



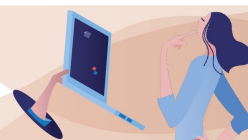
Online School on Hybrid, Organic and Perovskite Photovoltaics (HOPE-PV)

2020 November 3rd - 5th

Conference organizers: Sergey M. Aldoshin, Jovana Milic, Keith Stevenson and Pavel Troshin

Conference Program

November 3rd - Day 1 (Tuesday) 1	
Session 1 Chair: Keith Stevenson	
11:00 - 11:05 1-O1	<u>nG Intro (Online)</u> nanoGe Introduction
11:05 - 11:10 1-O2	<u>O Welcome (Online)</u> Organizers Welcome
11:10 - 11:55 1-K1	<u>Michael Graetzel</u> (<i>Ecole Polytechnique Federale de Lausanne (EPFL)</i>) The Genesis and Rise of Perovskite Solar Cells
11:55 - 12:35 1-I1	<u>Monica Lira-Cantu</u> (<i>Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology (BIST), Campus UAB, Bellaterra, E-08193 Barcelona, Spain.</i>) Metal Oxides for Highly Efficient and Stable Halide Perovskite Solar Cells
12:35 - 13:15 1-I2	<u>Jovana Milic</u> (<i>University of Fribourg, Adolphe Merkle Institute</i>) Templating Hybrid Perovskites
13:15 - 13:30	Break
Session 2 Chair: Sergey A. Adonin	
13:30 - 14:00 2-I1	<u>Alexey Tarasov</u> (<i>Laboratory of New Materials for Solar Energetics, Faculty of Materials Science, Lomonosov Moscow State University, Russia</i>), Andrey Petrov, Nikolai Belich, Natalia Udalova, Sergey Fateev New features of perovskite processing with Reactive Polyiodide Melts
14:00 - 14:40 2-I2	<u>Juan Bisquert</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain</i>) Fundamental Concepts of Photovoltaics and Operation of Devices for Solar Energy Conversion
14:40 - 14:55 2-O1	<u>Giorgio Bardizza</u> (<i>European Commission, Joint Research Centre (JRC), Ispra, Italy</i>), Harald Mülleians, Diego Pavanello, Ewan D. Dunlop Universal measurement protocol for perovskite based photovoltaic devices
14:55 - 15:10 2-O2	<u>Dounya Barrit</u> (<i>King Abdullah University of Science and Technology (KAUST) - Saudi Arabia</i>), Yalan Zhang, Ming-Chun Tang, Ruipeng Li, Detlef-M. Smilgies, Shengzhong (Frank) Liu, Thomas D. Anthopoulos, Aram Amassian, Kui Zhao In Situ Investigation and Photovoltaic Devices: Sequential Formation of Tunable-Bandgap Mixed-Halide Lead-based Perovskites
15:10 - 15:25 2-O3	<u>Nathaniel P. Gallop</u> (<i>Department of Chemistry, Centre of Plastic Electronic, Imperial College London</i>), Dmitry R. Maslennikov, Katelyn Goetz, Woongmo Sung, Satoshi Nihonyanagi, Tahei Tahara, Yana Vaynzof, Artem A. Bakulin 'Just Vibing': Coupled Organic and Inorganic Sublattices in Organohalide Perovskite Solar Cells



November 4th - Day 2 (Wednesday) 2

Session 3

Chair: Pavel Troshin

09:00 - 09:05	<u>nG Intro (Online)</u>
3-O1	nanoGe Introduction
09:05 - 09:45	<u>Francesca Brunetti</u> (<i>Center for Hybrid and Organic Solar Energy (CHOSE), Department of Electronic Engineering, University of Rome Tor Vergata, via del Politecnico 1,00133 Rome, Italy</i>)
3-I2	Printable and flexible solar cells and energy storage systems: opportunities and challenges
09:45 - 10:25	<u>Emmanuel Kymakis</u> (<i>Hellenic Mediterranean University</i>)
3-I1	2D interfacial engineering for perovskite PVs: from small devices to solar systems
10:25 - 10:55	<u>Qinye Bao</u> (<i>East China Normal University</i>)
3-I3	Interfacial Electronic Structures in Perovskite Solar Cells

10:55 - 11:10 **Break**

Session 4

Chair: Jovana Milic

11:10 - 11:50	<u>Luigi Martiradonna</u> (<i>Nature Materials</i>)
4-I1	An Insider's view on Nature Materials
11:50 - 12:05	<u>Aleksandra Boldyreva</u> (<i>Skoltech - Skolkovo Institute of Science and Technology, Moscow</i>), Lyubov Frolova, Ivan Zhidkov, Ernst Kurmaev, Lavrenty Gutsev, Sergey Aldoshin, Keith Stevenson, Vladimir Petrov, Pavel Troshin
4-O1	Exploring the radiation stability of perovskite solar cells
12:05 - 12:20	<u>Lavrenty G. Gutsev</u> (<i>Louisiana Tech University, Institute for Micromanufacturing</i>), Aleksandra G. Boldyreva, Lyubov A. Frolova, Ivan S. Zhidkov, Ernst Z. Kurmaev, Bala R. Ramachandran, Vladimir G. Petrov, Keith J. Stevenson, Sergei M. Aldoshin, Pavel A. Troshin
4-O2	Unravelling the Material Composition Effects on the Gamma Ray Stability of Lead Halide Perovskite Solar Cells: MAPbI ₃ breaks the records
12:20 - 12:35	<u>Sergey Tsarev</u> (<i>Skoltech - Skolkovo Institute of Science and Technology, Moscow</i>), Selina Olthof, Marina Tepliakova, Aleksandra Boldyreva, Sergey Luchkin, Gennady Shilov, Sergey Aldoshin, Keith Stevenson, Pavel Troshin
4-O3	Improving Operational Stability of Perovskite Solar Cells using ZnO Electron Transport Layer
12:35 - 12:50	<u>Olga Yamilova</u> (<i>Skoltech - Skolkovo Institute of Science and Technology, Moscow</i>), Ilya Martynov, Allison Brandvold, Irina Klimovich, Alex Balzer, Alexander Akkuratov, Ilya Kuznetsov, Natalie Stingelin, Pavel Troshin
4-O4	What is killing organic photovoltaics: light-induced crosslinking as a general degradation pathway of organic conjugated molecules
12:50 - 13:05	<u>Andriy Zhugayevych</u> (<i>Skoltech - Skolkovo Institute of Science and Technology, Moscow</i>)
4-O5	Comparison of non-fullerene acceptors: How geometry influences electronic transport

13:05 - 13:15 **Break**

13:15 - 14:45 **Poster Session**



November 5th - Day 3 (Thursday) 3

Session 5

Chair: Lavrenty Gutsev

11:00 - 11:05	<u>nG Intro (Online)</u>
5-01	nanoGe Introduction
11:05 - 11:45	<u>Artem Bakulin</u> (<i>Imperial College London, United Kingdom</i>)
5-11	Ultrafast Spectroscopy for Organic Photovoltaics
11:45 - 12:25	<u>Sergei Ponomarenko</u> (<i>Enikolopov Institute of Synthetic Polymeric Materials of the Russian Academy of Sciences</i>)
5-12	Future Approaches to Organic Photovoltaics
12:25 - 12:55	<u>Vida Engmann</u> (<i>University of Southern Denmark, SDU NanoSYD, Mads Clausen Institute</i>), Michela Prete, Mikkel Bregnhøj, Pavel Troshin, Peter Ogilby, Morten Madsen
5-13	Degradation and Stabilization of Organic Solar Cells
12:55 - 13:10	Break

Session 6

Chair: Vida Engmann

13:10 - 13:40	<u>Sergey A. Adonin</u> (<i>Russian Academy of Sciences / RAS · Nikolaev Institute of Inorganic Chemistry</i>)
6-12	Beyond Lead: Halide Complexes of 15 and 16 Group Elements, their Polyhalide Derivatives and their Use in Materials Design
13:40 - 14:10	<u>Shijing Sun</u> (<i>MIT - Massachusetts Institute of Technology</i>)
6-13	Data-driven Discovery in the Search for Stable Perovskite Photoabsorbers
14:10 - 14:50	<u>Christoph Brabec</u> (<i>Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)</i>)
6-11	AMANDA - Line 1: Can AI Guided High throughput Device Engineering Resolve Long Time Challenges in Solution Processed Photovoltaics?
14:50 - 15:15	Closing and awards



Poster Contribution

004	<u>Sapir Bitton</u> (<i>Technion - Israel Institute of Technology, Electrical Engineering Department</i>), Nir Tessler Electronic Blocking Layers as Ionic Blocking Layers in Perovskite Solar Cells
013	<u>Shreya Srivastava</u> (<i>National Institute of Technology, Rourkela</i>), Suverna Trivedi, Pankaj Yadav Electrochemical Impedance Spectroscopy Analysis of Lead Halide Perovskite Solar cells
014	<u>Federico Ventosinos</u> (<i>Instituto de Física del Litoral (IFIS-CONICET), Santa Fe, Argentina</i>), Anderzon Felipe Palechor Ocampo, Pedro Hierrezuelo, Javier Alejandro Schmidt Advanced characterization of Halide Perovskites using the moving grating technique
017	<u>Ekaterina Dolzhikova</u> (<i>D. Mendeleev University of Chemical Technology of Russia</i>), Sergey Tsarev, Pavel Troshin Simple interfacial passivation for HTL-free perovskite solar cells with carbon top electrodes
023	<u>Azat Akbulatov</u> (<i>The Institute for Problems of Chemical Physics of the Russian Academy of Sciences, Moscow, Russia</i>), Lyubov Frolova, Sergey Tsarev, Ivan Zhidkov, Sergey Luchkin, Ernst Kurmaev, Keith Stevenson, Sergey Aldoshin, Pavel Troshin Film Deposition Techniques Impact Defect Density and Photostability of MAPbI ₃ Perovskite Films
026	<u>Ilya Kusnetsov</u> (<i>Institute for Problems of Chemical Physics, Russian Academy of Sciences</i>), Petr Kuznetsov, Pavel Troshin, Alexander Akkuratov Influence of backbone fluorination on optoelectronic and photovoltaic properties of novel (X-DADAD) _n conjugated polymers
027	<u>Maria Mikheeva</u> (<i>D. Mendeleev University of Chemical Technology of Russia</i>), Marina Ustinova, Nadezhda Dremova, Pavel Troshin Effect of partial Pb ²⁺ substitution with Ca ²⁺ on the stability and photovoltaic performance of all-inorganic CsPbI ₃ perovskite
028	<u>Pavel Proshin</u> (<i>Skolkovo Institute of Science and Technology</i>), Sergey Nikitenko, Pavel Troshin, Alexander Akkuratov Design of novel thiazolothiazole-based conjugated polymers for organic solar cells
029	<u>Elizaveta Vaneeva</u> (<i>D. Mendeleev University of Chemical Technology of Russia</i>), Sergey Tsarev, Pavel Troshin Liquid metal melt electrodes for low-cost perovskite solar cells
038	<u>Ilya Martynov</u> (<i>Institute for Problems of Chemical Physics of the Russian Academy of Sciences (IPCP RAS), Academician Semenov avenue 1, Chernogolovka, Moscow region, 142432 Russian Federation</i>), Alexander Akkuratov, Iris Visoly-Fisher, Eugene Katz Improving the operation stability of organic solar cells by using naphthalene dithiol.