

Conference Chairs: Henk Bolink and David Cahen

Conference Program

| 1st March – Day 1 (Wednesday) | |
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| 07.45 | Registration Opened |
| 08.45 | Opening |
| General Session G1 Room: Salón de Actos A | |
| Chair: Henk Bolink | |
| 09.00 | <u>Nazeeruddin, Mohammad</u> (Ecole Polytechnique Fédérale de Lausanne) |
| G1.I1 | Perovskite Solar Cells: A New Paradigm in Energy Sector |
| 09.30 | <u>Herz, Laura</u> (University of Oxford) |
| G1.I2 | Hybrid Metal Halide Perovskites: Optoelectronic Properties and Stability |
| 10.00 | <u>Hodes, Gary</u> (Weizmann Institute of Science) |
| G1.I3 | Stability of Pb- and Sn-based Halide Perovskite PV Cells |
| 10.30 | Sponsor talk |
| 10.45 | Coffee break |
| Session A1 Room: Salón de Actos A | |
| Chair: Germà Garcia Belmonte | |
| 11.15 | <u>Tarasov, Alexey</u> (Lomonosov Moscow State University) |
| A1.O1 | A New Fabrication Strategy of Perovskite Films for Next Generation Solar Cells Using Melts of Novel Precursors |
| 11.30 | <u>Ávila, Jorge</u> (Universitat de València) |
| A1.O2 | Efficient Wide Band Gap Hybrid Perovskites for Monolithic Tandem Solar Cells |
| 11.45 | <u>Grozema, Ferdinand</u> (Delft University of Technology) |
| A1.O3 | Multilayer 2D Perovskites with Specific Functionality in the Organic Component |
| 12.00 | <u>Giesbrecht, Nadja</u> (Ludwig Maximilian University of Munich) |
| A1.O4 | Tuneable MAPbI ₃ Perovskite Crystal Alignment and their Impact in Optoelectronic Applications |
| 12.15 | <u>Kazes, Miri</u> (The Weizmann Institute) |
| A1.O5 | Nucleation, Growth and Structural Transformations of Perovskite Nanocrystals |
| 12.30 | <u>Zohar, Arava</u> (Weizmann institute) |
| A1.O6 | Iodine-Doping Effects on MAPbI ₃ Charge Transport |
| 12.45 | <u>Wang, Feng</u> (Linköping University) |
| A1.O7 | Benzylamine Modification for Air-Stable and High-Efficiency Perovskite Solar Cells |

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| Session B1 | |
| Room: Salón de Grados G | |
| Chair: Satoshi Ushida | |
| 11.15 B1.O1 | <u>Hutter, Eline</u> (Delft University of Technology) Charge Transfer from Methylammonium Lead Iodide Perovskite to Organic Transport Materials: Efficiencies, Transfer Rates and Interfacial Recombination |
| 11.30 B1.O2 | <u>Levine, Igal</u> (Weizmann Institute of Science) Mobility-lifetime Products in MAPbI ₃ Films |
| 11.45 B1.O3 | <u>Wolff, Christian M.</u> (Universität Potsdam) Reduced Recombination for High-Open-Circuit Voltages in Perovskite Solar Cells |
| 12.00 B1.O4 | <u>Juan A. Anta</u> (Universidad Pablo de Olavide) Whereabouts of recombination in Perovskite Solar Cells |
| 12.15 B1.O5 | <u>Pockett, Adam</u> (Swansea University) Understanding Recombination Processes in Perovskite Solar Cells Using Frequency and Time Domain Measurements to Deconvolve Electronic and Ionic Interactions |
| 12.30 B1.O6 | <u>Bernard, Geffroy</u> (Université Paris-Saclay) Direct Experimental Evidence of Ionic Migration in Halide Perovskite Films by GDOES Measurements |
| 12.45 B1.O7 | <u>Knapp, Evelyne</u> (ICP, ZHAW) Insight into the Transient Behaviour of a Perovskite Solar Cell |
| 13.00 - 15.00 | Lunch |
| General Session H1 | |
| Room: Salón de Actos A | |
| Chair: Filippo de Angelis | |
| 15.00 H1.I1 | <u>Walsh, Aron</u> (Imperial College London) Frontiers in Materials Modelling of Hybrid Perovskites: Electrons, Phonons and Dynamic Disorder |
| 15.30 H1.I2 | <u>Olthof, Selina</u> (Universität zu Köln) UHV Surface Science as Powerful Tool to Unravel Principles and Processes in Hybrid Perovskites |
| 16.00 H1.I3 | <u>Miyano, Kenjiro</u> (National Institute for Materials Science) Characterization of Perovskite Photovoltaic Cells with Capacitance Spectroscopy |
| Session C1 | |
| Room: Salón de Actos A | |
| Chair: Shi Dong | |
| 16.30 C1.O1 | <u>Senes, Alessia</u> (TNO) Stability of Perovskite Solar Cells: the Use of Different Stress Conditions to Identify Degradation Pathways |
| 16.45 C1.O2 | <u>Smecca, Emanuele</u> (National Research Council of Italy) Revealing a Discontinuity in the Degradation Behaviour Of CH ₃ NH ₃ PbI ₃ during Thermal Operation |

