

Hybrid and Organic Photovoltaics Conference (HOPV14) – Lausanne, Switzerland, 2014

Oral Lectures Program

11 May 2014 – Day 0 (Sunday)

17.00 – 19.30 Registration opened

19.30 – 21.30 Welcome reception

12 May 2014 Day 1 (Monday)

Main Hall – Room A

Chair: Jean Frechet

8.00 – 8.10	Welcome of guests: Michael Grätzel / Md. K. Nazeeruddin
8.10 – 8.20	Opening address: Phillipe Gillet. Vice President of Academic Affairs at the EPFL
8.20 - 8.30	Opening talk: Leopold Demiddeleer. Director for the Solvay Group
8.30 – 9.05	<u>Eli Yablonovitch</u> : The Opto-Electronic Physics Which Just Broke the Efficiency Record in Solar Cells
9.05 – 9.40	<u>Jean-Luc Bredas</u> : A Multiscale Computational Approach to the Electronic and Optical Processes in Organic Solar Cells
9.40 – 10.00	<u>Jacques-E. Moser</u> : Time-Resolved Spectroscopy Insights into the Charge Transfer Processes in Perovskite Solar Cells
10.00 – 10.25	<u>Hiroshi Segawa</u> : Future Prospects of Organic and Hybrid Solar Cells for Next Generation Photovoltaics

10.25 – 10.55 Tea Break

Main Hall – Room A

Chair: Anders Hagfeldt

10.55 – 11.20	<u>Gerald Meyer</u> : The Roles of Iodide Ions in Dye Sensitized Solar Cells
11.20 – 11.45	<u>Ursula Rothlisberger</u> : Computational Studies of Solid State Perovskite for Solar Cell Applications: Structural, Electronic and Transport Properties
11.45 – 12.10	<u>Natalie Stingelin</u> : On the Role of Intermixed Phases in Organic Photovoltaic Blends
12.10 – 12.35	<u>Alex Jen</u> : Rational Material Design, Interface, and Device Engineering for High-Performance and Stable Polymer Solar Cells
12.35 – 13.00	<u>Rene Janssen</u> : Converting Solar Energy with Organic Materials
13.00 – 13.05	<u>Industry</u> : Eni
13.05 – 13.10	<u>Industry</u> : Dongjin Semichem

13.05 – 14.30 Lunch

	Session A – Room 4	Session B – Room 5	Session C – Room A
	Chair: Gerald Meyer	Chair: Natalie Stingelin	Chair: Nam-Gyu Park
14.30 – 14.45	<u>Yan Liu</u> : Towards the Commercialization of Dye Sensitized Solar Cells in a China Style	<u>Edward Bovill</u> : Device Degradation and Lifetime of OPVs Utilising a Solution Processed MoOx Interface	<u>Baillie Colin</u> : Hybrid Tandem Photovoltaics Using Organometallic Perovskites as the Top Cell
14.45 – 15.00	<u>Satoshi Uchida</u> : Secure & Efficient Dye-Sensitized Solar Cells with Nano-clay Electrolyte	<u>Uli Würfel</u> : Determining the Intrinsic and the Injection Dependent Charge Carrier Concentration in Organic Solar Cells Using the Suns-Voc Method	<u>Annamaria Petrozza</u> : Excitons versus Free Charges: a Photophysical Picture of Organo-lead Tri- Halide Perovskites
15.00 – 15.15	<u>Jianxi Yao</u> : One Step Preparation of the Hierarchical Porous Structured Electrode for Dye-sensitized Solar Cells: Effective Electron Transport and Electrolyte Diffusion	<u>Koen Hendriks</u> : Homo-coupling Defects in Diketopyrrolopyrrole Based Co-polymers and their Effect on Photovoltaic Performance	<u>Timothy Kelly</u> : Perovskite Solar Cells With a Planar Heterojunction Structure Using ZnO Electron-transport Layers
15.15 – 15.30	<u>Carlo Alberto Bignozzi</u> : New Materials for Dye Sensitized Solar Cells	<u>Natalie Banerji</u> : The Effect of Microstructure and Charge Separation Pathway on Carrier Generation in Organic Solar Cells	<u>Abderrazzak Douhal</u> : Interrogating the Dynamics of Electrons and Holes Within Perovskite-based Solar Cells
15.30 – 15.45		<u>Derya Baran</u> : A Systematic Study for Anticipating the Potential Efficiency of Organic Solar Cells utilizing Photoluminescence Spectroscopy	<u>Matthew L. Davies</u> : Colourful Organolead Halide Perovskites for Building-Integrated Photovoltaics
15.45 – 16.00	<u>Masato Maitani</u> : Facet-controlled TiO2 for Controlling Electron Transfer and Morphology in Dye-sensitized Solar Cells	<u>Almantas Pivrikas</u> : Transport of Hot Carriers in Polymer-based Organic Solar Cells	<u>Efrat Lifshitz</u> : The Influence of Ligands' Vibrational Motion on the Optical and Electrical Properties of Colloidal Quantum Dots - a Direct Impact on the Implementation in Photovoltaic Cells

16.00 – 16.30 Tea Break

	Session A – Room 4	Session B – Room 5	Session C – Room A
	Chair: Lars Kloo	Chair: Alex Jen	Chair: Yanfa Yan

HOPV14

Hybrid and Organic Photovoltaics

11 - 14 MAY
2014

LAUSANNE
SWITZERLAND

16.30 – 16.30	<u>Gerrit Boschloo</u> : Charge Compensation at the Mesoporous Semiconductor / Dye / Electrolyte Interface	<u>Oskar J. Sandberg</u> : The Influence of Contacts in Bulk Heterojunction Solar Cells: A Drift-diffusion Approach	<u>Qing Shen</u> : Charge Separation and Recombination. Uncovering the Mechanism of High Efficiency of Perovskite Solid-State Hybrid Solar Cells
16.45 – 17.00	<u>Peter Chabreck</u> : Fabric Based Electrodes for Large Area Dye Sensitized Cell Modules	<u>Ning Li</u> : Towards Fully Printed Organic Tandem Solar Cells & Modules: Development of Low Temperature Processed Intermediate Layers	<u>Hong Lin</u> : The Effect of First-step PbI ₂ Concentration on CH ₃ NH ₃ PbI ₃ Perovskite Hybrid Solar Cells Fabricated by a Sequential Deposition Method
17.00 – 17.15	<u>Kentaro Kawata</u> : Advanced Materials for Use in Dye-Sensitized and Perovskite Photovoltaics	<u>Lukas Schmidt-Mende</u> : Control of Recombination Pathways in TiO ₂ Hybrid Solar Cells using Dopants	<u>Rasmus Schröder</u> : Correlating Electronic Properties of Perovskite Based Hybrid Solar Cells with Layer Morphologies Derived from Analytical Transmission Electron Microscopy
17.15 – 17.30	<u>Kati Miettunen</u> : New Ways to Investigate Corrosion in Dye Solar Cells	<u>George Dibb</u> : Stability of Polymer: Fullerene Solar Cells: Exposure to Highly Controlled Oxygen and Water Environments	<u>Gill Sang Han</u> : Tin Oxide (SnO ₂) Nanowire Arrays toward Highly-Efficient 1-Dimensional Perovskite Solar Cells
17.30 – 18.30 Posters/Exhibition			
19.15 – 22.30 Boat dinner			
13 May 2014 Day 2 (Tuesday)			
Main Hall – Room A			
Chair: James Durrant			
8.00 – 8.30	Meet the Editors		
8.30 – 9.05	<u>Edward Sargent</u> : Solar Cells Based on Solution-processed Quantum Dots		
9.05 – 9.40	<u>Karl Leo</u> : Small Molecule Organic Photovoltaics		
9.40 – 10.00	<u>Henk Bolink</u> : High Performance Metal Oxide Free Perovskite Based Solar Cells		
10.00 – 10.25	<u>Yun Chi</u> : Progresses on the Design and Application of Ru(II) Based DSC Sensitizers		
10.25 – 10.55 Tea Break			
Main Hall – Room A			
Chair: Leo Karl			
10.55 – 11.20	<u>Chen-Yu Yeh</u> : Rational Molecular Design of Efficient Porphyrins for Dye-Sensitized Solar Cells		
11.20 – 11.45	<u>Andreas Hinsch</u> : Status of Dye Solar Cell Technology as a Guideline for Further Research		
11.45 – 12.10	<u>Michael McGehee</u> : How Charges Separate Very Efficiently in Bulk Heterojunctions		
12.10 – 12.35	<u>Yang Yang</u> : Small Molecule, Polymer and Perovskite Photovoltaic Cells with Very High Performance		
12.35 – 13.00	<u>Peter Erk</u> : Chemistry and Challenges of Soft Matter Based Solar Cells		
13.00 – 13.05	Industry: Solaronix		
13.05 – 13.10	Industry: MERCK		
13.10 – 14.30 Lunch			
	<u>Session A – Room 4</u>	<u>Session B – Room 5</u>	<u>Session C – Room A</u>
	Chair: Hiroshi Segawa	Chair: Etgar Lioz	Chair: Michael McGehee
14.30 – 14.45	<u>Frédéric Sauvage</u> : Chemical Stability of 3-methoxypropionitrile-based Electrolyte: First Evidence for SEI Formation and Implications	<u>Steffen Roland</u> : High Efficiency Hybrid Triple Junction Solar Cells Comprising of Amorphous Silicon and Low Band Gap Polymers	<u>Mukundan Thelakkat</u> : Perovskite Solar Cells Involving Poly(triphenylamine)s - Investigation of Hole Transport Mobility, Doping Effects and Photovoltaic Properties
14.45 – 15.00	<u>Aldo Di Carlo</u> : Stabilized Large Area DSC modules for Building Integrated Photovoltaic Applications	<u>Gerasimos Konstantatos</u> : Colloidal Quantum Dot Solar Cells: Tailoring Properties from the Suprananocrystalline Level to the Atomic Level	<u>Ramon Tena-Zaera</u> : Perovskite Solar Cells with Inorganic Hole Selective Contact: TiO ₂ /CH ₃ NH ₃ Pb ₃ -xCl _x /CuSCN
15.00 – 15.15	<u>Ashraf Islam</u> : Panchromatic Sensitization of Nanocrystalline TiO ₂ Films: Efficient Dye-Sensitized Solar Cell	<u>Ute Cappel</u> : Solution-processed Antimony Sulfide Solar Cells	<u>Fabian Hanusch</u> : Low Temperature Solution Based Synthesis of Thin Film MAPbI ₃ Perovskite Solar Cells
15.15 – 15.30	<u>Tingli Ma</u> : Low-cost Dye-sensitized Solar Cells Base on New Pt-like Counter Electrodes	<u>Gregory Wilson</u> : Observations of Apparent Edge Effects in Hybrid Organic Photovoltaics and their Impact for Device Architecture	<u>Amaresh Mishra</u> : Functional S,N-Heteroacene-based Oligomers as Hole-Transporting Materials for Perovskite-based Solar Cell

HOPV14

Hybrid and Organic Photovoltaics

11 - 14 MAY
2014

LAUSANNE
SWITZERLAND

15.30 – 15.45	<u>Songyuan Dai</u> : DSC Module Design and the Performance of Application	<u>Udo Bach</u> : The Use of Metal Nanoparticles in Photovoltaic Junctions	<u>Michael Saliba</u> : The Influence of Thermal Processing Protocol upon the Crystallization and Photovoltaic Performance of Organometal Trihalide Perovskites
15.45 – 16.00	<u>Xudong Yang</u> : Toward Design of High Performance Sensitizers: an Insight into the Mechanism of Interfacial Electron Injection	<u>Pierre M. Beaujuge</u> : Interplay between Ordering Effects and Solar Cell Performance IN PBDTPD Polymers	<u>Rebecka Lindblad</u> : The Electronic Structure of Perovskite Solar Cell Interfaces
16.00 – 16.30 Tea Break			
	Session A – Room 4	Session B – Room 5	Session C – Room A
	Chair: Carlo Alberto Bignozzi	Chair: Arie Zaban	Chair: Annamaria Petrozza
16.30 – 16.30	<u>George P. Demopoulos</u> : Exploring the Potential for Light Harvesting Enhancement in DSCs Via the Integration of Upconverting NaYF ₄ : Yb ³⁺ /Er ³⁺ +@TiO ₂ Nanocomposites	<u>Sergei Ponomarenko</u> : Novel Low Bang Gap Small Molecules and Polymers for Efficient Solution-processable Organic pPhotovoltaics	<u>Pablo P. Boix</u> : Design and Working Mechanisms of CH ₃ NH ₃ PbI ₃ Solar Cells Interfaces
16.45 – 17.00	<u>Muhammad Kashif</u> : Symmetrical and Unsymmetrical Polydentate Pyridyl Ligands for Redox Mediators Based on Co(II)/(III) Complexes	<u>Sara Jäckle</u> : Highly Efficient Hybrid N-silicon/PEDOT:PSS Inversion Layer Solar Cells	<u>Viresh Dutta</u> : Mesoporous TiO ₂ Microsphere Synthesized by Continuous Spray Pyrolysis for Perovskite Solar Cells
17.00 – 17.15	<u>Mario Alejandro Mejía Escobar</u> : Co-sensitization of a Synthetic Dye by Mean of High Extinction Coefficient Natural Dyes and their Application to Dye Sensitized Solar Cells	<u>Thomas Kirchartz</u> : Understanding Reaction Order and Ideality Factor in Organic Solar Cells	<u>Andrea Listorti</u> : Investigating Charge Dynamics in Halide Perovskite Sensitized Mesostructured Solar Cells
17.15 – 17.30	<u>To be announced</u> :	<u>Christopher Kley</u> : Atomic-scale Observation of Multi-conformational Binding and Energy Level Alignment of Ruthenium-based Photosensitizers on TiO ₂ Anatase	<u>Samuel Stranks</u> : Origin of Photoluminescence in Organolead Halide Perovskites: The Role of Mid-Gap Electronic States
17.30 – 18.30 Posters/Exhibition			
14 May 2014 Day 3 (Wednesday)			
Main Hall – Room A			
Chair: Michael Grätzel			
8.30 – 9.05	<u>Anders Hagfeldt</u> : The Versatility of Mesoscopic Solar Cells		
9.05 – 9.40	<u>Nam-Gyu Park</u> : Perovskite Solar Cells with Efficiency over 16%		
9.40 – 10.00	<u>Ivan Mora-Sero</u> : Transport, Recombination and Selective Contacts in Perovskite Solar Cells		
10.00 – 10.25	<u>David Mitzzi</u> : Organic-Inorganic Perovskites: Structures, Properties and Electronic Devices		
10.25 – 10.55 Tea Break			
Main Hall – Room A			
Chair: Michael Grätzel/Md. K. Nazeeruddin			
10.55 – 11.20	<u>Tsutomu Miyasaka</u> : Hybrid Photovoltaic Cells Based on Organo Metal Halide Perovskite with Crystalline and Noncrystalline Conductors		
11.20 – 11.45	<u>Yanfa Yan</u> : Unique Properties of Halide Perovskites: Insights from First Principles Calculations		
11.45 – 12.10	<u>Sang Il Seok</u> : Efficiency Enhancement in Inorganic/Organic Hybrid Solar Cells		
12.10 – 12.35	<u>Subodh Mhaisalkar</u> : Structural, Optical and Electrical Characteristics of Organic- Inorganic Halide Perovskites for Photovoltaic and Light Emission Applications		
12.35 – 13.00	<u>Henry Snaith</u> : Perovskite Solar Cells; from Materials Processing to Understating and Enhancing Device Operation		
13.00 – 13.05	<u>Industry</u> : Dyesol		
13.05 – 13.10	<u>Industry</u> : EXEGER		
13.10 – 13.15	<u>Industry</u> : Weihua Solar		
13.10 – 14.30 Lunch			
	Session A – Room 4	Session B – Room 5	Session C – Room A
	Chair: Aldo Di Carlo	Chair: Juan Bisquert	Chair: Henry Snaith
14.30 – 14.45	<u>Hongwei Han</u> : Full Printable Monolithic Solid-state Mesoscopic Solar Cells Toward Low-cost Strategy	<u>Brian O'Regan</u> : Hyper Accelerated Aging (≥ 50 suns) of Organic and Perovskite Solar cells, Ignored Interfaces in DSSCs, and Photoelectrical Transients at <100 ns.	<u>Gary Hodes</u> : Location of Electric Fields and Determination of Effective Charge Diffusion Lengths in Perovskite Solar Cells

HOPV14

Hybrid and Organic Photovoltaics

11 - 14 MAY
2014

LAUSANNE
SWITZERLAND

14.45 – 15.00	<u>Yi-Bing Cheng</u> : Continuous Printing of Dye Sensitized Solar Cells	<u>Martijn Kemerink</u> : Generation, Relaxation and Diffusion of Photogenerated Charges in Organic Solar Cells	<u>Shahzada Ahmad</u> : Device Characterization and Structure Property Relationship in Perovskites Based Solar Cell
15.00 – 15.15	<u>Silvia Villarroja-Lidon</u> : Indoor Light Energy Harvesting: From Lab to Commercialisation	<u>Stoichko Dimitrov</u> : Determining the Factors Controlling Photocurrent Generation in Low Bandgap Polymer: Fullerene Solar Cells	<u>Adam Pockett</u> : An Electrochemical Study of Transport Properties in Perovskite Solar Cell Materials
15.15 – 15.30	<u>Guido Viscardi</u> : Dibranching Squaraines as NIR-sensitizers for DSC	<u>Holger Borchert</u> : Semitransparent Polymer: Fullerene Solar Cells with Aluminum-doped Zinc Oxide Replacing Indium tin Oxide as Electrode	<u>Seigo Ito</u> : Carbon-Doublebond-Free Printed Solar Cells as TiO ₂ /CH ₃ NH ₃ PbI ₃ /CuSCN/Au: Structural Control and Photo-Aging Effects
15.30 – 15.45	<u>Arie Zaban</u> : Photo-Induced Dipoles: A New Method to Convert Photons into Photovoltage in Solar Cells	<u>Alan Dunbar</u> : Nanostructure Development During the Fabrication of Plastic Solar Cells	<u>Filippo De Angelis</u> : First Principles Simulations on the Role of Chlorine Doping in Organohalide Lead Perovskites
15.45 – 16.00	<u>Renaud Demadrille</u> : Molecular Design of Organic Dyes for Robust and Efficient Dye-Sensitized Solar Cells: from Synthesis to Solar Panels	<u>Anton V. Malko</u> : Efficient Unidirectional Energy Transfer Through Graded Nanocrystal Assemblies Into Silicon	<u>Maurizio Cossi</u> : Ab Initio Modeling of Alkylammonium Perovskites: Structure, Optical and Magnetic Properties and Temperature Effects.
16.00 – 16.30 Tea Break			
	Session A – Room 4	Session B – Room 5	Session C – Room A
	Chair: Tsutomu Miyasaka	Chair: Brian O'Regan	Chair: Sang Il Seok
16.30 – 16.45	<u>Bert Conings</u> : On the Degradation of Organo-metal Halide Perovskites	<u>Mahmoud Hezam</u> : Investigation of Charge Separation and Charge Injection Dynamics in Perovskite Solar Cells	<u>Shuzi Hayase</u> : Sn Perovskite Based Solar Cells Harvesting Light in NIR Region
16.45 – 17.00	<u>Nancy Jiang</u> : Durability and Scale-Up Avenues for Perovskite-Based Mesoscopic Solar Cells	<u>Peter Chen</u> : Efficient NiO/CH ₃ NH ₃ PbI ₃ Mesoscopic Solar Cells	<u>Lioz Etgar</u> : Hole Conductor Free Lead Halide Perovskite Heterojunction Solar Cells
17.00 – 17.15	<u>Lauren Polande</u> : Perovskite Solar Cells Processed Entirely by Vapor Deposition	<u>Felix Deschler</u> : Efficient Photoluminescence and Optically-pumped Lasing in Mixed-Halide Organolead Perovskite Semiconductors	<u>David Wsley</u> : Flexible Transparent Self Adhesive Electrode Enabling the Scale up of High Efficiency Perovskite Solar Cells
17.15 – 17.30	<u>Pablo Docampo</u> : Air Stable, 10% Efficient PEDOT:PSS/Perovskite/PCBM Solar Cells	<u>Piers Barnes</u> : The Dynamics of and Structure of CH ₃ NH ₃ Ions in Methyl Ammonium Lead Halide Perovskites	<u>Mauricio Calvo Roggiani</u> : Angular Response of Photonic Crystal Based Dye Sensitized Solar Cells
17.30 – 17.45 Prizes and Closing			
17.45 – 18.30 Posters/Exhibition			

SUPPORT:

