



MAPPIC

Moscow Autumn Perovskite Photovoltaics
International Conference



Moscow Autumn Perovskite Photovoltaics International Conference (MAPPIC-2020)

October 26 (Moscow time)

- 11:00-11:20** ○ **Welcome speech of the organizing Committee**
- 11:20-12:00 ○ The Genesis and Stunning Rise of Perovskite Solar Cells
Prof. Michael Graetzel, EPFL, Switzerland
- 12:00-12:40 ○ Principles of solar energy conversion and characterization of solar cells
Prof. Juan Bisquert, Universitat Jaume I, Spain
- 12:40-12:40** ○ **Taking photos (please be ready to turn on the cameras)**
- 12:40-12:50** ○ **Break**
- 12:50-13:20 ○ The versatility of perovskite materials
Prof. Michael Saliba, University of Stuttgart, Germany
- 13:20-13:50 ○ Dynamical 2D/3D Interfaces a boost to Perovskite Solar Cell Stability: what's behind?
Prof. Giulia Grancini, University of Pavia, Italy
- 13:50-14:20 ○ Origin of the light-induced degradation in lead-halide perovskites and emerging Pb-free absorber materials
Prof. Pavel Troshin, Skoltech, Russia
- 14:20-14:30** ○ **Break**
- 14:30-15:00 ○ Optoelectronic properties of halide perovskites from first principles: Challenges, results and surprises
Prof. Linn Leppert, University of Twente, Netherlands
- 15:00-15:30 ○ New Paradigm of Computational Materials Science
Dr. Claudio Quarti, University of Rennes, France
- 15:30-16:00 ○ Defect-tolerance allows unusual synthetic approaches to lead halide perovskite nanocrystals
Dr. Dmitry Dirin, ETH Zurich, Switzerland
- 16:00-16:05 ○ Modern methods of simulation and testing of perovskite and other thin-film photovoltaic structures (in Russian)
Cryotrade engineering company
- 16:05-16:45** ○ **Break**

October 26 (Moscow time)

- 16:45-17:00 ○ From Metallic Lead Films to Perovskite Solar Cells through Lead Conversion with Polyhalide Solutions
Pavel Rudnev, *Lomonosov Moscow State University, Russia*
- 17:00-17:15 ○ Measure is treasure: proper iodine vapor treatment as a new method of morphology improvement of lead-halide perovskite films
Alexey Grishko, *Lomonosov Moscow State University, Russia*
- 17:15-17:30 ○ Mxenes doped inverted perovskite solar cells
Dr. Danila Saranin, *NUST MISIS, Russia*
- 17:30-17:45 ○ Ytterbium complexes with 2-(tosylamino) - benzylidene-N - (2-halobenzoyl) - hydrazones to create IR-emitting OLED (in Russian)
Lyubov Celyh, *Lomonosov Moscow State University, Russia*
- 17:45-18:00 ○ High-resolution remote thermometry and thermography using luminescent low-dimensional metal-halide perovskites
Dr. Sergii Yakunin, *ETH Zurich, Switzerland*
- 18:00-18:15 ○ Hybrid perovskite single crystals: optical properties and low-temperature features
Vasilisa Anikeeva, *Institute of Spectroscopy RAS, Russia*
- 18:15-18:30 ○ Ion diffusion through the Blocking Layers of Perovskite solar cells - Device level Electrochemistry
Dr. Nir S. Tessler, *Technion, Israel Institute of Technology, Israel*
- 18:30-18:45 ○ New universal approach of 3D and 2D hybrid perovskites single crystals growth via in-situ solvent conversion
Sergey Fateev, *Lomonosov Moscow State University, Russia*
- 18:45-19:00 ○ Nuclear Quadrupole Resonance of multinary $FA_{1-x}Cs_xPbI_{3-y}Br_y$ perovskites
Marcel Aebli, *ETH Zurich, Switzerland*
- 19:00-19:15 ○ Are Shockley-Read-Hall and ABC models valid for lead halide perovskites?
Prof. Ivan Scheblykin, *Chemical Physics, Lund University, Sweden*
- 19:15-19:30 ○ Break**
- 19:30-20:00 ○ Competing Crystallization of Perovskite Alloys
Prof. Makhsud Saidaminov, *University of Victoria, Canada*
- 20:00-20:50 ○ Halide Perovskites: Unprecedented Opportunities (and Some Challenges) for Semiconductor Design
Prof. David Mitzi, *Duke University, USA*

October 27 (Moscow time)

