



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

International Conference on Perovskite Thin Film Photovoltaics

February 24th - Day 1 (Sunday)

16:30 - 19:00 Registration

February 25th - Day 2 (Monday)

Session 1

Chair: Lioz Etgar

09:00 - 09:30
1-1 Mohammad Nazeeruddin (EPFL)
2-Dimensional / 3-Dimensional Layered Perovskites for Stable and Efficient

09:30 - 10:00
1-2 Prashant Kamat (Radiation Laboratory, Department of Chemistry & Biochemistry, University of Notre Dame)
Understanding Halide Ion Mobility in Lead Halide Perovskite Solar Cells

10:00 - 10:30
1-3 Jacky Even (Univ Rennes, INSA Rennes, CNRS, Institut FOTON)
Recent Results on the Optoelectronic Properties of Layered Halide Perovskites

10:30 - 11:00 Coffee Break

Session 2

Chair: Jacky Even

11:00 - 11:30
2-1 Filippo De Angelis (Computational Laboratory for Hybrid/Organic Photovoltaics (CLHYO), CNR-ISTM, Perugia, Italy)
Defects, Surfaces and Surface Defects in Metal-Halide Perovskites

11:30 - 12:00
2-2 Aditya Mohite (Rice University, US)
From Room Temperature Field Effect Transistors to Tailoring Phase Purity, Crystallinity and Orientation in 2D Perovskites

12:00 - 12:30
2-3 Qingbo Meng (Institute of Physics, Chinese Academy of Sciences), Dongmei Li, Jiangjian Shi, Yanhong Luo, Yanhong Wu
Investigation on stability of perovskite solar cells: from Materials to Devices

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

Session A

Chair: Prashant Kamat

14:45 - 15:00
A-01 Iris Visoly-Fisher (Ben-Gurion University of the Negev, IL), Mark V. Khenkin, K.M. Anoop, Yulia Galagan, Stav Rahmany, Lioz Etgar, Eugene A. Katz
Bias-Dependent Stability of Perovskite Solar Cells: Degradation Mechanisms Reconsidered

15:00 - 15:15
A-02 Bat-El Cohen (The Hebrew University of Jerusalem, IL)
Low-Dimensional Perovskite for High Efficiency and High Voltage Solar Cells

15:15 - 15:30
A-03 Florian Mathies (Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, 12489 Berlin, Germany), Katrin Hirslandt, Oleksandra Shagaieva, Ulrich W. Paetzold, Uli Lemmer, Eva Unger
Insights into Scalable Inkjet Printing for Perovskite Solar Cells

- 15:30 - 15:45
A-O4 Stav Rahmany (*Institute of Chemistry, The Hebrew University of Jerusalem, IL*), Lioz Etgar
Halide Exchange in Solid State Mixed Cation Hybrid Perovskite
- 15:45 - 16:00
A-O5 María Camila Gelvez-Rueda (*Delft University of Technology, NL*), Ferdinand C. Grozema
Extending the Functionality of the Organic Layer in 2D Hybrid Perovskites
- 16:00 - 16:15
A-O6 Fabian Ruf (*Karlsruhe Institute of Technology (KIT), DE*), Pascal Rietz, Meltem F. Aygüler, Pablo Docampo, Heinz Kalt, Michael Hetterich
Reversible Bandgap Instabilities in Multiple-Cation Mixed-Halide Perovskite Solar Cells
- 16:15 - 16:30
A-O7 Ferdinand Grozema (*Delft University of Technology, NL*)
Dipolar Disorder, Localised States and their Effect on Charge Transport in Perovskites
- 16:30 - 16:45
A-O8 Jonathan Lehr (*Karlsruhe Institute of Technology*), Malte Langenhorst, Raphael Schmager, Uli Lemmer, Bryce Richards, Ulrich Paetzold
Energy Yield Modelling of Textured Perovskite/Silicon Two-Terminal Tandem Photovoltaic Modules
- Session B**
Chair: Aditya Mohite
- 14:45 - 15:00
B-O1 Aboma Merdasa (*Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, 12489 Berlin, Germany*), Alexandros Kiligaris, Carolin Rehmann, Mojtaba Abdi-Jalebi, Jonas Stöbar, Boris Louis Marina Gerhard, Samuel D. Stranks, Eva L. Unger, Ivan G. Scheblykin
The Impact of Lead Iodide on the Recombination Kinetics in Metal Halide Perovskite Films
- 15:00 - 15:15
B-O1 Juan Bisquert (*Institute of Advanced Materials (INAM), Universitat Jaume I, ES*)
Electrical Switching of Photoluminescence by Ion Displacement in Metal Halide Perovskite
- 15:15 - 15:30
B-O2 Thomas Dittrich, Qin Tan (*Helmholtz-Zentrum Berlin*), Karsten Hinrichs, Steffen Fengler, Jörg Rappich, Pongthep Prajongtat, Norbert H. Nickel
Temperature Dependent DMSO Diffusion during CH₃NH₃PbI₃ Layer Formation
- 15:30 - 15:45
B-O3 Arun Singh Chouhan (*Center for Nanoscience & Engineering, Indian Institute of Science, IN*), Naga Prathibha Jasti, Sushobhan Avasthi
Surface Modification of Aluminum Doped Zinc Oxide by Ozone-Gas Treatment for Perovskite Solar Cells
- 15:45 - 16:00
B-O4 Çagla Odabası Özer (*Bosaziçi Üniversitesi*), Ramazan Yildirim
Machine Learning Approach to Performance Analysis of Perovskite Solar Cells
- 16:00 - 16:15
B-O5 Adva Shpatz Dayan (*The Hebrew University of Jerusalem, The Institute of Chemistry, Casali Center of Applied Chemistry, IL*)
Enhancing Stability and Photostability of CsPbI₃ by Reducing Its Dimensionality
- 16:15 - 16:30
B-O6 Jeremy Barbe (*1 SPECIFIC, College of Engineering, Swansea University Bay Campus, Fabian Way, SA1 8EN Swansea, United Kingdom*), Harry Lakhiani, Francesca De Rossi, Tom Dunlop, Michael Newman, Samuele Lilliu, Vikas Kumar, Harrison Ka Hin Lee, Cecile Charbonneau, Cornelia Rodenburg, Trystan Watson, David Lidzey, Wing Chung Tsoi
Investigation of Perovskite Solar Cells Homogeneity and Defects by Complementary High-Resolution Mapping Techniques
- 16:30 - 16:45
B-O7 Pavel Troshin (*Skoltech*)
Towards Understanding the Electrochemical Degradation Pathways of Lead Halide Based Perovskites

February 26th - Day 3 (Tuesday)

Session 3

Chair: Kai Zhu

09:00 - 09:30
3-I1 Tsutomu Miyasaka (*Toin University of Yokohama, JP*)
Enhancing Photovoltaic Performance and Stability of All-inorganic and Lead-free Absorbers

09:30 - 10:00
3-I2 Steve Albrecht (*HZB*)
Towards Highly Efficient Monolithic Tandem Devices with Perovskite Top Cells

10:00 - 10:30
3-I3 David Cahen (*Weizmann Institute of Science & Bar Ilan University*)
How Can Halide Perovskites Have such Low Defect Densities?

10:30 - 11:00 **Coffee Break**

Session 4

Chair: Tsutomu Miyasaka

11:00 - 11:30
2-I1 Nam-Gyu Park (*Sungkyunkwan University, KR*)
D-bar Coating and Bi-facial Stamping Approaches for Scalable Perovskite Solar Cells

11:30 - 12:00
2-I2 Michael Saliba (*Adolphe Merkle Institute, University of Fribourg, CH-1700 Fribourg, Switzerland*)
The Versatility of Polyelemental Perovskite Compositions

12:00 - 12:30
2-I3 Efrat Lifshitz (*Technion, IL*), Maya Isarov, Alyssa Kostadinov, Maryna Bodnarchuk, Maksym Kovalenko, Liang Tan, Andrew Rappe
Spin Properties in Halide-perovskite Nanocrystal and Bulk Structures

12:30 - 13:00
4-I4 Ana Flavia Nogueira (*University of Campinas, BR*)
Synchrotron Radiation Applied to the Characterization of Perovskite Films: Morphology, Structure and Composition

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

Session C

Chair: Iván Mora-Seró

14:45 - 15:00
C-O1 Nir Tessler (*Technion – Israel Institute of Technology*)
Perovskite Solar cells - the Role of Ions, Density of States, and Device Structure

15:00 - 15:15
C-O2 Stylianios Choulis (*Cyprus University of Technology*)
Materials Interface Engineering for High Performance Inverted Perovskite Photovoltaics

15:15 - 15:30
C-O3 Monika Rai (*Nanyang Technological University (NTU), Singapore*), Stav Rahmany, Shlomo Magdassi, Lioz Etgar, Lydia Helena Wong, Seww Sien Lim
Hot Dipping Post Treatment for Improved Efficiency in Micro Patterned Semitransparent Perovskite Solar Cell

Session D

Chair: Michael Saliba

14:45 - 15:00
C-O1 Renjun Guo, Mark V. Khenkin, Georgios Arnaoutakis, Nataliya Samoylova, Ambrose A. Melvin, Jeremy Barbe, Harrison Ka Hin Lee, Wing Chung Tsoi, Iris Visoly-Fisher, Eugene Katz (*Ben-Gurion University of the Negev, IL*)
Initial Stages of Photo-degradation of MAPBI3 Perovskite: Accelerated Study by Concentrated Sunlight

15:00 - 15:15
D-O1 Luis Lanzetta (*Imperial College London*)
Exploring Charge Separation and Recombination Processes in 2D/3D Hybrid Tin Halide Perovskites

15:15 - 15:30
D-O2 N. H. Nickel (*Institute for Silicon Photovoltaics*), F. Lang S. Kilian Kilian, J Rappich
Improved Stability of Organic-inorganic Halide Perovskites



February 27h - Day 4 (Wednesday)

Session 5

Chair: Paul Meredith

- 09:00 - 09:30
1-11 Maksym Kovalenko (*ETH Zurich, CH*)
Highly Luminescent Nanocrystals of Cesium and Formamidinium Lead Halide Perovskites: From Discovery to Applications
- 09:30 - 10:00
1-12 Samuel D. Stranks (*University of Cambridge, GB*)
Strain-related Power Losses in Perovskite Solar Cells
- 10:00 - 10:30
1-13 Hernán Míguez (*Consejo Superior de Investigaciones Científicas (CSIC), ES*)
Photoemission Properties of Perovskite Thin Films, Microcrystals and Nanocrystal
- 10:30 - 11:00 **Coffee Break**

Session 6

Chair: Aditya Mohite

- 11:00 - 11:30
2-11 Iván Mora-Seró (*Institute of Advanced Materials (INAM), Universitat Jaume I, ES*)
Application of Perovskite Nanoparticles in Photovoltaic Devices: Advantages and Limitations
- 11:30 - 12:00
2-12 Sanford Ruhman (*The Hebrew University of Jerusalem, The Institute of Chemistry, Casali Center of Applied Chemistry, IL*)
Ultrafast Investigation of Lead Halide Perovskite Nanocrystals and Thin Films
- 12:00 - 12:30
2-13 David Fenning (*University of California San Diego, US*)
Probing Defects in Perovskites and their Impact on Optoelectronic Performance using Nanoprobe Microscopy
- 12:30 - 14:45 **Lunch**

Session E

Chair: Maksym Kovalenko

- 14:45 - 15:00
E-O1 Philipp Brenner (*Light Technology Institute, Karlsruhe Institute of Technology, Karlsruhe, 76131, Germany*)
Mixed Cation Perovskites Enabling Continuous Wave Amplified Spontaneous Emission in a Single Phase
- 15:00 - 15:15
E-O2 Ayala Cohen (*Weizmann Institute of Science, IL*)
Breakdown of the Static Picture of Defect Energetics in Halide Perovskites: the Case of the Br Vacancy in CsPbBr₃
- 15:15 - 15:30
E-O3
- 15:30 - 15:45
E-O4 Miri Kazes (*Weizmann Institute of Science, IL*)
Ligand Mediated Phase and Habit Transformations of Perovskite Nanocrystals



