



IPEROP-25

Perovskite and Organic
Photovoltaics and Optoelectronics
20th - 21st January, 2025
KYOTO · Japan



Asia-Pacific Conference on Perovskite, Organic Photovoltaics & Optoelectronics (IPEROP25)

Kyoto, Japan, 2025 January 19th - 21st

Conference organizers: Atsushi Wakamiya, Hideo Ohkita, Seigo Ito and Anita Ho-Baillie

Conference Program

January 19th - Day 1 (Sunday) 1	
17:30 - 19:00	Registration
17:30 - 19:00	Welcome drink
January 20th - Day 2 (Monday) 2	
09:00 - 09:50	Registration
09:50 - 10:00	Opening
Session 1A	
10:00 - 10:45	<u>Maksym Kovalenko</u> (<i>Empa, Swiss Federal Laboratories of Materials Science and Technology, Switzerland</i>)
1A-K1	The first decade of perovskite quantum dots (in our lab)
10:45 - 11:15	<u>Chu-Chen Chueh</u> (<i>National Taiwan University, Taiwan</i>)
1A-I1	Exploration of Two-Dimensional Perovskites for Optoelectronic Applications
11:15 - 11:45	Coffee Break
Session 1B	
11:45 - 12:15	<u>Qing Shen</u> (<i>The University of Electro-Communications</i>)
1B-I1	Interface Engineering and Charge Carrier Management of Quantum Dot Solar Cells
12:15 - 12:45	<u>Antonio Abate</u> (<i>Helmholtz-Zentrum Berlin</i>)
1B-I2	Lead-free perovskite solar cells
12:45 - 12:50	Industry talk
12:50 - 13:20	<u>Henk Bolink</u> (<i>Instituto de Ciencia Molecular, ICMol, Universidad de Valencia</i>)
1B-I3	Vacuum deposited single junction and tandem perovskite solar cells
13:20 - 14:20	Lunch Break
Session 1C	
14:20 - 14:50	<u>Zhijun Ning</u> (<i>School of Physical Science and Technology, ShanghaiTech University</i>)
1C-I1	Precise manipulation of perovskite film growth kinetic
14:50 - 15:20	<u>Vytautas Getautis</u> (<i>Department of Organic Chemistry, Kaunas University of Technology, Kaunas LT-50254, Lithuania.</i>)
1C-I2	Advanced Organic Molecules for Perovskite Solar Cells
15:20 - 15:30	Break
Session 1D1	
15:30 - 16:00	<u>Kyohei Nakano</u> (<i>RIKEN CEMS</i>)
1D1-IS1	Efficiency-Limiting Factors of Charge Generation Process in Organic Photovoltaics
16:00 - 16:15	<u>Sadok Bendkhil</u> (<i>Dracula Technologies, France, 26000 Valence</i>), Sadok Bendkhil
1D1-O1	Towards industrialization of organic photovoltaic cells and modules: From Lab Scale devices to Real Life Applications
16:15 - 16:30	<u>DONIA FREDI</u> (<i>Dracula Technologies, 3 rue Georges Auric, 26000 Valence</i>)
1D1-O2	High performing organic photovoltaic cells and modules for indoor application
16:30 - 16:45	<u>Krishnapressad Vijayan</u> (<i>Crystal Growth and Thin Film Laboratory, Bharathidasan University, Tiruchirappalli 620024, Tamil Nadu, India</i>), Ramesh Babu
1D1-O3	Low-cost Fabrication of Lead-free CsSnBr ₃ Based All-inorganic Perovskite Solar Cells; Numerical and experimental approach.
16:45 - 17:00	<u>Mayank Kedia</u> (<i>Institute of Energy Materials and Devices, Photovoltaics (IMD - 3), Forschungszentrum Jülich, Germany</i>), Michael Saliba
1D1-O4	Mitigating the amorphization of perovskite solar cells using alumina via atomic layer deposition
Session 1D2	
15:30 - 16:00	<u>Kazuhiro Marumoto</u> (<i>Department of Materials Science, Institute of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Ibaraki, 305-8573, Japan</i>)
1D2-IS1	Operando Electron Spin Resonance to Elucidate the Factors Governing Device Performance of Perovskite Solar Cells
16:00 - 16:15	<u>Minh Anh Truong</u> (<i>Institute for Chemical Research, Kyoto University</i>), Yuta Adachi, Shota Hira, Hiroshi Matsuda, Nobutaka Shioya, Tomoya Nakamura, Richard Murdey, Takeshi Hasegawa, Atsushi Wakamiya
1D2-O1	Development of Iso-Triazatruxene-based Hole-Collecting Monolayer Materials for Inverted Perovskite Solar Cells
16:15 - 16:30	<u>Mehrdad Najafi</u> (<i>TNO, High Tech Campus 21, 5656 AE Eindhoven, The Netherlands.</i>), Ryley Ratnasingham, Klaas Bakker, Anne Biezemans, Dorrit Roosen, Johannes Lambooj, Marcel Simor, Josue Hernandezjuarez, Wiljan Verhees, Remi Aninat, Casper Vankessel, Ilker Dogan, Hindrik Devries, Rene Janssen, Sjoerd Veenstra
1D2-O2	Towards the Commercialization of All-Perovskite Tandem Solar Modules
16:30 - 16:45	<u>Vitalii Bartosh</u> (<i>Laboratory of Inorganic Chemistry, Department of Chemistry and Applied Biosciences, ETH Zürich, Switzerland; Laboratory for Thin Films and Photovoltaics, Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland</i>), Gebhard J. Matt, Kostiantyn Sakhatskyi, Andrii Kanak, Yuliia Kominko, Lorenzo J. A Ferraresi, Sergii Yakunin, Maksym V. Kovalenko
1D2-O3	High-spatial-resolution X-ray imaging with directly integrated, melt-cast CsPbBr ₃ detectors
16:45 - 17:00	<u>Chia Hsun Nieh</u> (<i>National Taiwan University, Taiwan</i>), Chu Chen Chueh
1D2-O4	High Performance 2D Tin-based Perovskite Field-Effect Transistor with Porphyrin Like Additive Engineering



