

IPEROP·24

22nd - 23rd January, 2024 · TOKYO · Japan

PEROVSKITE AND ORGANIC
PHOTOVOLTAICS
AND OPTOELECTRONICS



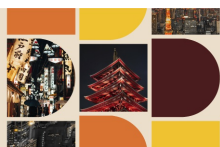
Asia-Pacific International Conference on Perovskite, Organic Photovoltaics and Optoelectronics (IPEROP24)

Tokyo, Japan, 2024 January 21st - 23rd

Conference organizers: Shuzi Hayase, Qing Shen and James Ryan

Conference Program

January 21st - Day 1 (Sunday) 1	
17:30 - 19:00	Registration - Campus restaurant
17:30 - 19:00	Welcome drink - Campus restaurant
January 22nd - Day 2 (Monday) 2	
08:00 - 09:00	Registration - Auditorium
08:50 - 09:00	Opening
Session 1A - Auditorium Chair: James Ryan	
09:00 - 09:45 Auditorium-K1	<u>Yoshihiko Kanemitsu</u> (<i>Institute for Chemical Research, Kyoto University</i>) Photophysics of lead halide perovskite semiconductors
09:45 - 10:15 Auditorium-I1	<u>Antonio Guerrero</u> (<i>Institute of Advanced Materials (INAM), Universitat Jaume I, 12006 Castelló, Spain.</i>) Interplay between ion migration and Contacts in Halide Perovskite Electronic Devices
10:15 - 10:45 Auditorium-I2	<u>Annamaria Petrozza</u> (<i>Istituto Italiano di Tecnologia</i>) Defects Activity in Metal Halide Perovskites
10:45 - 11:15	Coffee Break
Session 1B - Auditorium Chair: Antonio Guerrero	
11:15 - 11:45 Auditorium-I1	<u>Chu-Chen Chueh</u> (<i>Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan</i>) Two-Dimensional Sn-Based Perovskite Transistors and their Memory and Synaptic behavior
11:45 - 12:15 Auditorium-I2	<u>Seigo Ito</u> (<i>University of Hyogo</i>) Function of Porous Carbon in Multi-Porous-Layered-Electrode Perovskite Solar Cells
12:15 - 12:20 Auditorium-S1	<u>Luca Sorbello</u> (<i>Greatcell Solar</i>) Greatcell Solar - Industry talk
12:20 - 12:50 Auditorium-I3	<u>Anita Ho-Baillie</u> (<i>The University of Sydney Nano Institute (Sydney Nano) and School of Physics, University of Sydney, Sydney 2006, Australia</i>) Design principles for perovskite solar cells for tandem and space applications
12:50 - 13:20 Auditorium-I4	<u>Yi He, Qianji Han, Tingli Ma</u> (<i>Kyushu Institute of Technology, Japan</i>) Development of nanomaterials for Perovskite Solar Cells
13:20 - 15:00	Lunch Break
Session 1C1 - Library Room 301 Chair: Seigo Ito	
15:00 - 15:30 301-IS1	<u>Koichi Yamashita</u> (<i>Graduate School of Nanobioscience,, Yokohama City University</i>), Azusa Muraoka, Masanori Kaneko, Giacomo Giorgi Optical Properties and Defect Structures of Double Perovskite Cs ₂ SnGeI ₆
15:30 - 15:45 301-O1	<u>Dhruba KHADKA</u> (<i>Photovoltaic Materials Group, Center for GREEN Research on Energy and Environmental Materials, National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan</i>), Yasuhiro SHIRAI, Masatoshi YANAGIDA, Hitoshi Ota, KENJIRO MIYANO Effect of Bifunctional Molecular Passivator for Modulating Efficiency and Stability of Inverted Perovskite Solar Cells
15:45 - 16:00 301-O2	<u>Jilian Nei de Freitas</u> (<i>Centro de Tecnologia da Informação Renato Archer - CTI - Campinas-SP, Brazil</i>), Andreia de Moraes, José Maria Clemente Silva Filho, Francisco das Chagas Marques Stability of Metal Contacts in Perovskite Solar Cells
16:00 - 16:15 301-O3	<u>Suer Zhou</u> (<i>Department of Physics, University of Oxford, Clarendon Laboratory, Parks Road, OX1 3PU, United Kingdom</i>), Junxiang Zhang, Yangwei Shi, Joel Smith, James Drysdale, Benjamin Gallant, Margherita Taddei, Harry Sansom, Declan McCarthy, Stephen Barlow, Akash Dasgupta, Ashley Marshall, Jian Wang, David Ginger, Seth Marder, Henry Snaith Benzylamine Passivation of Wide-Bandgap Perovskite
16:15 - 16:30 301-O4	<u>Ming-Hsuan Yu</u> (<i>Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan</i>), Chiung-Han Chen, Chu-Chen Chueh Unveiling the Role of Self-Assembled Monolayer Structural Design in Optimizing Hole-Selective Contacts for Efficient Inverted Perovskite Solar Cells
16:30 - 16:45 301-O5	<u>Naoyuki Nishimura</u> (<i>National Institute of Advanced Industrial Science and Technology (AIST)</i>), Hiroaki Tachibana, Ryuzi Katoh, Hiroyuki Kanda, Takurou Murakami Aliphatic Primary Ammonium Bis(trifluoromethylsulfonyl)imide as a Highly Functional Additive for Spiro-OMeTAD Hole Transport Material in Perovskite Solar Cells
Session 1C2 - Auditorium Chair: TINGLI MA	
15:00 - 15:30 Auditorium-IS1	<u>Gaurav Kapil</u> (<i>i-Powered Energy System Research Center (i-PERC), The University of Electro-Communications</i>), Yasuhiro Fujiwara, Qing Shen, Hiroshi Segawa, Shuzi Hayase MA free Sn-Pb-Gex perovskite solar cells
15:30 - 15:45 Auditorium-O1	<u>Molly Worth</u> (<i>Swansea University</i>), David Beynon, Dima Sirbu, Trystan Watson Simultaneous Surface Enhancement of n and p Type Transport Layers for Back Contacted Perovskite Modules



