

nanoGe Fall Meeting19 (NGFM19)

#OPV19. Organic Photovoltaics: recent breakthroughs, advanced characterization and modelling

Berlin, Germany, 2019 November 6th - 8th

Conference Chairs: Jörg Ackermann and Uli Würfel

Conference Program

November 6th - Day 4 (Wednesday)	
	Plenary Session Chair: Jacky Even 09:00 - 09:30 <u>Jenny Zhang</u> (<i>Department of Chemistry, University of Cambridge - UK</i>) Session-K1 Dr. 09:00 - 09:30 <u>David Mitzi</u> (<i>Duke University</i>) Session-K2 Organic-Inorganic Perovskites: Unrivaled Versatility for Semiconductor Design and Fabrication
	OPV 1.1 09:30 - 10:00 <u>Jenny Nelson</u> (<i>Department of Physics and Centre for Plastic Electronics, Imperial College London, London, SW7 2AZ, UK.</i>), Mohammed Azzouzi, Jun Yan 1.1-I1 Device-scale and Molecular-scale Modelling of Organic Photovoltaic Devices 10:00 - 10:30 <u>Thomas Kirchartz</u> (<i>IEK-5 Photovoltaics, Forschungszentrum Jülich</i>) 1.1-I2 Capacitance-based Characterization of Organic Solar Cells 10:30 - 11:00 Coffee Break
	OPV 1.2 11:00 - 11:30 <u>Sri Harish Kumar Paleti</u> (<i>King Abdullah University of Science and Technology (KAUST), Physical Science and Engineering Division (PSE), Solar Center (KSC)</i>), Anastasia Markina, Nicola Gasparini, Denis Andrienko, Derya Baran 1.2-O1 An Energetic Perspective to Improve the Photostability of Non-Fullerene Acceptor based Organic PhotoVoltaics 11:30 - 12:00 Mehrad Ahmadpour, Andre Luis Fernandes Cauduro, Jani Lamminaho, Elodie Destouesse, Mina Mirsafaie, Bhushan Ramesh Patil, William Greenbank, Brian Julsgaard, Vida Turkovic, Peter Balling, Horst-Günter Rubahn, Nadine Witkowski, Andreas Schmid, <u>Morten Madsen</u> (<i>SDU NanoSYD, Mads Clausen Institute, University of Southern Denmark</i>) 1.2-O2 Metal Oxide Interlayers for Scalable Organic Photovoltaic Devices 12:00 - 12:30 <u>mohammed azzouzi</u> (<i>Department of Physics and Centre for Plastic Electronics, Imperial College London, London, SW7 2AZ, UK.</i>), Michelle Vezie, Jenny Nelson, Tracey Clarke, Artem Bakulin 1.2-O3 Impact of Marginal Exciton – Charge-transfer State Offset on Charge Generation and Recombination in Polymer: Fullerene Solar Cells 12:30 - 14:00 Lunch
	OPV 1.3 14:00 - 14:30 <u>Harald Ade</u> (<i>North Carolina State University</i>) 1.3-I1 Phase Behavior, Miscibility, and Stability of Non-Fullerene Organic Solar Cells 14:30 - 14:45 <u>Jun Yan</u> (<i>Department of Physics and Centre for Plastic Electronics, Imperial College London, London, SW7 2AZ, UK.</i>), Elham Rezasoltani, Mohammed Azzouzi, Flurin D. Eisner, Anne A. Y. Guilbert, Jenny Nelson 1.3-O1 Relating Microstructure Behaviour to Charge Transfer States Properties and Energy Losses in Organic Bulk Heterojunction Solar Cells

14:45 - 15:00 1.3-O2	<u>Sebastian Wilken</u> (<i>Department of Physics, Chemistry and Biology (IFM), Linköping University, 581 83 Linköping, Sweden</i>), Oskar J. Sandberg, Dorothea Scheunemann, Ronald Österbacka Watching Space Charge Build up in an Organic Solar Cell
15:00 - 15:15 1.3-O3	<u>Yatzil Avalos</u> (<i>Aix-Marseille University, Centre Interdisciplinaire de Nanosciences de Marseille CInaM, UMR CNRS 7325, Marseille, France.</i>), Agnès Rivaton, Carmen M. Ruiz, David Duché, Jean-Jacques Simon, Pavlo Perkhun, Olivier Margeat, Christine Videlot-Ackermann, Lydia Cabau, Olivier Bardagot, Uyxing Vongsaysy, Mélanie Bertrand, Renaud Demadrille, Jörg Ackermann Correlation of Detailed Photodegradation Study of ITIC Derivative Acceptors in Polymer Blends and its Impact on the Stability in Polymer Solar Cells
15:15 - 15:30 1.3-O4	<u>Riva Alkarsifi</u> (<i>CInaM - UMR 7325 CNRS - Aix Marseille Université Campus de Luminy – Case 913 13288 MARSEILLE Cedex 09</i>), Yatzil Avalos, Pavlo Perkhun, Mats Fahlman, Christine Videlot-Ackermann, Olivier Margeat, Jörg Ackermann Highly efficient doped Nickel Oxide Nanocrystal based inks for Solution-Processed Hole Extraction Layers in Polymer Solar Cells

