

## Online nanoGe Fall Meeting 20 (OnlineNFM20)

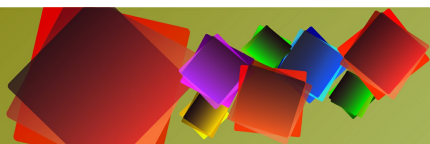
#NewOPV20. Non-fullerene Electron acceptors Within Organic Photovoltaics

2020 October 20th - 21st

Conference Chairs: Vida Engmann, Morten Madsen and Feng Gao

### Conference Program

October 20th - Day 1 (Tuesday)	
08:30 - 08:35	<b>NewOPV Opening nanoGe</b>
	<b>NewOPV 1.1</b> Chair: Morten Madsen
08:35 - 08:45 1.1-T1	<u>Denis Andrienko</u> ( <i>Max Planck Institute for Polymer Research, Mainz</i> ) Design rules for non-fullerene acceptors in organic solar cells
08:45 - 08:55 1.1-T2	<u>Seyed Mehrdad Hosseini</u> ( <i>University of Potsdam, Institute of Physics and Astronomy</i> ), Safa Shoaee, Nurlan Tokmoldin, Dieter Neher, Han Young Woo, Yingping Zou Putting order into PM6:Y6 solar cells to reduce the Langevin recombination in 400 nm thick junction
08:55 - 09:05 1.1-T3	<u>Lorena Perdigon-Toro</u> ( <i>University of Potsdam, Soft Mater Physics, Institute of Physics and Astronomy</i> ), Le Quang Phuong, Yingping Zou, Safa Shoaee, Dieter Neher Linking charge carrier recombination to photovoltaic responses in organic solar cells with Y-shaped non-fullerene acceptors
09:05 - 09:15 1.1-T4	<u>Guangzheng Zuo</u> ( <i>University of Potsdam, Institute of Physics and Astronomy</i> ), Maojie Zhang, Martijn Kemerink, Dieter Neher The role of energetic disorder in free charge generation and recombination of Y6-based solar cells
09:15 - 09:45	Discussion
09:45 - 09:50	<b>NewOPV Short Break</b>
09:50 - 10:00	<b>NewOPV Session Introduction 1.2 - Morten Madsen</b>
	<b>NewOPV 1.2</b> Chair: Morten Madsen
10:00 - 10:20 1.2-I1	<u>Koen Vandewal</u> ( <i>Hasselt University, Institute for Materials Research (IMO-IMOMECE)</i> ) Radiative and non-radiative recombination at electron donor - acceptor interfaces
10:20 - 10:40 1.2-I2	<u>James Durrant</u> ( <i>SPECIFIC – Swansea University, Materials Research Centre, College of Engineering, UK</i> ) Charge carrier dynamics and energy loss in organic solar cells employing non-fullerene acceptors
10:40 - 11:00 1.2-I3	<u>Christoph Brabec</u> ( <i>Department of Materials Science and Engineering Working group: Chair of Materials for Electronics and Energy Technology</i> ) What is organic photovoltaics missing to become a TerraWatt technology
11:00 - 11:20	Discussion
11:20 - 12:30	<b>NewOPV Break</b>
12:30 - 12:35	<b>NewOPV Opening nanoGe</b>
12:35 - 12:45	<b>NewOPV Session Introduction 1.3 - Feng Gao</b>
	<b>NewOPV 1.3</b> Chair: Feng Gao
12:45 - 13:05 1.3-I1	<u>He Yan</u> ( <i>Hong Kong University of Science and Technology, Department of Chemistry</i> ) Achieving non-fullerene organic solar cells with near 18% efficiency
13:05 - 13:25 1.3-I2	<u>Martin Heeney</u> ( <i>Department of Chemistry, Imperial College London</i> ) Developing high performing ladder-type materials as solar cell acceptors



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Online Conference

20<sup>th</sup>-23<sup>rd</sup> October, 2020

nanoGe

13:25 - 13:45	<u>Yingping Zou</u> ( <i>Central South University, College of Chemistry and Chemical Engineering, China</i> )
1.3-13	A-DA'D-A type acceptor based organic solar cells
13:45 - 14:05	Discussion
14:50 - 16:30	<b>ePoster Session</b>

