

Sustainable Metal-halide perovskites for photovoltaics, optoelectronics and photonics (Sus-MHP)

València, Spain, 2022 December 12th - 13th

Conference organizers: Juan P. Martínez Pastor, Teresa S. Ripolles and Hui-Seon Kim

Conference Program

December 12th - Day 1 (Monday) 1	
07:45 - 08:45	Registration
08:45 - 09:00	Opening
Session 1A	
09:00 - 09:30 1A-11	<u>Antonio Abate</u> (Helmholtz-Zentrum Berlin) Lead-Free Perovskite Solar Cells
09:30 - 10:00 1A-12	<u>Iván Mora-Seró</u> (Institute of Advanced Materials (INAM), Universitat Jaume I (UJI), Avenida de Vicent Sos Baynat, s/n, 12071 Castelló de la Plana, Castellón, Spain.) Use of Additives as Successful Methodology to Improve Performance and Stability of Sn-based Perovskite Solar Cells, LEDs and Lasers
10:00 - 10:30 1A-13	<u>Laurent PEDESSEAU</u> (Univ Rennes, INSA Rennes, CNRS, Institut FOTON - UMR 6082, F-35000 Rennes, France), Pingping JIANG, Boubacar TRAORE, Mikael KEPENEKIAN, Claudine KATAN, George VOLONAKIS, Jacky EVEN Surfaces/interfaces in atomic-scale semiconductor devices: structural and electronic properties of Pb-free perovskites and charge transport materials.
10:30 - 11:00	Coffee Break
Session 1B	
11:00 - 11:30 1B-11	<u>Michael Saliba</u> (Institute for Photovoltaics (ipv), University of Stuttgart, Pfaffenwaldring 47, 70569, Stuttgart, Germany) The Versatility of Perovskite Materials
11:30 - 12:00 1B-12	<u>Maksym Kovalenko</u> (ETH Zurich, Laboratory of Inorganic Chemistry, Department of Chemistry & Applied Biosciences, Vladimir-Prelog-Weg, 1, Zürich, CH) Highly luminescent lead halide perovskite nanocrystals: revisiting their synthesis and tailoring their surface chemistry
12:00 - 12:30 1B-13	<u>Sandy Sánchez</u> (École Polytechnique Fédérale de Lausanne (EPFL)) Photonic Processing for Perovskite Halide Thin-Film Defect-Tolerant Crystal Growth
12:30 - 13:00 1B-14	<u>Senol Öz</u> (Saule Technologies, Dunska 11, Wrocław, Poland), Felipe A. Vinocour-Pacheco, Wiktor Zuraw, Jesus Sanchez-Diaz, Ivan Mora-Sero Industry compatible upscaling approaches for Sn-based flexible Perovskite solar cells and modules
13:00 - 15:00	Lunch Break
Session 1C	
15:00 - 15:15 1C-01	<u>Alexander Wyn Stewart</u> (IPVF, Institut Photovoltaïque d'Île-de-France, 18 Boulevard Thomas Gobert, 91120 Palaiseau, France) Electronic Doping in Halide Perovskite Solar Cells
15:15 - 15:30 1C-02	<u>Ganghong Min</u> (Department of Chemistry and Centre for Processable Electronics, Molecular Sciences Research Hub, Imperial College London, London W12 0BZ, UK), Meihuizi Jiang, Robert Westbrook, Margherita Taddei, Ang Li, Thomas Webb, David Ginger, Thomas Macdonald, Saif Haque The Effects of Antisolvents for the Growth of 2D/3D Sn Perovskite Solar Cell
15:30 - 15:45 1C-03	<u>Clara Aranda</u> (Institute of Advanced Materials (INAM), Universitat Jaume I, Avinguda de Vicent Sos Baynat, s/n, Castelló de la Plana, Spain) Modulating Ionic Migration in Perovskite Solar Cells: The Role of Alkali Elements
15:45 - 16:00 1C-04	<u>Robert Westbrook</u> (Department of Chemistry, University of Washington, Seattle, WA, 98195 USA), Margherita Taddei, Rajiv Giridharagopal, Meihuizi Jiang, Shaun Gallagher, Saif Haque, David Ginger Mapping Photoluminescence Heterogeneity in Tin Halide Perovskite Solar Cells
16:00 - 16:15 1C-05	<u>Rafael Sánchez Sánchez</u> (Institute of Advanced Materials (INAM), Universitat Jaume I, Avinguda de Vicent Sos Baynat, s/n, Castelló de la Plana, Spain), Alexis Villanueva-Antolí, Iván Mora-Seró, Juan Bisquert Perovskite Light-emitting Diodes: A Bright Journey Full of Baffling Complexities
16:15 - 16:30 1C-06	<u>Raul Ivan Sanchez Alarcon</u> (UMDO Instituto de Ciencia de los Materiales- Universidad de Valencia), Omar Eduardo Solís Luna, María Cristina Momblona Rincon, Teresa Ripolles Sanchis, Rafael Abargues, Pablo Pérez Boix, Vladimir Chirvony, Juan Martínez Pastor Lead-free orange to red light emitters based on two-dimensional TEA ₂ SnX ₄ micro and nanocrystals
16:30 - 16:45 1C-07	<u>Dmitry Dirin</u> (ETH - Swiss Federal Institute of Technology Zurich, Department of Mechanical and Process Engineering), Anna Vivani, Marios Zacharias, Ihor Cherniukh, Sergii Yakunin, Federica Bertolotti, Marcel Aebli, Richard Schaller, Norberto Masciochi, Antonietta Guagliardi, Laurent Pedesseau, Jacky Even, Maksym Kovalenko, Maryna Bodnarchuk Intrinsic formamidinium tin iodide nanocrystals by suppressing the Sn(IV) impurities
17:00 - 19:00	Poster Session
20:30 - 22:30	Social Dinner

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December 13th - Day 2 (Tuesday) 2	
Session 2A	
09:00 - 09:30 2A-I1	<u>Pablo P. Boix</u> (<i>Institut de Ciència dels Materials (ICMUV), Universitat de València, c Catedratic Beltran 2, 46980 Paterna, Valencia, Spain</i>) Sustainable approaches for multiscale perovskite structures
09:30 - 10:00 2A-I2	<u>Blas Garrido</u> (<i>Department of Electronic and Biomedical Engineering, University of Barcelona</i>), Giovanni Vescio, Gayathri Mathiazhagan, Sergi Hernández, Sergio González, Joshua Diago, Albert Cirera Progress in Inkjet Printing of Lead-Free Perovskites for Optoelectronics
10:00 - 10:30 2A-I3	<u>Cristina Momblona</u> (<i>Instituto de Nanociencia y Materiales de Aragón (INMA), CSIC. Universidad de Zaragoza</i>) From lab-scale co-evaporated lead-free perovskite to commercial design and cost analysis of lead-based panel manufacturing
10:30 - 11:00	Coffee Break
Session 2B	
11:00 - 11:30 2B-I1	<u>Hernán Miquez</u> (<i>Instituto de Ciencia de Materiales de Sevilla (Consejo Superior de Investigaciones Científicas-Universidad de Sevilla), C/Américo Vespucio 49, 41092 Sevilla, España</i>) Optoelectronic devices based on ligand-free lead halide quantum dots embedded in porous matrices
11:30 - 12:00 2B-I2	<u>Matteo Degani</u> (<i>University of Pavia</i>) 2D/3D Perovskite Interfaces, role of the 2D perovskite cation
12:00 - 12:30 2B-I3	<u>Marek Oszajca</u> (<i>Avantama AG, CH</i>) Lead halide perovskites - Perfect candidates for RoHS compliant display applications
12:30 - 12:45 2B-O1	<u>Felipe A. Vinocour-Pacheco</u> (<i>Saule Research Institute, Dunska 11, Wroclaw 54-427, Poland</i>), Wiktor Zuraw, Jesús Sanchez-Diaz, Iván Mora-Seró, Senol Öz Upscaling of Tin-based Perovskite Solar Cells from Laboratory to Industry
12:45 - 13:00 2B-O2	Anjana Wijesekara, Yisong Han, David Walker, Steven Huband, <u>Ross Hatton</u> (<i>Department of Chemistry, University of Warwick, CV4 7AL, Coventry, United Kingdom.</i>) Unencapsulated organo-tin perovskite photovoltaics with high stability in ambient air using a semi-metal capped copper top electrode
13:00 - 15:00	Lunch Break
Session 2C	
15:00 - 15:15 2C-O1	G. Garcia-Arellano, G. Trippé-Allard, E. Deleporte, F. Bernardot, C. Testelin, <u>M. Chamarro</u> (<i>Sorbonne Université, CNRS, Institut des NanoSciences de Paris, 4 place Jussieu, F-75005 Paris, France</i>) The coherent spin dynamics in perovskite films: Advantages of Sn--based perovskites against Pb--based perovskites.
15:15 - 15:30 2C-O2	<u>Isaac Suárez</u> (<i>Institut de Ciències de Materials (ICMUV)</i>), Juan P. Martínez-Pastor, Marek F. Oszajca, Norman A. Lüchinger, Brian Graves, Saïd Agouram, Carles Milián, Albert Ferrando Cs ₂ Ni ₆ nanoparticles: a lead-free perovskite material with outstanding nonlinear properties