- 11:00-11:10** ○ **Opening speech**
- 11:10-11:50 ○ Graphoepitaxy strategy for planar perovskite structures
Prof. Eugene Goodilin, *Lomonosov Moscow state University, Russia*
- 11:50-12:30 ○ Quantum Light from Perovskite Quantum Dots
Dr. Gabriele Raino, *ETH Zurich, Switzerland*
- 12:30-12:30** ○ **Taking photos (please be ready to turn on the cameras)**
- 12:30-12:50** ○ **Break**
- 12:50-13:20 ○ Probing and stabilising luminescence in halide perovskite semiconductors
Dr. Sam Stranks, *University of Cambridge, UK*
- 13:20-13:50 ○ Highly luminescent colloidal lead halide perovskite nanocrystals - from synthesis to applications
Dr. Maryna Bodnarchuk, *Empa, Switzerland*
- 13:50-14:20 ○ Light effects on mixed halide perovskite: ion transport and demixing
Dr. Gee Yeong Kim, *Korea Institute of Science and Technology, Korea*
- 14:20-14:30** ○ **Break**
- 14:30-15:00 ○ Beyond lead: halide complexes of 15 and 16 group elements, their polyhalide derivatives and their use in materials design
Dr. Sergey Adonin, *Nikolaev Institute of Inorganic Chemistry, Russia*
- 15:00-15:30 ○ Computational design of semiconducting perovskites from first-principles
Dr. George Volonakis, *University of Rennes 1, France*
- 15:30-15:45 ○ Ni Doping in CsPbX₃ Nanocrystals via Post-Synthesis Anion-Cation Co-Exchange
Dr. Arthur Shapiro, *Technion – Israel Institute of Technology*
- 15:45-16:00 ○ Compositional and interfacial engineering yield high-performance and stable p-i-n perovskite solar cells and mini-modules of 19.4% efficiency
Janardan Singh Dagar, *Helmholtz Zentrum Berlin, Germany*
- 16:00-18:00** ○ **Poster Session**

October 28 (Moscow time)

- 11:00-11:10** ○ **Opening speech**
- 11:10-11:50 Room-temperature melts based perovskite processing: polyiodide-based approach as a mirror strategy to amine-based methods
Dr. Alexey Tarasov, *Lomonosov Moscow state University, Russia*
- 11:50-12:30 ○ Quantum dot displays
Prof. Xiaowei Sun, *SUSTech, China*
- 12:30-12:30** ○ **Taking photos (please be ready to turn on the cameras)**
- 12:30-12:50** ○ **Break**
- 12:50-13:20 ○ Making sense of approaches addressing toxicity of hybrid lead halide perovskites
Dr. Ivan Turkevych, *AIST, Japan*
- 13:20-13:50 ○ Halide perovskite lasers: towards nanoscale dimensions, spectral tunability, and mass production
Prof. Sergey Makarov, *ITMO, Russia*
- 13:50-14:00** ○ **Break**
- 14:00-14:15 ○ A_2CuX_3 (A=Rb, K; X= Cl, Br): High stability, nontoxic copper halides with near-unity photoluminescence quantum yield blue emission
Tielyr Dayne Creason, *University of Oklahoma, USA*
- 14:15-14:30 ○ Surface stabilization of perovskite solar cells by MOF, COF and polymer films: ab initio studies
Dr. Olga Syzgantseva, *Lomonosov Moscow State University, Russia*
- 14:30-14:45 ○ Investigating a new 0D hybrid organic indium bromide halide with efficient sky - blue emission
Hadijah Fattal, *University of Oklahoma, USA*
- 14:45-15:00 ○ Database of 2D hybrid perovskite materials: open-access collection of crystal structures, composition-structure-property relationships and univocal quantitative descriptor for classification of structures
Dr. Ekaterina Marchenko, *Lomonosov Moscow State University, Russia*
- 15:00-15:45** ○ **Break**
- 15:45-16:00 ○ Gadolinium Doped Two-Dimensional Phenylethylamine Based Series of Halide Perovskites as Promising Materials for Spintronics
Dr. Anjani P. Nagvenkar, *Goa University, India*

October 28 (Moscow time)

- 16:00-16:15 ○ New pigeonholing approach for selection of solvents relevant to lead halide perovskites processing
Andrei Tutatntsev, *Lomonosov Moscow State University, Russia*
- 16:15-16:30 ○ Suppression of phase transitions and glass phase signatures in mixed cation halide perovskites
Dr. Jacob Niall Wilson, *Imperial College London*
- 16:30-16:45 ○ Hybrid perovskites photodegradation and accompanying chemical corrosion of metal electrodes in perovskite solar cells
Natalia Udalova, *Lomonosov Moscow State University, Russia*
- 16:45-17:00 ○ Cage-like cations in perovskite-like compounds
Ivan Mezentsev-Cherkes, *Lomonosov Moscow State University, Russia*
- 17:00-17:15 ○ Photovoltaic element based on perovskite MAPbI_3 with nanoparticles FAPbI_3 and PbI_2 in the surface layer (in Russian)
Alexander Alexandrov, *Frumkin Institute of Physical chemistry and Electrochemistry Russian academy of sciences (IPCE RAS), Russia*
- 17:15-17:30 ○ **Break**
- 17:30-18:00 ○ Ab initio quantum dynamics of charge carriers in metal halide perovskites
Prof. Oleg Prezhdo, *University of Southern California, USA*
- 18:00-18:30 ○ High-Efficiency Light Emission from Lead-Free Metal Halides
Prof. Bayram Saparov, *The University of Oklahoma, USA*
- 18:30-19:00 ○ **Award for the best reports and closing**

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