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| Session D1 | |
| Room: Salón de Grados G | |
| Chair: Juan Anta | |
| 16.30 D1.O1 | <u>Dewalque, Jennifer</u> (University of Liege) Inverse Opal Photoanodes: Preparation and Optical Properties |
| 16.45 D1.O2 | <u>Wang, Tianyi</u> (Institute for Atomic and Molecular Physics, AMOLF) Indirect to Direct Bandgap Transition in Methylammonium Lead Halide Perovskite |
| 17.00 18.30 | Poster Session |
| 20.30 | Social Dinner |
| 2nd March - Day 2 (Thursday) | |
| General Session G2 | |
| Room: Salón de Actos A | |
| Chair: David Cahen | |
| 09.00 G2.I1 | <u>Mhaisalkar, Subodh</u> (National Technological University) Multifunctional Cation Incorporated Perovskites and their Photophysical Investigations for High-Stability Solar Cells |
| 09.30 G2.I2 | <u>Bisquert, Juan</u> (Universitat Jaume I) Interpretation of Kinetic Processes Governing the Operation of Perovskite Solar Cells |
| 10.00 G2.I3 | <u>Buecheler, Stephan</u> (EMPA, Swiss Federal Laboratories for Materials Science and Technology) Halide Perovskite Solar Cells for All-Thin Film Tandem Devices |
| 10.30 | Sponsor talk |
| 10.45 | Coffee Break |
| Session A2 | |
| Room: Salón de Actos A | |
| Chair: Ferdinand Grozema | |
| 11.15 A2.O1 | <u>De Angelis, Filippo</u> (The Institute of Molecular Science and Technologies) Modeling the Photochemistry of Lead Halide Perovskites |
| 11.30 A2.O2 | <u>Boyer-Richard, Soline</u> (UMR FOTON, CNRS, INSA) Symmetry-Based Tight Binding Modeling of Halide Perovskite Semiconductors |
| 11.45 A2.O3 | <u>Mora-Seró, Iván</u> (Universitat Jaume I) Inductive Loop and Negative Capacitance in Perovskite Solar Cells, not Just an Exotic Behavior |