Session F

Chair: David Fenning

- 14:45 - 15:00
F-O1 Christiane Becker (*Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany*)
Nanophotonic Enhanced Multiphoton-Excited Photoluminescence of Perovskite Quantum Dots
- 15:00 - 15:15
F-O2 Swayandipta Dey (*Weizmann Institute of Science, IL*)
Influence of Molecular Linkers on Photoinduced Charge Transfer Dynamics in CsPbBr₃-CdSe Nanoplatelet Hybrids
- 15:15 - 15:30
F-O3 Yuri Gartstein (*The University of Texas at Dallas, US*)
Direct Time-Resolved Spectroscopic Probes of Photon Reabsorption in Lead Halide Perovskite Microwires
- 15:30 - 15:45
F-O4 Grigorios Itskos (*University of Cyprus, CY*)
Stimulated Emission in Formamidinium Lead Iodide Perovskite Nanocrystals
- 15:45 - 16:00 Closing

- 051 **Chandra Shakher Pathak**, Iris Visoly-Fisher
Mapping the Photocurrent and Photovoltage of Perovskite Films at the Nanoscale for Stability Studies
- 052 **Anoop K.M.**, 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**, Qingbo Meng
Interfacial Engineering to Improve the Stability of Perovskite Solar Cells
- 054 **Sampson Adjokatse**, 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
- 056 Ausra Morkunaite, **Thomas Schnabel**, Cordula Wessendorf, Erik Ahlswede
Thermal and Moisture Stability of Methylammonium Lead Iodide Based Perovskite Solar Cells
- 057 **Shir Yudco**, Lioz Etgar
The Effect of NH₄SCN as an Additive in 2D Perovskite Solar Cells
- 058 **Stav Alon**, Lioz Etgar
Two Step Deposition of Mix Cation Mix Halide in Carbon Based Solar Cells
- 059 **Johannes Sutter**, David Eisenhauer, Philipp Tockhorn, Katrin Hirselandt, Steve Albrecht, Christiane Becker
Tailor-Made Light Management Nano-Structures for Perovskite-Silicon Tandem Solar Cells
- 060 **Tal Binyamin**, Lioz Etgar
New Synthesis of Lead Free Perovskite Nano Particles with the Formula CsSnBr₃ to Increase Stability and Optical Properties
- 061 **Julia Zillner**, Cordula Wessendorf, Jonas Hanisch, Erik Ahlswede, Michael Powalla
Lead-free Bi-based Perovskite Solar Cells: Morphology and Band-gap Tuning
- 067 **Georgios E. Arnaoutakis**, Natalya Samoylova, Mark V. Khenkin, Renjun Guo, Eugene A. Katz
Sunlight Confocal Photoluminescence Spectroscopy of Perovskite Thin Films
- 068 **Provas Pal**, Lioz Etgar
Printable Semi-transparent Perovskite based Solar Cells
- 069 **Alain Rolland**, Y. Huang, B. Traore, L. Pedesseau, M. Kepenekian, Claudine Katan, Lioz Etgar, J. Even
From Atomistic Scale to Device Modelling



- 070 **Arthur Shapiro**, Markus Heindl, Faris Horani, Itay Meir, Meir-Haim Dahan, Yaron Amouyal, Efrat Lifshitz
Room Temperature Post-Treatment of Ni-Doped Cesium Lead Halide Perovskites with Ni Shell and Improved PLQY
- 071 **Anjani Nagvenkar**, Laxman Gouda, Ilana Perelshtein, Aharon Gedanken
Highly Oriented Stable Thin Films of γ -CsPbI₃: Fabrication from MoS₂ Induced Sonochemically Synthesized Colloidal Nanocrystals and the Degradation Studies