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Session 1D3

15:30 - 16:00	<u>Akinori Saeki</u> (<i>Osaka University</i>)
1D3-IS1	Automated Experimental Approach to Lead-Free Solar Cells and Lead Halide Perovskite Solar Cells
16:00 - 16:15	<u>Mantas Marčinskas</u> (<i>Department of Organic Chemistry, Kaunas University of Technology, Radvilenu pl. 19, Kaunas 50254, Lithuania</i>),
1D3-O1	Gabija Linkaitė, Skirmantas Musteikis, Tadas Malinauskas, Vytautas Getautis 2PACz SAM Alternatives: Synthesis, Application and Challenges
16:15 - 16:30	<u>Deimante Kriščiūnė</u> (<i>Department of Organic Chemistry, Kaunas University of Technology, Kaunas, Lithuania</i>), Yi Yang, Cheng Liu, Kasparas
1D3-O2	Rakstys, Mercuri Kanatzidis, Edward Sargent, Vytautas Getautis Enamine-based Self-assembling Hole Transporting Monolayers for Perovskite Solar Cells
16:30 - 16:45	<u>Shengnan Zuo</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>)
1D3-O3	Tailored Colloidal Dynamics for High-Performance and Stable DMSO-Free Tin Perovskite Solar Cells
16:45 - 17:00	<u>Zijing Dong</u> (<i>Department of Chemical and Biomolecular Engineering, National University of Singapore</i>), Xiao Guo, Yi Hou
1D3-O4	Thermostable Perovskite Solar Cells Enabling Operational Lifetime over 25 Years
17:30 - 18:30	Poster session
19:30 - 22:00	Social dinner



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January 21st - Day 3 (Tuesday) 3