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| 12.00 | <u>Sherkar, Tejas S.</u> (University of Groningen) |
| A2.O4 | Improving Perovskite Solar Cells: Insights From a Validated Device Model |
| 12.15 | <u>Neukom, Martin</u> (Fluxim AG) |
| A2.O5 | Explanation for Reduced IV-Curve Hysteresis in Highly Efficient Perovskite Solar Cells |
| 12.30 | <u>Uchida, Satoshi</u> (University of Tokyo) |
| A2.O6 | Simulation of I-V Curves for Inverted Structure Perovskite Solar Cells using Equivalent Circuit Model with Inductance |
| 12.45 | <u>Anaya, Miguel</u> (Consejo Superior de Investigaciones Cient) |
| A2.O7 | Optical Design of Perovskite Based Tandem Solar Cells |
| Session B2 | |
| Room: Salón de Grados G | |
| Chair: Mmantsae Diale | |
| 11.15 | <u>Just, Justus</u> (Helmholtz-Zentrum Berlin) |
| B2.O1 | Reaction Pathways and Kinetics during the Formation of Mixed-halide Perovskites by In-situ Optical Spectroscopy Combined with In-situ X-ray Spectroscopy and Diffraction |
| 11.30 | <u>Jo, William</u> (Ewha Womans University) |
| B2.O2 | Fabrication of Lead-Free MASn(I,Br) ₃ Solar Cells and Their Stability Probed by Scanning Probe Microscopy |
| 11.45 | <u>Safdari, Majid</u> (KTH Royal Institute of Technology) |
| B2.O3 | Chemical Structure and Physical Properties of Organic-Inorganic Metal Halide Materials for Solid State Solar Cells |
| 12.00 | <u>Pistor, Paul</u> (Catalonian Institute for Energy Research) |
| B2.O4 | Structural and Optical Investigation of the Double Perovskite Cs ₂ AgBiBr ₆ |
| 12.15 | <u>Aygüler, Meltem</u> (Ludwig Maximilian University of Munich) |
| B2.O5 | Effects of Annealing Temperature of Tin Oxide Electron Transport Layers on the Hysteresis of Perovskite Solar Cells |
| 12.30 | <u>Hatton, Ross A.</u> (University of Warwick) |
| B2.O6 | Enhancing the Efficiency and Stability of CsSnI ₃ Perovskite Photovoltaics |
| 12.45 | <u>Mortan, Claudiu</u> (TU Darmstadt, Surface Science) |
| B2.O7 | Perovskite Solar Cells: From Lead (Pb) to Tin (Sn). Spin-coating and Flash Evaporation |
| 13.00 - 15.00 | Lunch |

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| General Session H2 | |
| Room: Salón de Actos A | |
| Chair: Ivan Mora-Sero | |
| 15.00 H2.I1 | <u>Qi, Yabing</u> (Okinawa Institute of Science and Technology Graduate University) Surface and Interface Aspects of Organic-inorganic Halide Perovskite Solar Cells |
| 15.30 H2.I2 | <u>Lovrincic, Robert</u> (Technische Universität Braunschweig) Vibrations in Methylammonium Lead Halide Perovskites: Implications for Electronic Properties and Chemical Analysis |
| Session C2 | |
| Room: Salón de Actos A | |
| Chair: Martin Neukom | |
| 16.00 C2.O1 | <u>Momblona, Cristina</u> (Universitat de València) Highly Efficient Vacuum Deposited p-i-n and n-i-p Perovskite Solar Cells Employing Doped Charge Transport Layers |
| 16.15 C2.O2 | <u>Senders, Simon</u> (RWTH Aachen University) Fabrication of Organometal Halide Perovskite Layers via Chemical Vapor Deposition |
| 16.30 C2.O3 | <u>Berson, Solenn</u> (Commissariat à l'Énergie Atomique et aux Énergies Alternatives) Perovskite/Silicon Tandem Solar Cells: Elaboration of the Transparent P-type Interfacial Layer and Transparent front Electrode |
| 16.45 C2.O4 | <u>Palazon, Francisco</u> (Istituto Italiano di Tecnologia) Fully Inorganic Perovskite Nanocrystal Inks for High-voltage Solar Cells |
| Session D2 | |
| Room: Salón de Grados G | |
| Chair: Alexey Tarasov | |
| 16.00 D2.O1 | <u>Sastre-Santos, Angela</u> (Universidad Miguel Hernández) Perylenediimides and Phthalocyanines as Components in Perovskite Solar Cells |
| 16.15 D2.O2 | <u>Hadipour, Afshin</u> (IMEC) Solution-processed Metal Oxide Based Charge Extraction Buffer Layers at low Temperatures for Efficient and Stable Perovskite Solar Cells |
| 16.30 D2.O3 | <u>Molina-Ontoria, Agustin</u> (IMDEA Nanociencia) Molecular Engineering of Thiophene-rich Hole-Transporting Materials for Perovskite Solar Cells |
| 16.45 D2.O4 | <u>Shi, Dong</u> (University of Electronic Science and Technology of China) Enhanced Photovoltaic Merits in Perovskites and Spiro-OMeTAD Single Crystals |
| 17.00 | Closing |

POSTERS

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| 4563 | Ludmila Cojocar, <u>Satoshi Uchida</u> , Piyankarage V. V. Jayaweera, Shoji Kaneko, Jotaro Nakazaki, Takaya Kubo, Hiroshi Segawa | Physical Modeling of Hysteretic Behavior in I-V Curves of Perovskite Solar Cells |
| 4564 | <u>Sudeep Maheshwari</u> , Nicolas Renaud, Tom Savenije, Ferdinand Grozema | New designs of 2-D Lead iodide perovskites |
| 4580 | <u>Gregorio García</u> , Pablo Palacios, Ana Montejo-Alejo, Eduardo Menendez-Proupin, José Carlos Conesa, Perla Wahnón | Point Defect Impact on the Electronic Structure of Perovskite CH ₃ NH ₃ PbI ₃ from First Principles Quantum Calculations |
| 4583 | <u>Clara Aranda</u> , Antonio Guerrero | Reproducible Hybrid Halide Perovskites Solar Cells with High Efficiencies Fabricated in Ambient Conditions by Solvent and Additives Engineering |
| 4587 | <u>Antonio Guerrero</u> | Interfacial Reactivity Limits Perovskite Solar Cell Stability |
| 4588 | <u>Eva M. Barea</u> , Naemeh Aeineh, Iván Mora-Seró | Transformation of PbI ₂ , PbBr ₂ and PbCl ₂ Salts into MAPbBr ₃ Perovskite by Halide Exchange as an Effective Method for Recombination Reduction |
| 4593 | <u>Hiba Diab</u> , Gaelle Trippé-Allard, Ferdinand Lédée, Khaoula Jemli, Christèle Vilar, Guillaume Bouchez, Vincent L. R. Jacques, Antonio Tejada, Jacky Even, Jean-Sébastien Lauret, Emmanuelle Deleporte, Damien Garrot | Excitonic Emission and Electron-Phonon coupling in Organic-Inorganic Lead Iodide Perovskite single crystals |
| 4594 | <u>Satyajit Gupta</u> , Tatyana Bendikov, Gary Hodes, David Cahen | Optoelectronic and Structural Effects of SnF ₂ on Tin Halide Perovskites |
| 4596 | <u>Markus Becker</u> , Michael Wark | Morphology control of CH ₃ NH ₃ PbI ₃ layers for planar perovskite solar cells |
| 4607 | Javad Shamsi, <u>Ahmed Abdelhady</u> , Sara Accornero, Milena Arciniegas, Luca Goldoni, Ajay Kandada Kandada, Annamaria Petrozza, Liberato Manna | N-Methylformamide as a Source of Methylammonium Ions in the Synthesis of Lead Halide Perovskite Nanocrystals and Bulk Crystals |
| 4608 | Valero G. Alfonso, Rafael S. Sánchez, <u>Elena Mas-Marzá</u> | Light-induced crystal phase transition of lead halide perovskite: implications in the photovoltaic performance |
| 4610 | <u>Carlos Echeverría-Arrondo</u> , Sandheep Ravishankar, Juan Bisquert | Surface polarization model for dynamical hysteresis in perovskite solar cells |
| 4611 | <u>Osbel Almora</u> , Germà Garcia-Belmonte | Capacitive and Noncapacitive Hysteretic Currents in Perovskite Solar Cells |
| 4612 | <u>Dengyang Guo</u> , Haotong Wei, Jinsong Huang, Tom Savenije | Structure Dependent Charge Carrier Dynamics in (CH ₃ NH ₃)PbBr ₃ Single Crystals |