15:30 - 16:00 Coffee Break

OPV 1.4

16:00 - 16:15 1.4-O1	<u>Vida Turkovic</u> (<i>SDU NanoSYD, Mads Clausen Institute, University of Southern Denmark</i>), Michela Prete, Mikkel Bregnhøj, Liana Inasaridze, Dmytro Volyniuk, Filipp A. Obrezkov, Juozas V. Grazulevicius, Sebastian Engmann, Horst-Günter Rubahn, Pavel A. Troshin, Peter Remsen Ogilby, Morten Madsen Biomimetic Additive-Assisted Stabilization of Organic Solar Cells
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November 7th - Day 5 (Thursday)

OPV 2.1

09:00 - 09:15 2.1-O1	<u>Flurin Eisner</u> (<i>Department of Physics, Imperial College London, UK</i>), Mohammed Azzouzi, Zhuping Fei, Martin Heeney, Jenny Nelson Hybridization of Local Exciton and Charge-Transfer States Reduces Nonradiative Voltage Losses in Organic Solar Cells
09:15 - 09:30 2.1-O2	<u>Wolfgang Köntges</u> (<i>Centre for Advanced Materials (CAM), Heidelberg University, Heidelberg, Germany</i>), Pavlo Perkhun, Rasmus R. Schröder, Elena Barulina, Olivier Margeat, Christine Videlot-Ackermann, Jörg Ackermann, Martin Pfannmöller Optimal Interfacial Composition and Crystallinity of Non-Fullerene Acceptor Blends for Organic Photovoltaics
09:30 - 10:00 2.1-I1	<u>Martin Pfannmöller</u> (<i>Centre for Advanced Materials (CAM), Heidelberg University, Heidelberg, Germany</i>) Understanding the Photophysical Processes within Organic Photovoltaic Blends by Functional Imaging in an Analytical Electron Microscope
10:00 - 10:30 2.1-O3	<u>David Palacios-Gomez</u> (<i>Durham University</i>), Ali Huerta-Flores, Christopher Pearson, Faisal Alanazi, Budhika Mendis, Christopher Groves Impact of Morphology in Cascade Ternary Organic Photovoltaic Devices

10:30 - 11:00 Coffee Break

OPV 2.2

11:00 - 11:30 2.2-I1	<u>Huifeng Yao</u> (<i>State Key Laboratory of Polymer Physics and Chemistry, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China</i>) Optimization of Active Layers in Highly Efficient Organic Solar Cells
11:30 - 12:00 2.2-O1	<u>Pavlo Perkhun</u> (<i>Aix Marseille Univ, CNRS UMR 7325, CInaM, Marseille, France.</i>), Elena Barulina, Sadok Ben Dkhil, Pascal Pierron, Wolfgang Köntges, Martin Pfannmöller, Antonio Guerrero, Christine Videlot-Ackermann, Olivier Margeat, Jean-Jacques Simon, Jörg Ackermann Reducing Performance Losses in High Efficiency Digital Printed Polymer Solar Cells Using Non-fullerene Acceptors