15:30 - 15:45 2C-O3	<u>Vladimir Chirvony</u> (<i>UMDO Instituto de Ciencia de los Materiales- Universidad de Valencia</i>), Isaac Suarez, Giovanni Vescio, Blas Carrido, Albert Cirera, Dmitry Dirin, Maksym Kovalenko, Guillermo Muñoz-Matutano, Juan Martínez-Pastor Photophysics of Sn-based 2D Perovskite Films Inkjet-Printed on a Flexible Substrate: Double Excitonic Band and Amplified Spontaneous Emission
15:45 - 16:00 2C-O4	<u>Jaume Noguera-Gómez</u> (<i>Institut de Ciència dels Materials (ICMUV), Universitat de València, c Catedratic Beltran 2, 46980 Paterna, Valencia, Spain</i>), Ismael Fernández-Guillen, Pablo F. Betancur, Vladimir S. Chirvony, Pablo P. Boix, Rafael Abargues Towards an in-situ crystallization method for tunable and scalable perovskite nanoparticle thin-films.
16:00 - 16:15 2C-O5	Thais C. A. da Silva, Carolina Fernández-Saiz, Omar E. Solis, Silver-Hamill Turren-Cruz, Pablo P. Boix, Rafael S. Sánchez, Iván Mora-Seró, <u>Beatriz Julián-López</u> (<i>Institute of Advanced Materials (INAM), Universitat Jaume I, Avinguda de Vicent Sos Baynat, s/n, Castelló de la Plana, Spain</i>) Sustainable routes to synthesize metal halide perovskites by microwave radiation
16:15 - 16:30 2C-O6	<u>S. González Torres</u> (<i>MIND-IN2UB, Department of Electronics and Biomedical Engineering, Universitat de Barcelona, Martí i Franquès 1, 08028 Barcelona (Spain)</i>), G. Mathiazhagan, G. Vescio, J.D. Forero, M. Oszajca, N. Lüchinger, M. Rossier, A. Hauser, F. Linardi, S. Hernández, A. Cirera, B. Garrido Comparison of performance of inkjet-printed and spin-coated SnO ₂ /NiO heterojunctions
16:30 - 16:45 2C-O7	<u>G. Vescio</u> (<i>MIND, Department of Electronics and Biomedical Engineering, Universitat de Barcelona, Martí i Franquès 1, E-08028, Barcelona, Spain</i>), D. Dirin, J. Sanchez-Diaz, S. Hernández, A. Cirera, I. Mora-Seró, M. Kovalenko, B. Garrido 2D Lead-Free Inkjet-Printed Halide Perovskite Red-emitting LEDs on Rigid and Flexible Substrates
16:45 - 17:00 2C-O8	<u>Gayathri Mathiazhagan</u> (<i>MIND, Department of Electronics and Biomedical Engineering, Universitat de Barcelona, Martí i Franquès 1, E-08028, Barcelona, Spain</i>), Sergio González-Torres, Jesus Sanchez-Diaz, Giovanni Vescio, Joan Cano, Andrés Gualdrón-Reyes, Marek Oszajca, Alina Hauser, Sergi Hernández, Ivan Mora-Seró, Albert Cirera, Blas Garrido Investigating Ambient Air Processed Inkjet-Printed Electron Blocking Layer (EBL) and Nanocrystalline CsPbBr ₃ Emission Layer for Perovskite Based LEDs
17:00 - 17:15	Closing