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| 4613 | <u>Claudia Hartmann</u> , Satyajit Gupta, Xeniya Kozina, Thomas Kunze, Gary Hodes, Roberto Félix, Regan G. Wilks, David Cahen, Marcus Bär | The chemical and electronic properties of inorganic lead-free CsSnX ₃ perovskites: Impact of SnF ₂ treatments, halide composition, and deposition route |
| 4618 | <u>María Gélvez-Rueda</u> , Eline Hutter, Duyen Cao, Nicolas Renaud, Constantinos Stoumpos, Joseph Hupp, Tom Savenije, Mercuri Kanatzidis, Ferdinand Grozema | Charge Transport and Excited State Dissociation in 2D Hybrid Lead Halide Perovskites |
| 4619 | <u>Nuria Vicente</u> , Germà Garcia-Belmonte | Lead Bromide Perovskite Fast Ionic Conductor for High-Power Charge Storage Battery Anodes |
| 4626 | Hye Ri Jung, Bich Phuong Nguyen, Trang Thi Thu Nguyen, Seokhyun Yoon, <u>William Jo</u> | Electronic Structure of MAPbBr ₃ Single Crystals Probed by Photoluminescence and Surface Potentials |
| 4627 | <u>Alberto García-Fernández</u> , Juan Manuel Bermúdez-García, Valero G. Alfonso, Zahra Moradi, Elena Mas-Marzá, Socorro Castro-Garcia, Manuel Sanchez-Andujar, Francisco Frabegat-Santiago, Maria Antonia Señaris-Rodriguez | Large values of dielectric constant on MAPbI ₃ compound induced by moisture |
| 4631 | <u>Juan Ramon Sanchez-Valencia</u> , Ana Borrás, Jesus Idigoras, Juan Antonio Anta, Angel Barranco | One-Dimensional Organometal halide perovskite nanostructures fabricated by vacuum sublimation |
| 4633 | <u>Elnaz Ghahremanirad</u> , Saeed Olyaei, Kambiz Abedi, Vahid Ahmadi | Enhanced Light Confinement in Perovskite Solar Cells by Incorporating Plasmonic Nanorings |
| 4636 | <u>Ralph Dachauer</u> , Islam Elhelaly, Carolin Wittich, Michael Wußler, Christian Hoyer, Christian Ondobo, Tim Hellmann, Hans Köbler, Claudiu Mortan, Kerstin Lakus-Wollny, Oliver Clemens, Alexander Beneš, Christoph Loho, Mohammad Ali Nowroozi, Eric Mankel, Thomas Mayer, Wolfram Jaegermann | Closed Space Sublimation for lead and tin based perovskites |
| 4650 | <u>Michael Wussler</u> , Tim Hellmann, Islam Elhelaly, Claudiu Mortan, Hans Koebler, Ralph Dachauer, Carolin Wittich, Thomas Mayer, Chittaranja Das, Wolfram Jaegermann | Interface studies on lead and tin based perovskite solar cells |
| 4653 | <u>Mmantsae Diale</u> , Matshisa Legodi, John Rosenberg, David Cahen | Deep Level Transient Spectroscopy of Methylammonium lead bromide perovskite solar cells |
| 4691 | <u>Andrey Petrov</u> , Alexey Tarasov, Eugene Goodilin, Michael Graetzel | New insight into the formation of hybrid perovskite nanowires via structure directing adducts |
| 4694 | <u>Luis Ono</u> , Zafer Hawash, Sonia Raga, Emilio Juarez-Perez, Matthew Leyden, Yuichi Kato, Mikas Remeika, Shenghao | Spiro-MeOTAD Hole Transport Layer in Perovskite-based Solar Cells |

