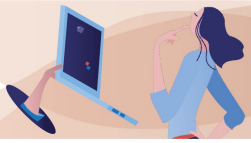


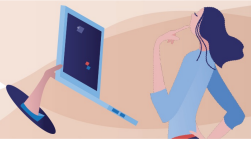
Online School on Hybrid, Organic and Perovskite Photovoltaics (HOPE-PV)

2020 November 3rd - 5th

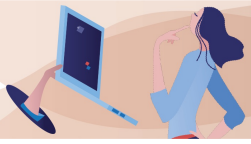
Conference organizers: Sergey M. Aldoshin, Jovana Milic, Keith Stevenson and Pavel Troshin

Conference Program

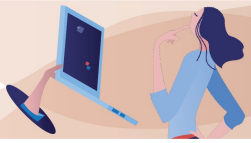
November 3rd - Day 1 (Tuesday) 1	
	Session 1 Chair: Keith Stevenson
11:00 - 11:05 1-O1	nG Intro *(Online Conference)* nanoGe Introduction
11:05 - 11:10 1-O2	O Welcome *(Online Conference)* Organizers Welcome
11:10 - 11:55 1-K1	Michael Graetzel *(Ecole Polytechnique Federale de Lausanne (EPFL))* The Genesis and Rise of Perovskite Solar Cells
11:55 - 12:35 1-I1	Monica Lira-Cantu *(Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology (BIST), Campus UAB, Bellaterra, E-08193 Barcelona, Spain.)* Metal Oxides for Highly Efficient and Stable Halide Perovskite Solar Cells
12:35 - 13:15 1-I2	Jovana Milic *(University of Fribourg, Adolphe Merkle Institute)* Templating Hybrid Perovskites
13:15 - 13:30	**Break**
	Session 2 Chair: Sergey A. Adonin
13:30 - 14:00 2-I1	Alexey Tarasov *(Laboratory of New Materials for Solar Energetics, Faculty of Materials Science, Lomonosov Moscow State University, Russia)*, Andrey Petrov, Nikolai Belich, Natalia Udalova, Sergey Fateev New features of perovskite processing with Reactive Polyiodide Melts
14:00 - 14:40 2-I2	Juan Bisquert *(Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain)* Fundamental Concepts of Photovoltaics and Operation of Devices for Solar Energy Conversion
14:40 - 14:55 2-O1	Giorgio Bardizza *(European Commission, Joint Research Centre (JRC), Ispra, Italy)*, Harald Müllejans, Diego Pavanello, Ewan D. Dunlop Universal measurement protocol for perovskite based photovoltaic devices
14:55 - 15:10 2-O2	Dounya Barrit *(King Abdullah University of Science and Technology (KAUST) - Saudi Arabia)*, 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	Nathaniel P. Gallop *(Department of Chemistry, Centre of Plastic Electronic, Imperial College London)*, 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 3-O1	nG Intro *(Online Conference)* nanoGe Introduction
09:05 - 09:45 3-I2	Francesca Brunetti *(Center for Hybrid and Organic Solar Energy (CHOSE), Department of Electronic Engineering, University of Rome Tor Vergata, via del Politecnico 1,00133 Rome, Italy)* Printable and flexible solar cells and energy storage systems: opportunities and challenges
09:45 - 10:25 3-I1	Emmanuel Kymakis *(Hellenic Mediterranean University)* 2D interfacial engineering for perovskite PVs: from small devices to solar systems
10:25 - 10:55 3-I3	Qinye Bao *(East China Normal University)* Interfacial Electronic Structures in Perovskite Solar Cells
10:55 - 11:10	**Break**
	Session 4 Chair: Jovana Milic
11:10 - 11:50 4-I1	Luigi Martiradonna *(Nature Materials)* An Insider's view on Nature Materials
11:50 - 12:05 4-O1	Aleksandra Boldyreva *(Skoltech - Skolkovo Institute of Science and Technology, Moscow)*, Lyubov Frolova, Ivan Zhidkov, Ernst Kurmaev, Lavrenty Gutsev, Sergey Aldoshin, Keith Stevenson, Vladimir Petrov, Pavel Troshin Exploring the radiation stability of perovskite solar cells
12:05 - 12:20 4-O2	Lavrenty G. Gutsev *(Louisiana Tech University, Institute for Micromanufacturing)*, 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 Unravelling the Material Composition Effects on the Gamma Ray Stability of Lead Halide Perovskite Solar Cells: MAPbI3 breaks the records
12:20 - 12:35 4-O3	Sergey Tsarev *(Skoltech - Skolkovo Institute of Science and Technology, Moscow)*, Selina Olthof, Marina Tepliakova, Aleksandra Boldyreva, Sergey Luchkin, Gennady Shilov, Sergey Aldoshin, Keith Stevenson, Pavel Troshin Improving Operational Stability of Perovskite Solar Cells using ZnO Electron Transport Layer
12:35 - 12:50 4-O4	Olga Yamilova *(Skoltech - Skolkovo Institute of Science and Technology, Moscow)*, Ilya Martynov, Allison Brandvold, Irina Klimovich, Alex Balzer, Alexander Akkuratov, Ilya Kuznetsov, Natalie Stingelin, Pavel Troshin What is killing organic photovoltaics: light-induced crosslinking as a general degradation pathway of organic conjugated molecules
12:50 - 13:05 4-O5	Andriy Zhugayevych *(Skoltech - Skolkovo Institute of Science and Technology, Moscow)* Comparison of non-fullerene acceptors: How geometry influences electronic transport
13:05 - 13:15	**Break**
13:15 - 14:45	**Poster Session**

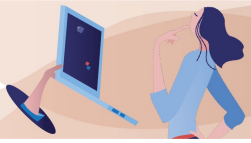


November 5th - Day 3 (Thursday) 3	
	Session 5 Chair: Lavrenty Gutsev
11:00 - 11:05 5-O1	nG Intro *(Online Conference)* nanoGe Introduction
11:05 - 11:45 5-I1	Artem Bakulin *(Imperial College London, United Kingdom)* Ultrafast Spectroscopy for Organic Photovoltaics
11:45 - 12:25 5-I2	Sergei Ponomarenko *(Enikolopov Institute of Synthetic Polymeric Materials of the Russian Academy of Sciences)* Future Approaches to Organic Photovoltaics
12:25 - 12:55 5-I3	Vida Engmann *(University of Southern Denmark, SDU NanoSYD, Mads Clausen Institute)*, Michela Prete, Mikkel Bregnhoj, Pavel Troshin, Peter Ogilby, Morten Madsen Degradation and Stabilization of Organic Solar Cells
12:55 - 13:10	**Break**
	Session 6 Chair: Vida Engmann
13:10 - 13:40 6-I2	Sergey A. Adonin *(Russian Academy of Sciences | RAS · Nikolaev Institute of Inorganic Chemistry)* Beyond Lead: Halide Complexes of 15 and 16 Group Elements, their Polyhalide Derivatives and their Use in Materials Design
13:40 - 14:10 6-I3	Shijing Sun *(MIT - Massachusetts Institute of Technology)* Data-driven Discovery in the Search for Stable Perovskite Photoabsorbers
14:10 - 14:50 6-I1	Christoph Brabec *(Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU))* 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**