09:50 - 10:00	Announcement of the day
	Session 2A
10:00 - 10:45 2A-K1	<u>Thuc-Quyen Nguyen</u> (<i>Center for Polymers and Organic Solids and Department of Chemistry and Biochemistry University of California, Santa Barbara</i>) Organic Solar Cells: Current Progress and Challenges
10:45 - 11:15 2A-I1	<u>Bumjoon Kim</u> (<i>Korea Advanced Institute of Science and Technology (KAIST)</i>) Design of Electroactive Polymers with High Mechanical Properties for Intrinsically-Stretchable Polymer Solar Cells
11:15 - 11:45	Coffee Break
	Session 2B
11:45 - 12:15 2B-I1	<u>Kenjiro Fukuda</u> (<i>RIKEN CEMS</i>), Takao Someya Ultrathin and Stretchable Organic Photovoltaics for Emerging Applications
12:15 - 12:45 2B-I2	<u>Xiaozhang Zhu</u> (<i>Beijing National Laboratory for Molecular Sciences, Key Laboratory of Organic Solids, Institute of Chemistry, Chinese Academy of Sciences, 100190 Beijing, P. R. China.</i>) Near-Infrared Organic Photovoltaic Materials and Devices
12:45 - 12:50	Industry talk
12:50 - 13:20 2B-I3	<u>Michael Saliba</u> (<i>Institute for Photovoltaics (ipv), University of Stuttgart</i>) Wide Bandgap Perovskites and Solvent Systems
13:20 - 14:20	Lunch Break
	Session 2C
14:20 - 14:50 2C-I1	<u>Hongxia Wang</u> (<i>School of Chemistry and Physics, Queensland University of Technology, Brisbane, Australia</i>) Green Processing of Metal Halide Perovskite Materials for Applications in Solar Cells
14:50 - 15:20 2C-I2	<u>Yi Hou</u> (<i>Solar Energy Research Institute of Singapore (SERIS), National University of Singapore</i>) Unlocking the Potential of Perovskite Solar Cells: From Single-Junction to Tandem
15:20 - 15:30	Break
	Session 1D1
15:30 - 16:00 1D1-IS1	<u>Satoshi Uchida</u> (<i>The University of Tokyo</i>), Hiroshi Segawa Visualization of capacitance inside the perovskite solar cells
16:00 - 16:15 1D1-O1	<u>Robert Westbrook</u> (<i>Department of Chemistry, University of Washington, Seattle, WA, 98195-1700, USA</i>) Local Background Hole Density Drives Non-Radiative Recombination in Tin Halide Perovskites
16:15 - 16:30 1D1-O2	<u>Chun-Chao Chen</u> (<i>Shanghai Jiao Tong University</i>) Bottom Interfacial Engineering for Inverted Perovskite Solar Cells with above 26% efficiency
16:30 - 16:45 1D1-O3	<u>Xiao Guo</u> (<i>Department of Chemical and Biomolecular Engineering, National University of Singapore</i>), Zhenrong Jia, Zijing Dong, Yi Hou Suppressing Halide Phase Segregation in Wide-Bandgap Perovskite for Perovskite-Organic Tandem Solar Cells
16:45 - 17:00 1D1-O4	<u>Ioannis Kouroudis</u> (<i>Department of Electrical and Computer Engineering, Technical University of Munich, 85748 Garching bei Munich, Germany</i>), Kenedy Tabah Tanko, Masoud Karimipour, Aziz Ben Ali, D. Kishore Kumar, VEDIAPPAN Sudhakar, Ritesh Kant Gupta, Iris Visoly-Fisher,, Monica Lira-Cantu, Alessio Gagliardi AI predicted device degradation paves the way for further industrialization of PV technologies
	Session 1D2
15:30 - 16:00 1D2-IS1	<u>Manabu Sugimoto</u> (<i>Faculty of Advanced Science and Technology, Kumamoto University</i>) A Hybrid Computational Approach toward Optimization of Perovskite Solar Cells
