(Department of Electronic Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan)*
3C1-O3 All-Vacuum-Deposited Lead-Free Perovskite Films for Charge-Transfer-Assisted SERS Substrates

16:15 - 16:30 Jun Yan *(Guangdong Basic Research Center of Excellence for Aggregate Science, School of Science and Engineering, The Chinese University of Hong Kong (Shenzhen), Shenzhen, Guangdong, 518172, P.R. China)*
3C1-O4 Probing the invisible charge transfer states for low-offset organic photovoltaics

16:30 - 16:45 Giacomo Giorgi *(Department of Civil & Environmental Engineering (DICA), Via G. Duranti 93, I-06125 Perugia, The University of Perugia, Italy)*
3C1-O5 Where Light Meets Matter: Halide Perovskites at Photovoltaic Interfaces

Session 3C2
Chair: Ayumi Ishii

15:00 - 15:30 Ignacio Sanjuán *(Institute of Advanced Materials (INAM), University Jaume I, Castellon, Spain)*
3C2-IS1 Lead-free alternative memristors for sustainable artificial synaptic emulation



15:30 - 15:45 3C2-O1	Wen-Ya Lee *(Department of Chemical Engineering and Biotechnology, National Taipei University of Technology, Taipei 106344, Taiwan)* Polymer Nanocrystal Dielectrics for optoelectronic Artificial Synapse
15:45 - 16:00 3C2-O2	Vipulkumar Kheraj *(Department of Physics, Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat, Gujrat 395007, India)* Investigations on Laser Driven Surface-Treatments for Semiconductor Materials and Junctions using Surface Photovoltage Spectroscopy
16:00 - 16:15 3C2-O3	Subha Sadhu *(Banaras Hindu University)* Impact of Precursors on RT Synthesis of Luminescent CsPbBr3 Perovskite QDs for Display Devices
16:15 - 16:30 3C2-O4	I-Ling Hsueh *(Department of Chemical Engineering, National Chung Hsing University, Taichung 402, Taiwan)* Bias-free photoelectrochemical hydrogen production coupled with ascorbic acid oxidation using a solar cell
16:30 - 16:45 3C2-O5	SADOK BEN DKHIL *(Dracula Technologies, France, 26000 Valence (FR))* Industrialization of Inkjet-Printed Organic Photovoltaics for Indoor Energy Harvesting Applications
	Session 3C3 Chair: Yoshihiko Kanemitsu
15:00 - 15:30 3C3-IS1	Yue Hu *(School of Chemistry, University of Edinburgh)* A-Site Cation Control of Structure and Charge Carrier Dynamics in Lead Halide Perovskites
15:30 - 15:45 3C3-O1	Takafumi Yamamoto *(Kyoto university)* Discovery of Formamidinium-Rich Lead Iodide Perovskite-Derived Structures
15:45 - 16:00 3C3-O2	Bhawna * *(Kyoto University, Japan)* Stabilizing Pseudohalide Layered Perovskites via Mixed-Metal Ion Design
16:00 - 16:15 3C3-O3	Jiamin XU *(Department of Electronic and Computer Engineering, The Hong Kong University of Science and Technology, Hong Kong SAR, China.)* Counterion-Dependent Pseudohalide Engineering in Lead Halide Perovskite Films
16:15 - 16:30 3C3-O4	Thomas Baumeler *(GraphEnergyTech Ltd., The Officers' Mess Business Centre, Royston Road, Duxford, CB22 4QH, United Kingdom)* Beyond 20% Efficiency: Graphene-Enhanced Carbon Electrodes for Stable and Scalable Perovskite Solar Cells.
16:30 - 16:45 3C3-O5	Junke Jiang *(School of Physics Engineering and Technology, University of York, York, UK)* Atomic Structure, Thermal Dynamics and Electronic Properties of CsPbBr3 Grain Boundaries
16:45 - 16:50	**Break and Room Change**
	Session 3D
16:50 - 17:35 3D-K1	Yoshihiko Kanemitsu *(Kyoto University, Institute for Chemical Research, Kyoto, Japan)* Semiconductor Photophysics of Lead Halide Perovskites
17:35 - 17:50	**Closing ceremony and poster awards**



Poster Contribution

017	Madeleine Justianto *(LayTec AG, Seesener Straße, 10-13, Berlin, Germany)* In-situ and In-line Optical Monitoring of Perovskite Thin-Film Formation by Reflectance and Photoluminescence
037	Chinmayee Mhaskar *(Indian Institute of Technology Kharagpur)* Precursor-Stoichiometry-Controlled Defect Engineering in Lead-Free KCuCl3-x Halide Perovskite Thin Films
051	Yu Zhang *(University of Science and Tecnology, Liaoning)* Native reductants boosting highly efficiently tin perovskite solar cells
057	Abhishek Srivastava *(Indian Institute of Technology Indore)* Ti3C2TX-MXene Assisted Dual-Interfacial Passivation for HTL-Free Cs2AgBiBr6 Double Perovskite Solar Cells
058	Sougata Karmakar *(School of Material Science, Indian Association for the Cultivation of Science)* On-Chip Au NIs/Cs3Bi2I9 Heterostructures for Hot-Hole Extraction and Multifunctional Applications
060	Yumin Maeng *(Konkuk University - Glocal Campus)* Improved Crystallinity and Defect Passivation through Iodotriphenylphosphonium Iodide Engineering for Highly Efficient and Stable Perovskite Solar Cells