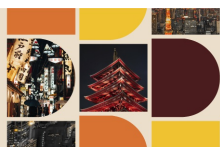
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15:45 - 16:00 Auditorium-O2	<u>Zhong-En Shi</u> (<i>Department of Materials Engineering, Ming Chi University of Technology, New Taipei City, Taiwan</i>), Chih-Ping Chen MA-free Wide-Bandgap Perovskite for Indoor Photovoltaic Applications
16:00 - 16:15 Auditorium-O3	<u>Lara PERRIN</u> (<i>Univ. Grenoble Alpes, Univ. Savoie Mont Blanc, CNRS, Grenoble INP, LEPMI, 38000 Grenoble, France</i>), Emilie PLANES, Ryuki TSUJI, Stéphanie NARBÉY, Cynthia FARHA, Jean-Claude HONORE, David MARTINEAU, Seigo ITO, Lionel FLANDIN Carbon-based mesoscopic perovskite solar cells: new insights for promising efficiency and durability enhancements.
16:15 - 16:30 Auditorium-O4	<u>Masahide Kawayara</u> (<i>Kanagawa Institute of Industrial Science and Technology (KISTEC)</i>), Tomoyuki Tobe, Daisuke Aoki, Hidenori Saito, Shinich Magaino International Efforts for Measurement of Performance of Perovskite Solar Cells
16:30 - 16:45 Auditorium-O5	<u>Rahul Patidar</u> (<i>SPECIFIC, Faculty of Science and Engineering, Swansea University, SA18EN, UK</i>), David Beynon, Ershad Parvazian, James McGettrick, Rodrigo Garcia-Rodriguez, Chris Griffiths, Matthew Davies, Trystan Watson Advancements in Continuous Roll to Roll Manufacturing of Perovskite Solar Cells via Slot Die Coating
Session 1C3 - Library Room 306 Chair: James Ryan	
15:00 - 15:30 306-IS1	<u>Luis Lanzetta</u> (<i>King Abdullah University of Science and Technology (KAUST), KAUST Solar Center (KSC), Thuwal 23955, Saudi Arabia</i>), Asayil Alsulami, Luis Huerta Hernandez, Derya Baran Degradation, Stabilisation and Electrical Tuning of Sn and Sn-Pb Perovskite Solar Cells
15:30 - 15:45 306-O1	<u>Kaat Valkeneers</u> (<i>U Hasselt - Hasselt University, Institute for Materials Research (IMO-IMOMEC), Agoralaan 1, 3590 Diepenbeek, Belgium and IMOMEC Division, IMEC, Wetenschapspark 1, 3590 Diepenbeek, Belgium</i>), Quan Liu, Bernhard Siegmund, Koen Vandewal, Wouter Maes Narrowing the gap: Optimizing donor materials for truly transparent photovoltaics
15:45 - 16:00 306-O2	<u>Dang-Thuan Nguyen</u> (<i>School of Engineering, The Australian National University, Canberra 2601, Australia</i>), Thomas White, The Duong A Study on Perovskite Solar Cells' Tolerance under Proton Radiations
16:00 - 16:15 306-O3	<u>Zhaoheng Ling</u> (<i>King Abdullah University of Science and Technology (KAUST), KAUST Solar Center (KSC), Thuwal 23955, Saudi Arabia</i>) Over 19% Efficiency in Ternary Organic Solar Cells Enabled by n-Type Dopants
16:15 - 16:30 306-O4	<u>Ta-Hung Cheng</u> (<i>Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taipei 106335, Taiwan</i>), Yu-Sheng Hsiao, Yuan-Jay Chang, Chih-Ping Chen Comprehensive Research of Carbazole-Phosphonic Acid Derivatives as Hole-Selective Layer in Inverted Perovskite Solar Cell
16:30 - 16:45 306-O5	<u>Xiaopeng Zheng</u> (<i>University of Chinese Academy of Sciences, Beijing</i>), Joseph Luther Co-deposition of hole-selective contact and absorber for improving the processability of perovskite solar cells
17:00 - 18:30	Poster session - Auditorium
19:30 - 21:30	Social Dinner