### October 21st - Day 2 (Wednesday)

08:30 - 08:35	<b>NewOPV Opening nanoGe</b>
	<b>NewOPV Session 2.1</b> Chair: Feng Gao
08:35 - 08:45 2.1-T1	<u>Sandra Hultmark</u> ( <i>Chalmers University of Technology, Sweden</i> ), Sri Harish Kumar Paleti, Albert Harillo, Sara Marina, Ferry Anggoro Ardy Nugroho, Yanfeng Liu, Leif Ericsson, Ruipeng Li, Jaime Martín, Jonas Bergqvist, Christoph Langhammer, Fengling Zhang, Liyang Yu, Mariano Campoy-Quiles, Ellen Moons, Derya Baran, Christian Müller Suppressing Co-crystallization of Halogenated Non-Fullerene Acceptors for Thermally Stable Ternary Solar Cells
08:45 - 08:55 2.1-T2	<u>Xabier Rodríguez-Martínez</u> ( <i>Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Spain</i> ), Semih Sevim, Xiaofeng Xu, Carlos Franco, Paula Pamies-Puig, Laura Córcoles-Guija, Romen Rodriguez-Trujillo, Francisco Javier del Campo, David Rodriguez San Miguel, Andrew deMello, Salvador Pané, David B. Amabilino, Olle Inganäs, Josep Puigmartí-Luis, Mariano Campoy-Quiles High-Throughput Optimization of Organic Solar Cells Using a Novel Microfluidic-Assisted Blade Coating Platform
08:55 - 09:05 2.1-T3	<u>Michela Prete</u> ( <i>SDU NanoSYD, Mads Clausen Institute, University of Southern</i> ), Elisa Ogliani, Mikkel Bregnhøj, Subham Dastidar, Michael A. Brook, Anne Ladegaard Skov, Peter R. Ogilby, Adam Printz, Vida Turkovic, Morten Madsen Photochemical and mechanical stabilization of organic solar cells using naturally-occurring antioxidants
09:05 - 09:15 2.1-T4	<u>Mehrad Ahmadpour</u> ( <i>University of Southern Denmark, SDU NanoSYD, Mads Clausen Institute</i> ), Michela Prete, Mariam Ahmad, Andre Luis Fernandes Cauduro, Jani Lamminaho, Brian Julsgaard, Peter Balling, Horst-Günter Rubahn, Andreas K. Schmid, Vida Turkovic, Nadine Witkowski, Morten Madsen Sputtered metal oxide interlayers for scalable organic photovoltaic devices
09:15 - 09:25 2.1-T5	<u>Uli Würfel</u> ( <i>Fraunhofer Institute for Solar Energy Systems ISE, Germany</i> ), Jared Faisst, Mathias List Detailed characterization of a >1 cm <sup>2</sup> organic bulk-heterojunction solar cell with record certified efficiency based on commercially available materials
09:25 - 09:55	Discussion
09:55 - 10:00	<b>RSC Contributed Talk Video</b>
10:00 - 10:10	<b>NewOPV Session Introduction 2.2 - Vida Engmann</b>
	<b>NewOPV Session 2.2</b> Chair: Vida Engmann
10:10 - 10:30 2.2-I1	<u>Mariano Campoy-Quiles</u> ( <i>Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Spain</i> ) Accelerating discovery in organic solar cells through combinatorial screening
10:30 - 10:50 2.2-I2	<u>Tao Wang</u> ( <i>Wuhan University of Technology</i> ) Aggregation of Non-fullerene Acceptors in Organic Solar Cells
10:50 - 11:10	Discussion
11:10 - 12:00	<b>NewOPV Break</b>
12:00 - 12:05	<b>NewOPV Opening nanoGe</b>
12:05 - 12:15	<b>NewOPV Session Introduction 2.3 - Morten Madsen</b>
	<b>NewOPV Session 2.3</b> Chair: Vida Engmann
12:15 - 12:35 2.3-I1	<u>STELIOS Choulis</u> ( <i>Cyprus University of Technology, Molecular Electronics and Photonics Research Unit, Department of Mechanical Engineering and Materials Science and Engineering</i> ) Device Engineering for High Performance Organic Photovoltaics
12:35 - 12:55 2.3-I2	Tim Becker, Kai Brinkmann, Florian Zimmermann, Tobias Gahlmann, Manuel Theisen, Cedric Kreuzel, Selina Olthof, <u>Thomas Riedl</u> ( <i>University of Wuppertal, Germany</i> ) Non-fullerene organic solar cells as low-gap sub-cells in highly efficient tandem architectures

12:55 - 13:15	<u>Jenny Nelson</u> ( <i>Department of Physics, Imperial College London</i> ), Flurin Eisner, Wesley Ow, Jun Yan, Mohammed Azzouzi, Brian Tam, Valentina Belova, Mariano Campoy-Quiles, