



אוניברסיטת בן-גוריון בנגב
Ben-Gurion University
of the Negev

Program
21st Sede Boqer Symposium
on Solar Electricity Production
March 7-8, 2018

Organizing Committee:

Eugene A Katz
Daniel Feuermann
Arik Yochelis

Wednesday, March 7, 2018

9:00 – 9:30 Arrival and Registration at the George Evens Family Auditorium, Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev (Midreshet Ben-Gurion)

9:30-10:00 **Opening Greetings – 21st Sede Boqer Symposium**

Chair: Prof. **Eugene Katz**, Blaustein Institutes, BGU
Prof. **Rivka Carmi**, President, Ben-Gurion University

Prof. **Boris Zaltzman**, Director, Blaustein Institutes, BGU
Israel's Ministry of Energy

Sponsors:



The Jacob Blaustein Center for Scientific Cooperation
The Jacob Blaustein Institutes for Desert Research
Ben-Gurion University of the Negev



GREEN CAMPUS
Ben-Gurion University of the Negev an excellent environment

- 10:00-11:30** **Session 1.1: Basic processes in photovoltaic conversion**
 Session chair: David Cahen (Weizmann Institute of Science)
- 10:00-10:30 Invited talk: **Natalie Stingelin** (Georgia Tech)
Solution-Processed Photovoltaics: Challenges and Opportunities through Materials and Interface Engineering
- 10:30-11:00 Invited talk: **Carlos Silva** (Georgia Tech)
Stable Biexcitons in Two-Dimensional Lead-halide Perovskites with Strong Dynamic Lattice Disorder
- 11:00-11:30 Invited talk: **Anna Köhler** (Bayreuth University)
The Impact of Coherence Effects on Charge Separation in Organic Solar Cells
- 11:30-11:45** **Coffee break**
- 11:45-12:30** **Session 1.2: Keynote**
 Session chair: Avner Rothschild (Technion)
- Michael Grätzel**
 Ecole Polytechnique Federale de Lausanne
“Metal Halide Perovskites as Powerful Light Harvesters for the Generation of Electricity and Fuels from Sunlight”
- 12:30-13:45** **Lunch**
- 13:45-14:45** **Poster session I in lobby of Evens Auditorium**
- 14:45-16:30** **Session 1.3: Perovskite-based Photovoltaic Materials and Devices**
 Session chair: Lioz Etgar (Hebrew University of Jerusalem)
- 14:45-15:15 Invited talk: **Shengzhang (Frank) Liu** (Shaanxi Normal University)
Perovskite – a Wonder for Photovoltaic & Optoelectronic Applications
- 15:15-15:45 Invited talk: **Pavel Troshin** (Institute for Problems of Chemical Physics, Russian Academy of Sciences)
Bulk and Interface-induced Degradation Effects Governing the Operation Stability of Perovskite Solar Cells
- 15:45-16:00 **Mark Khenkin** (Ben-Gurion University)
Dynamics of Photoinduced Degradation of Perovskite Photovoltaics: From Reversible to Irreversible Processes
- 16:00-16:15 **Eva L. Unger** (Helmholtz-Zentrum Berlin, Lund University)
Ionic (In)homogeneity in Metal-halide Perovskites
- 16:15-16:30 **Eva Majkova** (Institute of Physics, Bratislava)
Time-resolved GIWAXS Studies of Organometallic Perovskite Layer Structure Annealed at Various Temperatures
- 16:30-16:45** **Coffee break**

16:45-17:30 **Session 1.4: Keynote**
Session chair: Arik Yochelis (Blaustein Institutes, BGU)

Katharina Krischer

Technische Universität München

“Solar Fuel Generation with Plasmonic Photoelectrochemistry”

17:30-19:00 **Session 1.5: New Approaches for Solar Energy Conversion**
Session chair: Carmel Rothschild (Technion)

17:30-18:00 Invited talk: **Alexis Vossier** (Centre National de la Recherche Scientifique)
Performance Bounds for Hybrid Solar PV/Thermal Electricity Generation Strategies

18:00-18:30 Invited talk: **Efthymios Klampafitis** (Karlsruhe Institute of Technology (KIT))
Adding Functionalities to PV Modules: Colour, Shape and Anti-soiling

18:30-18:45 **Nimrod Kruger** (Technion – Israel Institute of Technology)
Thermal Photo-Luminescence Photovoltaics as High Efficiency Conversion Devices

18:45-19:00 **Yifat Piekner** (Technion – Israel Institute of Technology)
Tandem Photovoltaic-Photoelectrochemical Cells for Solar Water Splitting

19:30 **Festive dinner**

21:00 **Bus returns to Beer-Sheva at the end of the evening**

Thursday, March 8, 2018

- 9:00 – 9:30** Arrival at the George Evens Family Auditorium, Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev (Midreshet Ben-Gurion)
(and checking out of rooms)
- 9:30-11:00** **Session 2.1: Solar Fuels**
Session chair: Katharina Krischer (Technische Universität München)
- 9:30-10:00 Invited talk: **Noam Adir** (Technion – Israel Institute of Technology)
Utilizing Photosynthetic Complexes for Solar Energy Conversion: Building a Biogenerator
- 10:00-10:15 **Yotam Avital** (Ben-Gurion University)
H₂O₂ Photo-oxidation on Hematite Electrodes: A Tale of Two Sites
- 10:15-10:30 **Maytal Caspary Toroker** (Technion – Israel Institute of Technology)
Recent Advances in ab-initio Modeling Iron Oxide Water Splitting
- 10:30-10:45 **Yuval Ben-Shahar** (Hebrew University of Jerusalem)
Semiconductor-Metal Hybrid Nanorods as Photocatalysts
- 10:45-11:00 **Oren Meiron** (Ben-Gurion University)
Designing Nano-catalysts for the Hydrogen Evolution Reaction
- 11:00-11:15** **Coffee break**
- 11:15-12:00** **Session 2.2: Keynote**
Session Chair: Muhammad Bashouti (Blaustein Institutes, BGU)
- Silke Christiansen**
Helmholtz-Zentrum Berlin für Materialien und Energie (HZB)
“Three-dimensional Nano-architectures for Solar Energy Conversion - Synthesis, Characterization and Device Integration”
- 12:00-13:15** **Lunch**
- 13:15-14:15** **Poster session II in lobby of Evens Auditorium**
- 14:15-15:30** **Session 2.3: Broader Perspectives for Solar Energy Conversion**
Session chair: David Faiman (Blaustein Institutes, BGU)
- 14:15-14:30 **Avi Niv** (Ben-Gurion University)
Optical Rectification and Second Harmonic Generation from Nano-scaled Metallic Heterodimer
- 14:30-14:45 **Muhammad Bashouti** (Ben-Gurion University)
Molecular Surface Approach for Efficient Solar Cells
- 14:45-15:00 **A.A. Solomon** (Lappeenranta University of Technology)
Solar Driven Net Zero Emission Electricity Supply with Negligible Carbon Cost: Israel as a Case Study for Sun Belt Countries
- 15:00-15:15 **Doron Azulay** (Hebrew University of Jerusalem)
Investigating Thin Film Absorbers by Combined Scanning Tunneling Spectroscopy and Photo-transport Measurements

- 15:15-15:30 **Adam Ginsburg** (Bar-Ilan University)
Solid State ITO/Au-NPs/TiO₂ Plasmonic Based Solar Cells
- 15:30-16:00 Coffee break**
- 16:00-17:00 Session 2.4: Organic Photovoltaics**
Session chair: Iris Visoly-Fisher (Blaustein Institutes, BGU)
- 16:00-16:30 Invited talk: **Garry Rumbles** (National Renewable Energy Laboratory)
A Perspective on the Learnings of OPV
- 16:30-17:00 Invited talk: **Gitti Frey** (Technion)
Molecular Mobility in Organic Solar Cells – a Mixed Blessing
- 17:00-17:15 **Giovanni Matrone** (Imperial College London)
Not all Roads Lead to Phase Separation — A Polymer Science Approach to Predict and Manipulate the Morphology of Bulk Heterojunctions Solar Cells
- 17:15-17:30 **Jeffrey Kettle** (Bangor University)
Characteristics of Organic and Perovskite Photovoltaic Modules Monitored Outdoors
- 17:30:17:45 Closing remarks Daniel Feuermann** (Blaustein Institutes, BGU)
- 18:00 Bus returns to Beer-Sheva**

To see the full program, registration and other information, see [http://in.Ben-Gurion University.ac.il/en/solar/Pages/Symposium.aspx](http://in.Ben-GurionUniversity.ac.il/en/solar/Pages/Symposium.aspx), or write to sbsolarsymposium@bgu.ac.il.