12:00 - 12:30	Balder Adad Nieto Diaz (<i>Durham University</i>), Christopher Pearson, Christopher Groves
2.2-O2	Organic Photovoltaic Blends Diluted with Inert Polymers for Enhanced Lifetime: Impact of Blend Microstructure and Processing Additives
12:30 - 14:00	Lunch
	OPV 2.3
14:00 - 14:30	Jafar Khan (<i>King Abdullah University of Science and Technology (KAUST), KAUST Solar Center (KSC), Physical Sciences and Engineering Division (PSE), Material Science and Engineering Program (MSE)</i>), Yulir Firdaus, Federico Cruciani, Shengjian Liu, Denis Andrienko, Thomas Anthopoulos, Pierre Beaujuge, Frederic Laquai
2.3-O1	Non-geminate Recombination Limits Fill Factor in Polymer:ITIC Bulk Heterojunction Solar Cells
14:30 - 14:45	Jochen Kammerer (<i>Centre for Advanced Materials (CAM), Heidelberg University, Heidelberg, Germany</i>), Rasum R. Schröder, Pavlo Perkhun, Olivier Margeat, Wolfgang Köntges, Christine Vidélot-Ackermann, Jörg Ackermann, Irene Irene Wacker, Martin Pfannmöller
2.3-O2	Morphology of NFA Organic Photovoltaic Blends by Automated Segmentation of Spatially Resolved Electron Spectra
14:45 - 15:15	Wouter Maes (<i>UHasselt – Hasselt University, Institute for Materials Research (IMO-IMOMEC), Agoralaan – Building D, 3590 Diepenbeek, Belgium</i>), Omar Beckers, Koen Vandewal, Pieter Verstappen
2.3-I1	Understanding Batch-to-Batch Variations of Push-Pull Type Conjugated Polymers for Organic Photovoltaics
15:15 - 15:30	Alexis Prel (<i>Laboratoire ICube, Université de Strasbourg, CNRS, UMR 7357, 23 rue du Loess, 67037 Strasbourg, France</i>), Abir Rezgüi, Anne-Sophie Cordan, Yann Leroy
2.3-O3	A Nanomorphology Taxonomy for Organic Solar Cells Modeling
15:30 - 16:00	Coffee Break
16:00 - 17:00	OPV 2.4
17:00 - 19:00	Poster Session
November 8th - Day 6 (Friday)	
	Plenary Session
09:00 - 09:30	Dmitri Talapin (<i>Department of Chemistry, University of Chicago, Chicago, Illinois 60637, USA</i>)
Session-K1	Self-organization of Electrostatically and Sterically Stabilized Colloidal Nanocrystals: The Roles of Topology, Image Charges and Non-classical Nucleation
09:00 - 09:30	Xiaoyang Zhu (<i>Department of Chemistry, Columbia University, New York, New York 10027, United States</i>)
Session-K2	Ferroelectric Polarons in Lead Halide Perovskites
	OPV 3.1
09:30 - 10:00	Elena Barulina (<i>Aix-Marseille Univ., UMR CNRS 7325, Centre Interdisciplinaire de Nanosciences de Marseille (CINaM), 13009 Marseille Cedex 09, France</i>), Pavlo Perkhun, Wolfgang Köntges, Martin Pfannmöller, Sadok Ben Dkhil, Jean-Jacques Simon, Olivier Margeat, Christine Vidélot-Ackermann, Jörg Ackermann
3.1-O1	Lifetime Investigation of Highly Efficient Polymer Solar Cells Based on ITIC Derivatives under Different Light Sources
10:00 - 10:30	Sadok Ben Dkhil (<i>Dracula Technologies</i>), Florent Pourcin, Elena Barulina, Pavlo Perkhun, Olivier Margeat, Christine Vidélot Ackermann, Jörg Ackermann, Jérôme Vernet, Pascal Pierron, Brice Cruchon
3.1-I1	Fully Inkjet Printed High Efficiency Flexible and Free Design OPV Modules for Indoor Application
10:30 - 11:00	Coffee Break
	OPV 3.3
11:00 - 11:15	Wolfgang Wenzel (<i>Institute of Nanotechnology, Karlsruhe Institute of Technology, Germany</i>), Pascal Friederich, Franz Symalla, Artem Fediai, Velimir Meded, Alexander Colsmann, Mario Ruben
3.3-O3	Scale-Bridging Models for Organic Semiconductors
11:15 - 11:30	

11:30 - 11:45 3.3-O1	<u>Olzhas Ibraikulov</u> (<i>Laboratoire ICube, Université de Strasbourg, CNRS, UMR 7357, 23 rue du Loess, 67037 Strasbourg, France</i>), Markus Kohlstädt, Jing Wang, Nicolas Leclerc, Uli Würfel, Patrick Lévêque, Thomas Heiser ITO-free Organic Photovoltaic Modules Based on Fluorinated Polymers Deposited from Non-halogenated Solution: An Important Step towards Large-scale Module Production
11:45 - 12:00 3.3-O2	<u>Tanvi Upreti</u> (<i>Department of Physics, Chemistry and Biology (IFM), Linköping University, Sweden</i>), Yuming Wang, Huotian Zhang, Feng Gao, Martijn Kemerink Consistent Description of the Electron and Hole Mobilities in Organic Solar Cells
12:00 - 12:30	
12:30 - 14:00	Lunch
	OPV 3.3
14:00 - 14:15 3.3-O1	<u>Ahmed Balawi</u> (<i>King Abdullah University of Science and Technology (KAUST), Physical Science and Engineering Division (PSE), Solar Center (KSC)</i>), Zhipeng Kan, Julien Gorenflot, Neha Chaturvedi, Shengjian Liu, Pierre Beaujuge, Frederic Laquai Quantifying the Yield of Photophysical Processes in All-Polymer Bulk Heterojunction Solar Cells
14:15 - 14:30 3.3-O2	Oskar Sandberg, Stefan Zeiske, Nasim Zarrabi, Paul Meredith, <u>Ardalan Armin</u> (<i>Swansea University, Department of Physics, Swansea, United Kingdom.</i>) Trap-mediated Charge Photogeneration, Transport and Recombination in Organic Solar Cells: Limitations Set by Domain Purity
14:30 - 14:45 3.3-O3	<u>SAFAKATH KARUTHEDATH</u> (<i>King Abdullah University of Science and Technology (KAUST), KAUST Solar Center (KSC), Physical Sciences and Engineering Division (PSE), Material Science and Engineering Program (MSE)</i>), Yuliar Firdaus, Ru-Ze Liang, Julien Gorenflot, Pierre M. Beaujuge, Thomas D. Anthopoulos, Frédéric Laquai Impact of Fullerene on the Photophysics of Ternary Small Molecule Organic Solar Cells
14:45 - 15:00 3.3-O4	<u>Ruichen Yi</u> (<i>State Key Laboratory of Surface Physics and Department of Physics, Fudan University</i>), Wen Feng, Xiaoyuan Hou Anomalous Hole-Transfer and Heterogeneous Interfacial Contact Effect in Bulk-Heterojunction Organic Solar Cells
15:30 - 16:00	Coffee Break