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| | Wang, Michael Lee, Andrew Winchester, Atsushi Gabe, Yan Jiang, Yabing Qi | |
| 4749 | Zhuoneng Bi, <u>Xueqing Xu</u> , Kai Gao | A Fast Spray Deposition Approach for Perovskite Planar Solar Cells Based on HC(NH ₂) ₂ PbI ₃ |
| 4769 | <u>Eline Hutter</u> , Maria Gelvez-Rueda, Anna Osharov, Vladimir Bulovic, Ferdinand Grozema, Samuel Stranks, Tom Savenije | Direct-Indirect Character of the Band Gap in Methylammonium Lead Iodide Perovskite |
| 4778 | <u>Sebastian Feihl</u> , Nicola Gasparini, Gebhard Matt, Thomas Kunz, Michael Multerer, Christoph Brabec, Carl-Albrecht Schiller | Complementing Intensity Modulated Photo Spectroscopy Applied on Organic Solar Cells with Fast Intensity Transient Measurements |
| 4787 | <u>Marta Valles-Pelarda</u> , Eya Belarbi, Bruno Clasen Hames, Rafael S. Sanchez, Eva M. Barea, Hager Maghraoui-Meherzi, Ivan Mora-Sero | MAPbBr ₃ Perovskite Prepared by Halide Exchange |
| 4788 | <u>Thi Tuyen Ngo</u> , Isaac Suarez, Gabriella Antonicelli, Diego Cortizo-Lacalle, Juan P. Martinez-Pastor, Aurelio Mateo-Alonso, Ivan Mora-Sero | Performance Improvement of Perovskite Optoelectronic Devices by the Passivation Perovskite Layer Through Anti-solvent Additive Deposition |
| 4789 | <u>Bruno Clasen Hames</u> , Rafael Sánchez Sánchez, Iván Mora Seró | Study and Characterization of Light-Emitting Diodes Based on All Inorganic Perovskite Nanoparticles |
| 4791 | <u>Julian Steele</u> , Haifeng Yuan, Maarten Roeffaers, Johan Hofkens | High-temperature Raman and XRD study of oxygen intercalation during δ to α transition in formamidinium lead iodide |
| 4880 | <u>Tomoyasu Yokoyama</u> , Michio Suzuka, Yoshiko Miyamoto, Takeyuki Sekimoto, Ryusuke Uchida, Kenji Kawano, | The bandgap narrowing of organic-inorganic hybrid perovskite by the orientation of organic cations |
| 4912 | <u>Fabio Gabelloni</u> , Francesco Biccari, Erica Burzi, Massimo Gurioli, Sara Pescetelli, Antonio Agresti, Aldo Di Carlo, Francesco Bonaccorso, Emmanuel Kymakis, Anna Vinattieri | Probing graphene-based electron transport layer in perovskite solar cells by photoluminescence spectroscopy |
| 4957 | <u>Pilar Lopez-Varo</u> , Juan Antonio Jimenez-Tejada, Manuel Garcia-Rosell, Juan Bisquert | Effect of Anions and Cations on the Performance of Perovskite Solar Cells |
| 4958 | <u>Damien Baron</u> , Jennifer Dewalque, Catherine Henrist, Jérôme Loicq | Photonic Photoanode for Macroporous Perovskite Solar Cells |
| 4962 | Fabio Gabelloni, Giulia Andreotti, <u>Francesco Biccari</u> , Massimo Gurioli, Alessio Milanese, Stefano Caporali, Marco Pagliai, Anna Vinattieri | Exciton Recombination Kinetics in High Quality CsPbBr ₃ Thin Films. |

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| 4969 | <u>Giulia Longo</u> , Laura Martinez-Sarti, Maria-Grazia La-Placa, Michele Sessolo, Henk J. Bolink | Enhanced Photo- and electroluminescence in CH ₃ NH ₃ PbBr ₃ -organic semiconductor Blends |
| 4973 | <u>Daniel Pérez-del-Rey</u> , Michele Sessolo | Strontium Insertion in Methylammonium Lead Iodide: Long Charge Carrier Lifetime and High Fill-Factor Solar Cells |
| 4974 | Laura Martínez-Sarti, Azin Babaei, <u>Maria-Grazia La-Placa</u> , Giulia Longo, Michele Sessolo, Henk J. Bolink | Quasi 2D Perovskite with PLQY Exceeding 80% |
| 4976 | <u>Laura Martínez-Sarti</u> , Teck Ming Koh, Maria-Grazia La-Placa, Pablo P. Boix, Michele Sessolo, Subodh G. Mhaisalkar, Henk J. Bolink | Efficient Photoluminescent Thin Films Consisting of Anchored Hybrid Perovskite Nanoparticles |
| 4978 | Justus Just, <u>Klara Suchan</u> , Pascal Becker, Charles J. Hages, Eva L. Unger, Thomas Unold | Reaction Pathways and Kinetics during the Formation of Mixed-halide Perovskites by In-situ Optical Spectroscopy combined with In-situ X-ray Spectroscopy and Diffraction |
| 4979 | <u>Ehsan Hassanabadi</u> , Niccolò Carlino, Paolo Bettotti, Masoud Latifi, Ivan Mora-Sero | Deposition of High Quality Halide Perovskite Films on Nanocellulose Substrates |
| 4987 | <u>Thumu Udayabhaskararao</u> , Miri Kazes, Lothar Houben, Ayelet Teitelboim, Dan Oron | Synthesis and optical properties of Cs ₄ PbX ₆ nanocrystals |

Sponsors

