

nanoGe International Conference on Perovskite Solar Cells, Photonics and Optoelectronics (NIPHO19)

International Conference on Perovskite Thin Film Photovoltaics

Jerusalem, Israel, 2019 February 25th - 27th

Conference Chairs: Lioz Etgar and Kai Zhu

Conference Program

February 25th - Day 2 (Monday)	
Session 1	
09:00 - 09:30 1-11	<u>Mohammad Nazeeruddin</u> (EPFL) t.b.a.
09:30 - 10:00 1-12	<u>Filippo De Angelis</u> (Computational Laboratory for Hybrid/Organic Photovoltaics (CLHYO), CNR-ISTM, Perugia, Italy) Defects, surfaces and surface defects in metal-halide perovskites
10:00 - 10:30 1-13	<u>Jacky even</u> (Univ Rennes, INSA Rennes, CNRS, Institut FOTON - UMR6082, F-35000 RENNES) Recent results on the optoelectronic properties of layered halide perovskites
10:30 - 11:00	Coffee break
Session 2	
11:00 - 11:30 2-11	<u>Prashant Kamat</u> (Department of Chemistry & Biochemistry, University of Notre Dame) Understanding Halide Ion Mobility in Lead Halide Perovskite Solar Cells
11:30 - 12:00 2-12	<u>Aditya Mohite</u> (Rice University, US) From room temperature field effect transistors to tailoring phase purity, crystallinity and orientation in 2D perovskites
12:00 - 12:30 2-13	<u>Qingbo Meng</u> (Beijing Key Laboratory for New Energy Materials & Devices, Key Laboratory for Renewable Energy (CAS), Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences (CAS), Beijing 100190, China Center of Materials Science and Optoelectronics Engineering University of Chinese Academy of Sciences, Beijing 100049, China), Dongmei Li, Jiangjian Shi, Yanhong Luo, Yanhong Wu Investigation on stability of perovskite solar cells: from Materials to Devices
12:30 - 14:45	Lunch
February 26th - Day 3 (Tuesday)	
Session 5	
09:00 - 09:30 5-11	<u>Tsutomu Miyasaka</u> (Toin University of Yokohama) Enhancing photovoltaic performance and stability of all-inorganic and lead-free absorbers
09:30 - 10:00 5-12	<u>Steve Albrecht</u> (Young Investigator Group Perovskite Tandem Solar Cells, Helmholtz-Center Berlin) Towards Highly Efficient Monolithic Tandem Devices with Perovskite Top Cells
10:00 - 10:30 5-13	<u>David Cahen</u> (Department of Materials and Interfaces, Weizmann Institute of Science, Rehovoth 76100, Israel.) How can Halide Perovskites have such low defect densities?
10:30 - 11:00	Coffee Break
Session 6	
11:00 - 11:30 6-11	<u>Nam-Gyu Park</u> (Sungkyunkwan University, Suwon 16419, Korea) D-bar Coating and Bi-facial Stamping Approaches for Scalable Perovskite Solar Cells

11:30 - 12:00	<u>Michael Saliba</u> (<i>Adolphe Merkle Institute, University of Fribourg, CH-1700 Fribourg, Switzerland</i>)
6-12	The versatility of polyelemental perovskite compositions
12:00 - 12:30	<u>Efrat Lifshitz</u> (<i>Technion – Israel Institute of Technology, Haifa, Israel</i>), Maya Isarov, Alyssa Kostadinov, Maryna Bodnarchuk, Maksym Kovalenko, Liang Tan, Andrew Rappe
6-13	Spin properties in halide-perovskite nanocrystal and bulk structures
12:30 - 13:00	<u>Ana Flavia Nogueira</u> (<i>Laboratory of Nanotechnology and Solar Energy, Institute of Chemistry, University of Campinas – UNICAMP</i>)
6-14	Synchrotron radiation applied to the characterization of perovskite films: morphology, structure and composition

13:00 - 14:45 **Lunch**

February 27th - Day 4 (Wednesday)

12:30 - 14:45 **Lunch**

Poster Contribution

056	<u>Ausra Morkunaite, Thomas Schnabel</u> (<i>Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), 70563 Stuttgart, Germany</i>), Cordula Wessendorf, Erik Ahlswede Thermal and moisture stability of methylammonium lead iodide based perovskite solar cells
057	<u>Shir Yudco</u> (<i>Institute of Chemistry, the Hebrew university, Jerusalem 9190401, Israel</i>), Lioz Etgar The effect of NH ₄ SCN as an additive in 2D perovskite solar cells
058	<u>Stav Alon</u> (<i>Institute of Chemistry, the Hebrew university, Jerusalem 9190401, Israel</i>), Lioz Etgar Two step deposition of mix cation mix halide in carbon based solar cells
059	<u>Johannes Sutter</u> (<i>Young Investigator Group Nanostructured Silicon for Photonic and Photovoltaic Implementations, Helmholtz-Center Berlin</i>), David Eisenhauer, Philipp Tockhorn, Katrin Hirslandt, Steve Albrecht, Christiane Becker Tailor-Made Light Management Nano-Structures for Perovskite-Silicon Tandem Solar Cells
061	<u>Julia Zillner</u> (<i>Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), Meitnerstrasse 1, 70563 Stuttgart, Germany</i>), Cordula Wessendorf, Jonas Hanisch, Erik Ahlswede, Michael Powalla Lead-free Bi-based perovskite solar cells: Morphology and band-gap tuning
063	Natalia Mahon, <u>Mark Khenkin</u> (<i>Dept. of Solar Energy and Environmental Physics, Swiss Inst. for Dryland Environmental and Energy Research, J. Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Midreshet Ben-Gurion 8499000, Israel</i>), O. Korolik, Georgios Arnaoutakis, Yulia Galagan, Patric Ščajev, Alexander Mazanik, Eugene Katz Photoluminescence kinetics at various fabrication steps of perovskite photovoltaics
064	<u>Luis Lanzetta</u> (<i>Department of Chemistry and Centre for Plastic Electronics, Imperial College London, South Kensington Campus, London SW7 2AZ, United Kingdom</i>), Bowon Yoo, Sozos Michael, Saif A. Haque Exploring Charge Separation and Recombination Processes in 2D/3D Hybrid Tin Halide Perovskites
065	<u>Maayan Perez</u> (<i>Department of Materials Engineering, Ben-Gurion University of the Negev</i>), Saar Peled, Yuval Golan A New Two-Step Method Towards MAPbI ₃ Perovskite Films
066	<u>Sa'ar Peled</u> (<i>Ilse Katz Institute for Nanoscale Science and Technology, and the Department of Materials Engineering, Ben Gurion University of the Negev, Israel</i>), Maayan Perez, Yuval Golan Two-Step Conversion of PbSe Thin Films to Perovskites
067	<u>Georgios E. Arnaoutakis</u> (<i>Dept. of Solar Energy and Environmental Physics, J. Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev, Midreshet Ben-Gurion, 84990, Israel</i>), Natalya Samoylova, Mark V. Khenkin, Renjun Guo, Eugene A. Katz Sunlight confocal photoluminescence spectroscopy of perovskite thin films
068	<u>Provas Pal</u> (<i>Department of Chemistry & Casali centre for Applied Chemistry, The Hebrew University of Jerusalem</i>), Lioz Etgar Printable Semi-transparent Perovskite based Solar Cells

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Conference Program

February 25th - Day 2 (Monday)	
12:30 - 14:45	Lunch
February 27th - Day 4 (Wednesday)	
	Session A Chair: Paul Meredith
09:00 - 09:30 A-I1	<u>Maksym Kovalenko</u> (<i>Laboratory of Inorganic Chemistry, Department of Chemistry & Applied Biosciences, ETH Zurich</i>) Highly Luminescent Nanocrystals of Cesium and Formamidinium Lead Halide Perovskites: From Discovery to Applications
09:30 - 10:00 A-I2	<u>Samuel Stranks</u> (<i>Cavendish Laboratory, Department of Physics, University of Cambridge, JJ Thomson Avenue, Cambridge CB3 0HE, UK.</i>) Strain-related power losses in perovskite solar cells
10:00 - 10:30 A-I3	<u>Hernán Míguez</u> (<i>Multifunctional Optical Materials Group, Instituto de Ciencia de Materiales de Sevilla, Consejo Superior de Investigaciones Científicas-Universidad de Sevilla</i>), David O. Tiede, Andrea Rubino, Mauricio E. Calvo, Juan F. Galisteo-López Photoemission Properties of Perovskite Thin Films, Microcrystals and Nanocrystals
10:30 - 11:00	Coffee Break
	Session B Chair: ADITYA MOHITE
11:00 - 11:30 B-I1	<u>Iván Mora-Seró</u> (<i>Institute of Advanced Materials (INAM), Universitat Jaume I, 12071 Castelló, Spain</i>) Application of Perovskite Nanoparticles in Photovoltaic Devices: Advantages and Limitations
11:30 - 12:00 B-I2	<u>Sandford Ruhman</u> (<i>Institute of Chemistry, the Hebrew university, Jerusalem 9190401, Israel</i>), Tufan Ghosh, Sigalit Aharon, Adva Shpatz, Lioz Etgar Ultrafast investigation of lead halide perovskite nanocrystals and thin films
12:00 - 12:30 B-I3	<u>David Fenning</u> (<i>University of California, San Diego</i>) Probing Defects in Perovskites and their Impact on Optoelectronic Performance using Nanoprobe Microscopy
12:30 - 14:45	Lunch
	Session C
14:45 - 15:00 C-O1	<u>Philipp Brenner</u> (<i>Light Technology Institute, Karlsruhe Institute of Technology, Karlsruhe, 76131, Germany</i>), Ofer Bar-On, Marius Jakoby, Isabel Allegro, Bryce S. Richards, Ulrich W. Paetzold, Ian A. Howard, Jacob Scheuer, Uli Lemmer Mixed Cation Perovskites Enabling Continuous Wave Amplified Spontaneous Emission in a Single Phase
15:00 - 15:15 C-O2	<u>Ayala Cohen</u> (<i>Department of Materials and Interfaces, Weizmann Institute of Science, Rehovoth 76100, Israel.</i>) Breakdown of the static picture of defect energetics in halide perovskites: the case of the Br vacancy in CsPbBr ₃
15:15 - 15:30 C-O3	<u>Sigalit Aharon</u> (<i>Institute of Chemistry, Casali Center for Applied Chemistry, The Hebrew University of Jerusalem, Jerusalem 91904, Israel</i>), Lioz Etgar The synthesis and characterization of Highly emissive, tunable Zero dimensional perovskite materials

15:30 - 15:45 **Miri Kazes** (*Department of physics of Complex Systems, Weizmann Institute of Science, Rehovot 76100, Israel*),
C-O4
Thumu Udayabhaskararao, Dan Oron
Ligand mediated phase and habit transformations of perovskite nanocrystals

Session D

Chair: David Fenning

14:45 - 15:00 **Christiane Becker** (*Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, 12489 Berlin, Germany*), Sven
D-O1
Burger, Carlo Barth, Phillip Manley, Klaus Jäger, David Eisenhauer, Grit Köppel, Pavel Chabera, Junsheng
Chen, Kaibo Zheng, Tönu Pullerits
Nanophotonic Enhanced Multiphoton-Excited Photoluminescence of Perovskite Quantum Dots

15:00 - 15:15 **SWAYANDIPTA DEY** (*Department of Physics of Complex Systems, Weizmann Institute of Science, Rehovot
D-O2 76100, Israel*), MIRI KAZES, HAGAI COHEN, IDDO PINKAS, DAN ORON
Influence of molecular linkers on photoinduced charge transfer dynamics in CsPbBr₃-CdSe nanoplatelet hybrids

15:15 - 15:30 Ibrahim Dursun, Yangzi Zheng, **Yuri Gartstein** (*The University of Texas at Dallas, Department of Physics*),
D-O3
Osman Bakr, Omar Mohammed, Anton Malko
Direct Time-Resolved Spectroscopic Probes of Photon Reabsorption in Lead Halide Perovskite Microwires

15:30 - 15:45 **Grigorios Itskos** (*Experimental Condensed Matter Physics Lab, Department of Physics, University of Cyprus,
D-O4 1678 Cyprus*), Paris Papagiorgis, Andreas Manoli, Andreas Othonos, Maryna Bodnarchuk, Maksym Kovalenko
Stimulated Emission in Formamidinium Lead Iodide Perovskite Nanocrystals

Poster Contribution

051 **Chandra Shakher Pathak** (*Department of Solar Energy and Environmental Physics, Swiss Institute for Dryland
Environmental and Energy Research, Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the
Negev,*), Iris Visoly-Fisher
Mapping the photocurrent and photovoltage of perovskite films at the nanoscale for stability studies

052 **Anoop K.M.** (*Dept. of Solar Energy and Environmental Physics, Swiss Inst. for Dryland Environmental and Energy
Research, J. Blaustein Institutes for Desert Research*), Mark V. Khenkin, Renjun Guo, Eugene A. Katz, Iris Visoly-Fisher,
Yulia Galagan, Francesco Di Giacomo, Olivera Vukovic, Stav Rahmany, Lioz Etgar
Concentrated Sunlight for Accelerated Stability Studies of Perovskite Solar Cells

053 **Dongmei Li** (*Institute of Physics, Chinese Academy of Sciences*), Qingbo Meng
Interfacial engineering to improve the stability of perovskite solar cells

054 **Sampson Adjokatse** (*Photophysics and OptoElectronics, Zernike Institute for Advanced Materials, University of
Groningen, Nijenborgh 4, 9747 AG, The Netherlands*), Hong-Hua Fang, Herman Duim, Maria Antonietta Loi
Scalable Fabrication of High-quality Crystalline and Stable FAPbI₃ Thin Films by Combined Doctor-blade Coating and
Cation Exchange Reaction

060 **Tal Binyamin** (*Hebrew University of Jerusalem, IL*), Lioz Etgar
New Synthesis of Lead Free Perovskite Nano Particles with the formula CsSnBr₃ to increase stability and optical
properties.

062 **Ferdinand Grozema** (*Department of Chemical Engineering, Delft University of Technology, van der Maasweg 9, 2629 HZ
Delft, The Netherlands*)
Dipolar Disorder, Localised States and their Effect on Charge Transport in Perovskites