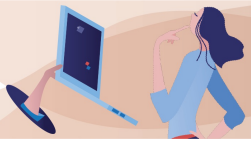


Poster Contribution

013	Shreya Srivastava *(National Institute of Technology, Rourkela)*, Suverna Trivedi, Pankaj Yadav Electrochemical Impedance Spectroscopy Analysis of Lead Halide Perovskite Solar cells
014	Federico Ventosinos *(Instituto de Física del Litoral (IFIS-CONICET), Santa Fe, Argentina)*, Anderzon Felipe Palechor Ocampo, Pedro Hierrezuelo, Javier Alejandro Schmidt Advanced characterization of Halide Perovskites using the moving grating technique
017	Ekaterina Dolzhikova *(D. Mendeleev University of Chemical Technology of Russia)*, Sergey Tsarev, Pavel Troshin Simple Interfacial Passivation for HTL-free Perovskite Solar Cells with Carbon Top Electrodes
023	Azat Akbulatov *(The Institute for Problems of Chemical Physics of the Russian Academy of Sciences RAS, Russia)*, 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 MAPbI3 Perovskite Films
026	Ilja Kusnetsov *(The Institute for Problems of Chemical Physics of the Russian Academy of Sciences RAS, Russia)*, Petr Kuznetsov, Pavel Troshin, Alexander Akkuratov Influence of Backbone Fluorination on Optoelectronic and Photovoltaic Properties of Novel (X-DADAD)n Conjugated Polymers
027	Maria Mikheeva *(D. Mendeleev University of Chemical Technology of Russia)*, Marina Ustinova, Nadezhda Dremova, Pavel Troshin Effect of Partial Pb2+ Substitution with Ca2+ on the Stability and Photovoltaic Performance of All-inorganic CsPbI3 Perovskite
028	Pavel Proshin *(Skoltech - Skolkovo Institute of Science and Technology, Moscow)*, Sergey Nikitenko, Pavel Troshin, Alexander Akkuratov Design of Novel Thiazolothiazole-based Conjugated Polymers for Organic Solar Cells
029	Elizaveta Vaneeva *(D. Mendeleev University of Chemical Technology of Russia)*, Sergey Tsarev, Pavel Troshin Liquid Metal Melt Electrodes for Low-cost Perovskite Solar Cells
038	Ilya Martynov *(The Institute for Problems of Chemical Physics of the Russian Academy of Sciences RAS, Russia)*, Alexander Akkuratov, Iris Visoly-Fisher, Eugene Katz Improving the Operation Stability of Organic Solar Cells by Using Naphthalene Dithiol.
039	Michela Prete *(University of Southern Denmark, SDU NanoSYD, Mads Clausen Institute)* Photochemical and Mechanical Stabilization of Organic Solar Cells Using Naturally-occurring Antioxidants
040	Victoria Ozerova *(D.Mendeleev University of Chemical Technology, Moscow, Russia)*, Lyubov Frolova, Sergey Aldoshin, Pavel Troshin Design of the defect passivation additives for enhancing the photochemical stability of lead halide perovskites
041	Mayuribala Mangrulkar *(Skoltech - Skolkovo Institute of Science and Technology, Moscow)*, Keith.J. Stevenson, Pavel Troshin Additive Approach to Enhance Intrinsic Photochemical and Thermal Stability of MAPbI3 Thin Films
042	Sergey Nikitenko *(Institute of Problems of Chemical Physics of Russian Academy of Sciences (IPCP RAS))*, Pavel Troshin, Alexander Akkuratov Polymer-based organic photovoltaic modules for powering wireless smoke sensors under indoor illumination conditions
043	Susana Ramos Terrón *(Departamento de Química Física y Termodinámica Aplicada, Instituto Universitario de Investigación en Química Fina y Nanoquímica, IUNAN, Universidad de Córdoba, Campus de Rabanales, Edificio Marie Curie, E-14071 Córdoba, Spain)*, Gustavo de Miguel Rojas, Luis Camacho Delgado A-site cation engineering in two-dimensional Ruddlesden-Popper perovskite films
044	Marina Tepliakova *(Skoltech - Skolkovo Institute of Science and Technology, Moscow)*, Alexander Akkuratov, Irina Klimovich, Ilya Kuznetsov, Pavel Troshin Conjugated Polymers for Stable and Efficient Perovskite Solar Cells: in Search of the Perfect Match



045	Mohamed Elnaggar *(Skoltech - Skolkovo Institute of Science and Technology, Moscow)*, Iliya E. Kuznetsov, Alexander V. Akkuratov, Pavel A. Troshin Alternating Thiophene-Benzothiadiazole Oligomer as Electron Transport Material for Inverted Perovskite Solar Cells
046	Qurat Ul Ain *(Lahore University of Management Sciences, LUMS D.H.A phase 5 Lahore)* Study of the Hydrophobicity Effects within Quasi-solid-state Hybrid Photovoltaic Devices
047	Marina Ustinova *(Skoltech - Skolkovo Institute of Science and Technology, Moscow)*, Maria Mikheeva, Gennady Shilov, Nadezhda Dremova, Lyubov Frolova, Sergey Aldoshin, Keith Stevenson, Pavel Troshin Partial Substitution of Pb2+ with Other Metal Cations as an Efficient Strategy to Improve the Photostability of CsPbI3 perovskite films
048	Margarita Chetyrkina *(Skoltech - Skolkovo Institute of Science and Technology, Moscow)*, Larisa Kameneva, Elena Klimanova, Tatyana Sashenkova, Ugulzhan Allayarova, Denis Mishchenko, Svetlana Kostyuk, Pavel Troshin Lead or Organics: A Comparative Toxicity Assessment for Precursor Materials Used in Perovskite Solar Cells
049	Alexandra Gordeeva *(Skoltech - Skolkovo Institute of Science and Technology, Moscow)*, Mohamed Elnaggar, Alexander Akkuratov, Pavel Troshin Improving Stability of Perovskite Solar Cells Using Conjugated Polymer-fullerene Derivative Composite as Electron Transport Layer
050	Elena Romadina *(Skoltech - Skolkovo Institute of Science and Technology, Moscow)*, Marina Tepliakova, Pavel Troshin Design and Investigation of Triarylamine Derivatives as Hole Transport Materials for Perovskite Solar Cells
051	Vera Duarte *(LEPABE- Faculdade de Engenharia, Universidade do Porto)*, Dzmitry Ivanou, Gabriel Bernardo, Luísa Andrade, Adélio Mendes Embedded Current Collectors for Efficient Large Area Perovskite Solar Cells
052	Tânia Carvalho *(University of Porto, Faculty of Engineering)*, Luísa Andrade, Adélio Mendes Scalable Slot-die Coating for Perovskite Solar Cells Deposited under Ambient Conditions
053	Cameron Underwood *(Advanced Technology Institute (ATI), University of Surrey, UK)*, J. David Carey, S. Ravi P. Silva Non-linear Band Gap Dependence of Mixed Pb-Sn 2D Ruddlesden-Popper Perovskites
054	Alexander Solodukhin *(Enikolopov Institute of Synthetic Polymer Materials of Russian Academy of Sciences)*, Yuriy Luponosov, Artur Mannanov, Dmitry Paraschuk, Sergey Ponomarenko Novel Star-shaped Donor-acceptor Molecules Based on Triphenylamine for Organic Solar Cells and Photodetectors
055	Alexander Mumyatov *(The Institute for Problems of Chemical Physics of the Russian Academy of Sciences RAS, Russia)*, Alexander Akkuratov, Ilya Kuznetsov, Sergey Tsarev, Mohamed Elnaggar, Fedor Prudnov, Lyubov Frolova Design of PV-grade Functional Materials for Perovskite Solar Cells
056	Regina Vavilina *(Mendeleev University of Chemical Technology of Russia (MUCTR), Moscow, Russia)*, Olga Yamilova, Pavel Troshin The Electrochemical Stability of P-I-N Perovskite Solar Cells Assembled Using Different Electron-transport Layer Materials
057	Dmitry O. Balakirev *(Enikolopov Institute of Synthetic Polymer Materials of Russian Academy of Sciences)*, Yuriy N. Luponosov, Artur L. Mannanov, Petr S. Savchenko, Svetlana M. Peregudova, Dmitry Yu Paraschuk, Sergei A. Ponomarenko Novel Donor Small Molecules Based on Benzotriindole: Synthesis, Properties and Application in Organic Solar Cells
058	Mariam Ahmad *(Syddansk Universitet, SDU NanoSyd, Mads Clausen Institute)*, Mehrad Ahmadpour, Dylan Amelot, Hervé Cruguel, Nadine Witkowski, Morten Madsen Unveiling the Electronic State Interplay at the DBP/4P-NPD Interface in Organic Solar Cells
059	Mohammed Amir Yakoob *(Syddansk Universitet, SDU NanoSyd, Mads Clausen Institute)*, Jani Lamminaho, Karlis Petersons, Horst-Günter Rubahn, Jan Stensborg, Morten Madsen Efficiency Enhanced Industrial-Compatible Organic Photovoltaics using Roll-To-Plate (R2P) Nanoimprint Lithography
060	Petr Kuznetsov *(Institute for Problems of Chemical Physics of Russian Academy of Sciences, Semenov Prospect 1, Chernogolovka, Moscow region, 142432, Russia)*, Ilya Kuznetsov, Sergei Nikitenko, Pavel Troshin, Alexander Akkuratov Novel Benzodithiophene-based Push-pull Copolymers for Organic Solar Cells



061 Jamie S. Laird *(School of Chemistry, The University of Melbourne)*, W. Mao, N. Chandrasekaran, C. R. Hall, T. A. Smith, J. Jasieniak, U. Bach
Novel Impedance Photocurrent Microscopy Setup for Next Gen Photovoltaics