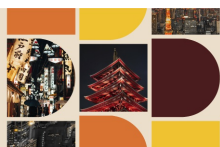
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January 23rd - Day 3 (Tuesday) 3	
08:55 - 09:00	Announcement of the day
	Session 2A - Auditorium Chair: Qing Shen
09:00 - 09:45 Auditorium-K1	<u>JAMES DURRANT</u> (<i>Department of Chemistry and Centre for Processable Electronics, Imperial College London, London, W12 0BZ, UK</i>) Exciton and charge dynamics in evaporated organic solar cells and photodetectors
09:45 - 10:15 Auditorium-I1	<u>Hideo Ohkita</u> (<i>Department of Polymer Chemistry, Kyoto University</i>), Hyung Do Kim Ternary Blends Improve Light Harvesting and Charge Transport in Polymer Solar Cells
10:15 - 10:45 Auditorium-I2	<u>Yasuhiro Tachibana</u> (<i>RMIT University</i>), Wakana Matsuda Correlation of charge carrier dynamics with the performance of metal halide perovskite solar cells
10:45 - 11:15	Coffee Break
	Session 2B - Auditorium Chair: Hideo Ohkita
11:15 - 11:45 Auditorium-I1	<u>Itaru Osaka</u> (<i>Graduate School of Advanced Science and Engineering, Hiroshima University</i>) Design and Synthesis of π -Conjugated Polymers for Efficient Organic Photovoltaics
11:45 - 12:15 Auditorium-I2	<u>Ji-Seon Kim</u> (<i>Department of Physics & Centre for Processable Electronics, Imperial College London, UK</i>) Key Molecular Perspectives for High-Performance Non-Fullerene Acceptor Organic Photovoltaics and Photodetectors
12:15 - 12:20 Auditorium-S1	<u>Taro Tanabe</u> (<i>Tokyo Chemical Industry</i>) Tokyo Chemical Industry - Industry Talk
12:20 - 12:50 Auditorium-I3	<u>Ana Flavia Nogueira</u> (<i>Laboratory of Nanotechnology and Solar Energy, Institute of Chemistry, University of Campinas – UNICAMP</i>) In situ experiments using Synchrotron radiation: an experience with halide perovskites
12:50 - 13:20 Auditorium-I4	<u>Udo Bach</u> (<i>ARC Centre of Excellence in Exciton Science, Department of Chemical and Biological Engineering, Monash University, Clayton, VIC, Australia</i>), Adam Surmiak Experimental High-Throughput Energy Materials Discovery
13:20 - 15:00	Lunch Break
	Session 2C1 - Library Room 301 Chair: Annamaria Petrozza
15:00 - 15:30 301-IS1	<u>José Manuel Marín Belouqui</u> (<i>Department of Physical Chemistry, University of Malaga, Blvd Louis Pasteur 31, 29010, Malaga, Spain</i>) Use of Transient Absorption Spectroscopy to Probe Unexpected Phenomena in Organic Electronics
15:30 - 15:45 301-O1	<u>Giacomo Giorgi</u> (<i>Department of Civil & Environmental Engineering (DICA), Via G. Duranti 93, I-06125 Perugia, The University of Perugia, Italy</i>), Maurizia Palummo, Koichi Yamashita Optoelectronic Features of 3D, mixed 2D/3D, 2D Hybrid and Full Inorganic Pb-less and Pb-free Perovskites: A Theoretical Standpoint
15:45 - 16:00 301-O2	<u>Chiara Frasca</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin</i>) A Doping Approach for Reducing the Off-Centring Effect of the Sn-Cation in the Lead-Free Perovskite Crystal Structure
16:00 - 16:15 301-O3	<u>Amanz Azaden</u> (<i>Department of Materials, Imperial College London, Exhibition Road, SW7 2AZ London, United Kingdom</i>), Robert Palgrave, Saif Haque Improving the Performance and Stability of Sn Perovskite Solar Cells by Compositional Engineering