16:00 - 16:15 1D2-O1	<u>Zhen Wang</u> (<i>Key Laboratory of Flexible Electronics (KLOFE), Institute of Advanced Materials (IAM) & School of Flexible Electronics (Future Technologies), Nanjing Tech University (NanjingTech), 30 South Puzhu Road, Nanjing 211816, China</i>) Nucleophilic Substitution Reactions-regulated Lead Polyhalides Transformation to Suppress Defects in Perovskite Solar Cells
16:15 - 16:30 1D2-O2	<u>Huan Bi</u> (<i>i-Powered Energy System Research Center (i-PERC), The University of Electro-Communications</i>), Qing Shen, Shuzi Hayase The next direction of high-efficiency perovskite solar cells: all-non-toxic Sn-perovskite tandem solar cells
16:30 - 16:45 1D2-O3	<u>Hao-Wei Yu</u> (<i>National Taiwan University, Taiwan</i>), Ming-Hsuan Yu, Chu-Chen Chueh Diketopyrrolopyrrole-Dioxo-Benzodithiophene-Based Multi-Functional Conjugated Polymers for Perovskite Solar Cells
16:45 - 17:00 1D2-O4	<u>Amit Kessel</u> (<i>Department of Materials Science and Engineering, Monash University, Clayton, Victoria, 3800 Australia</i>), Juan Benitez Rodriguez, Jacek Jasieniak Semi-Opaque Perovskite Solar Cells for Color-Neutral See-Through Photovoltaics
	Session 1D3
15:30 - 16:00	
16:00 - 16:15 1D3-O1	<u>Anastasiia Sakahtska</u> (<i>Laboratory of Inorganic Chemistry, Department of Chemistry and Applied Biosciences, ETH Zürich, Switzerland; Laboratory for Transport at Nanoscale Interfaces, Empa - Swiss Federal Laboratories for Materials Science and Technology, CH-8600 Dübendorf, Switzerland</i>), Kostiantyn Sakhatskyi, Andrii Kanak, Gebhard Matt, Sergii Yakunin, Maksym Kovalenko High charge carrier mobility in CsPbBr ₃ single crystals investigated by Time of Flight technique
16:15 - 16:30 1D3-O2	<u>Soumya Sundar Parui</u> (<i>Department of Physics, Sardar Vallabhbhai National Institute of Technology, Ichchhanath, Surat, Gujarat 395007, India</i>), Krishnapressad Vijayan, Nithin Xavier, R Ramesh Babu, Vipul Kheraj Enhanced Crystallinity and Performance of CsPbBr ₃ Perovskite Solar Cells Via Thiourea-Assisted One-Step Spin Deposition Technique
16:30 - 16:45 1D3-O3	<u>Kostiantyn Sakhatskyi</u> (<i>ETH Zurich, Laboratory of Inorganic Chemistry, Department of Chemistry & Applied Biosciences, Vladimir-Prelog-Weg, 1, Zürich, CH</i>), Anastasiia Sakhatska, Bekir Turedi, Gebhard Matt, Vitalii Bartosh, Frank Krumeich, Federico Geser, Alberto Stabilini, Małgorzata Kasprzak, Charlie Mc Monagle, Dmitry Chernyshov, Sergii Yakunin, Maksym Kovalenko Solution-grown perovskite single crystalline radiovoltaic cells with 10% power conversion efficiency



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16:45 - 17:00 1D3-04	<u>JINXI CHEN</u> (<i>National University of Singapore, Singapore</i>), YI HOU Elucidating and Resolving the Bonding-Degradation Trade-off at Heterointerfaces for Increased Efficiency and Durability of Perovskite Solar Cells
17:00 - 17:10	Break
	Session 2D
17:10 - 17:40 2D-I1	<u>Tsutomu Miyasaka</u> (<i>Toin University of Yokohama</i>) Interface engineering for high voltage lead-based and lead-free perovskite solar cells
17:40 - 18:25 2D-K1	<u>Shuzi Hayase</u> (<i>i-Powered Energy System Research Center (i-PERC), The University of Electro-Communications</i>) Tin-based Perovskite Solar Cells and All-perovskite Tandem Solar Cells
18:25 - 18:35	Closing ceremony and awards