

## International Conference on Perovskite Thin Film Photovoltaics and Perovskite Photonics and Optoelectronics (NIPHO23)

Pavia, Italy, 2023 May 15<sup>th</sup> - 16<sup>th</sup>

Conference organizers: Giulia Grancini, Mónica Lira-Cantú and Silvia Colella

### Conference Program

May 15 <sup>th</sup> - Day 1 (Monday) 1	
09:00 - 10:00	<b>Registration</b>
10:00 - 10:15	<b>Opening</b>
<b>Session 1.1 - Online talk</b> Chair: Giulia Grancini	
10:15 - 11:00 talk-K1	<u>Michael Graetzel</u> ( <i>Microcity, Ecole Polytechnique Federale de Lausanne (EPFL)</i> ) Molecular Photovoltaics and the Rise of Perovskite Solar Cells
11:00 - 11:45	<b>Coffee Break</b>
<b>Session 1.2</b> Chair: Silvia Colella	
11:45 - 12:15 1.2-11	<u>Sam Stranks</u> ( <i>University of Cambridge, Dept. of Chemical Engineering and Biotechnology</i> ) In operando imaging of perovskite optoelectronic devices
12:15 - 12:45 1.2-12	<u>Michele Saba</u> ( <i>Dipartimento di Fisica, Università di Cagliari, Monserrato I-09042, Italy</i> ), Daniela Marongiu, Angelica Simbula, Francesco Quochi, Andrea Mura, Giovanni Bongiovanni From Excitons to Polarons: the Photophysics of Lead Halide Perovskites
12:45 - 13:15 1.2-13	<u>Maria Antonietta Loi</u> ( <i>Photophysics and OptoElectronics Group, Zernike Institute for Advanced Materials, University of Groningen</i> ) Carbazole Based Self-Assembled Monolayer as Hole Transport Layer for Efficient and stable Sn/Pb Perovskite Solar Cells
13:15 - 15:00	<b>Lunch</b>
<b>Session 1.3</b> Chair: Mónica Lira-Cantú	
15:00 - 15:15 1.3-01	<u>Federica Aiello</u> ( <i>Consiglio Nazionale delle Ricerche (CNR), Istituto per i Processi Chimico-Fisici (IPCF), Pisa</i> ), Federica Balzano, Gloria Uccello Barretta NMR Spectroscopy as a Powerful Tool for Optimizing Perovskite Stabilization Processes
15:15 - 15:30 1.3-02	<u>Jae Sung Yun</u> ( <i>Advanced Technology Institute, Department of Electrical and Electronic Engineering, University of Surrey, Guildford, Surrey GU2 7XH, UK</i> ) Microstructural Inhomogeneity and Defect Sites in Wide Bandgap Mixed Perovskites: A Scanning Probe Microscopy Study
15:30 - 15:45 1.3-03	<u>Angelica Simbula</u> ( <i>Dipartimento di Fisica, Università degli Studi di Cagliari</i> ), Luyan Wu, Federico Pitzalis, Riccardo Pau, Selene Matta, Daniela Marongiu, Francesco Quochi, Andrea Mura, Michele Saba, Giovanni Bongiovanni Exciton Dissociation in Single Crystal 2D Hybrid Perovskites
15:45 - 16:00 1.3-04	<u>Antonella Giuri</u> ( <i>CNR NANOTEC - Institute of Nanotechnology, c/o Campus Ecotekne, University of Salento, Via Monteroni, Lecce, 73100 Italy</i> ), Nicholas Rolston, Silvia Colella, Carola Esposito Corcione, Aurora Rizzo Perovskite Thin Film Formation from Solution: Inside the Crystallization Process mediated by a Biopolymer
16:00 - 16:15 1.3-05	Parnian Ferdowsi, <u>Gianluca Bravetti</u> ( <i>University of Fribourg, Adolphe Merkle Institute, CH</i> ), Moritz C. Schmidt, Efrain Ochoa-Martinez, Shanti Bijani, Aurora Rizzo, Silvia Colella, Ullrich Steiner, Bruno Ehrler, Jovana V. Milić Host-guest complexation in perovskite solar cells
16:15 - 16:30 1.3-06	<u>Giuseppe Nasti</u> ( <i>Department of Chemical, Materials and Production Engineering, University of Naples Federico II, Naples, Italy</i> ), Mahmoud Hussein Aldamasy, Antonio Abate 4-tert-butylpyridine for DMSO-free Tin Perovskite
16:30 - 18:30	<b>Poster session</b>
20:30 - 22:30	<b>Social Dinner</b>

<b>May 16th - Day 2 (Tuesday) 2</b>	
09:00 - 10:00	<b>Registration</b>
	<b>Session 2.1</b> Chair: Giulia Grancini
10:00 - 10:30 2.1-11	<u>Iván Mora-Seró</u> ( <i>Institute of Advanced Materials (INAM), Universitat Jaume I, Av. Sos Baynat, s/n, 12071 Castelló, Spain</i> ) Pb-free and Nanocrystal Perovskites for the Development of Solar Cells and LEDs
10:30 - 11:00 2.1-12	<u>Antonio Agresti</u> ( <i>C.H.O.S.E. (Center for Hybrid and Organic Solar Energy), Electronic Engineering Department, University of Rome Tor Vergata, Via del Politecnico 1, 00133, Rome, Italy</i> ) Fostering the development of perovskite-based photovoltaic by the use of 2D materials: a winning approach in an industrially relevant environment
11:00 - 11:45	<b>Coffee Break</b>
	<b>Session 2.2</b> Chair: Silvia Colella
11:45 - 12:15 2.2-11	<u>Sonia R. Raga</u> ( <i>Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, Campus UAB, Bellaterra, 08193 Barcelona, Catalonia, Spain</i> ), Siqi Deng, Boer Tan, Anthony S. R. Chesman, Jiangfeng Lu, David P. McMeeKin, Qingdong Ou, Andrew D. Scully, Kevin J. Rietwyk, Anton Weissbach, Boya Zhao, Nicolas H. Voelcker, Yi-Bing Cheng, Xiongfeng Lin, Udo Bach Back-Contact Electrode Fabrication via Scalable Photolithography and Potential Uses for in-situ Characterization of Perovskite Solar Cells
12:15 - 12:45 2.2-12	<u>Annalisa Bruno</u> ( <i>Energy Research Institute @ NTU, Nanyang Technological University, Research Techno Plaza, X-Frontier Block, Level 5, 50 Nanyang Drive, 637553, Singapore</i> ) Customizing Co-Evaporated Perovskites for Optoelectronic Devices
12:45 - 13:15 2.2-13	<u>Shuxia Tao</u> ( <i>1Materials Simulation and Modelling, Department of Applied Physics, Eindhoven University of Technology, 5600 MB Eindhoven, The Netherlands</i> ) Atomistic simulations of 3D/2D halide perovskites: the physics of defects, chirality and the chemistry of nucleation and growth
13:15 - 15:00	<b>Lunch</b>
	<b>Session 2.3</b> Chair: Mónica Lira-Cantú
15:00 - 15:15 2.3-01	<u>Kasparas Rakstys</u> ( <i>Kaunas University of Technology, Kaunas, 50254, Lithuania</i> ) Molecular Engineering of Interfacial Passivation Materials to Afford Perovskite Solar Cells with Improved Efficiency and Stability
15:15 - 15:30 2.3-02	<u>Silvia Milita</u> ( <i>Dipartimento di Scienza e Alta Tecnologia &amp; To.Sca.Lab., Università dell'Insubria, via Valleggio11, 22100 Como, Italy</i> ) 1-D pseudoperovskite thin films: structure, morphology and long term stability
15:30 - 15:45 2.3-03	<u>Adriana Pietropaolo</u> ( <i>University of Catanzaro</i> ) Atomistic simulations of low-dimensional chiral hybrid perovskites
15:45 - 16:00 2.3-04	<u>Sara Covella</u> ( <i>Università degli studi di Bari "Aldo Moro"</i> ), Alberto Perrotta, Francesca Russo, Fabio Palumbo, Antonella Milella, Vincenza Armenise, Francesco Fracassi, Aurora Rizzo, Silvia Colella, Andrea Listorti Plasma Processes on Metal Halide Perovskite Interfaces for Photovoltaic Applications
16:00 - 16:15 2.3-05	<u>Filippo Tavormina</u> ( <i>Dipartimento di Scienza e Alta Tecnologia &amp; To.Sca.Lab., Università dell'Insubria, via Valleggio11, 22100 Como, Italy</i> ), Norberto Masciocchi, Eleonora Quadrivi, Paolo Biagini, Riccardo Po', Antonietta Guagliardi GIWAXS characterization of 2D/3D perovskites films prepared in the presence of organic additives and green solvents
16:15 - 16:30	<b>Closing</b>

**Poster Contribution**

024	<u>Anna David</u> ( <i>Laboratory of Organic Electronics, Department of Science and Technology, Linköping University</i> ), Xianjie Liu Studies of nanoscale multivalent(?) lead-free halide double perovskites
025	<u>Qi Wang</u> ( <i>Electron Spectroscopy and Nanoscopy, Istituto Italiano di Tecnologia, 16163 Genova, Italy</i> ), Sirous Khabbazabkenar, Rosaria Brescia, Giorgio Divitini In situ heating TEM observation of 0D perovskite phase transformation
026	<u>Luyan Wu</u> ( <i>Dipartimento di Fisica, Università degli Studi di Cagliari, Monserrato (CA), I-09042, Italy</i> ), Saba Michele, Antonio Abate, Guixiang Li, Hao Zhang, Hans Köbler, Daniela Marongiu Surface Dimensionality Reduction via Forming Dion-Jacobson Phase Enhancing Humidity Stability of Inorganic Perovskite Solar Cells
027	<u>Vanira Trifiletti</u> ( <i>Department of Materials Science and Solar Energy Research Center (MIB-SOLAR), University of Milano-Bicocca, Via Cozzi 55, I-20125, Milan, Italy</i> ), Amin Husien, Elisa Fabbretti, Chiara Boldrini, Giorgio Tseberlidis, Camilla Marchini, Eleonora Quadrivi, Paolo Biagini, Riccardo Po', Simona Binetti Chalcogenide-based hole transport material for stable perovskite solar cells
028	<u>Francesca Russo</u> ( <i>Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", Via Orabona 4, 70126 Bari, Italy</i> ), Elisabetta Fanizza, Francesco Fracassi, Aurora Rizzo, Andrea Listorti, Silvia Colella Stabilizing the black-Phase of CsPbI <sub>3</sub> Perovskite by crystallization kinetics modulation.
029	Felix Utama Kosasih, <u>Giorgio Divitini</u> ( <i>Department of Materials Science &amp; Metallurgy, University of Cambridge</i> ), Jordi Ferrer Orri, Elizabeth M Tennyson, Gunnar Kusch, Rachel A Oliver, Samuel D Stranks, Caterina Ducati Optical signal from FIB-prepared cross-sections of perovskite thin films