16:15 - 16:30 301-O4	<u>Jesus Alberto Sanchez Diaz</u> (<i>Institute of Advanced Materials (INAM), Universitat Jaume I. Av. de Vicent Sos Baynat, s/n 12006, Castelló de la Plana, Spain</i>), Felipe A. Vinocour Pacheco, Wiktor Zuraw, Senol Oz, Ivan Mora Sero Upscalable and flexible Tin-Based Perovskites solar cells by Bladecoating technic
	Session 2C2 - Auditorium Chair: Ji-Seon Kim
15:00 - 15:30 Auditorium-IS1	<u>Satoshi Uchida</u> (<i>The University of Tokyo</i>), Hiroshi Segawa Nanoscopic Observation of Organometal Halide Perovskites with Superlattice
15:30 - 15:45 Auditorium-O1	<u>Chieh-Szu Huang</u> (<i>University of Cambridge, Dept. of Chemical Engineering and Biotechnology</i>) Amphiphilic polymer conetworks for organic solar cells
15:45 - 16:00 Auditorium-O2	<u>Yu-Cheng Tseng</u> (<i>National Taiwan University, Taiwan</i>), Aoto Kato, Francis (Ray) Lin, Tomoya Higashihara, Chu-Chen Chueh Using Donor-acceptor Conjugated Block Copolymers as Single-component Photoactive Materials or as Compatibilizers for High-performance Organic Photovoltaics
16:00 - 16:15 Auditorium-O3	<u>Chang Jia-Fu</u> (<i>Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan</i>), Chueh Chu-Chen Enhancing Power-to-Conversion Efficiency in All-Polymer Solar Cells through Morphology Control and Mixed Solvent Strategies
16:15 - 16:30 Auditorium-O4	<u>Hua Tang</u> (<i>King Abdullah University of Science and Technology (KAUST), KAUST Solar Center (KSC), Thuwal 23955, Saudi Arabia</i>) Strategies to Enhance the Commercial Viability of Organic Solar Cells
	Session 2C3 - Library Room 306 Chair: Ana Flavia Nogueira
15:00 - 15:30 306-IS1	<u>Teresa Ripolles</u> (<i>Instituto de Ciencia de Materiales, Universidad de Valencia (ICMUV), 46071 Valencia, Spain.</i>) Novel additives for controlling the stability of Sn-based perovskite for photovoltaic applications.
15:30 - 15:45 306-O1	<u>Dev Bahadur Khadka</u> (<i>Nagoya Institute of Technology</i>), Shinya Kato, Tetsuo Soga A High Open Circuit Voltage Bismuth Sulfide-Based Solar Cell with Nanowire Structure via Spin Coating
15:45 - 16:00 306-O2	<u>Chiung-Han Chen</u> (<i>Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan</i>), Chu-Chen Chueh Enhancing the Performance of Two-Dimensional Tin-Based Pure Red Perovskite Light-Emitting Diodes through the Synergistic Effect of Natural Antioxidants and Cyclic Molecular Additives
16:00 - 16:15 306-O3	<u>Kasparas Rakstys</u> (<i>Department of Organic Chemistry, Kaunas University of Technology, Radvilenu pl. 19, Kaunas 50254, Lithuania</i>) Molecular approaches towards highly efficient and stable perovskite solar cells
16:15 - 16:30 306-O4	<u>Anton Malko</u> (<i>The University of Texas at Dallas</i>) Ultra-low threshold lasing and light emitting diodes using mixed perovskite systems.
16:30 - 17:00	Break



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Session 2D - Auditorium

Chair: Shuzi Hayase

17:00 - 17:30

Auditorium-I1

Atsushi Wakamiya (*Institute for Chemical Research, Kyoto University*)

Interface Structure Design for Efficient Perovskite Solar Cells

17:30 - 18:15

Auditorium-K1

Hiroshi Segawa (*RCAST, The University of Tokyo*)

High Performance Perovskite Solar Cells and Modules: Current Situation and Future Prospects

18:15 - 18:30

Closing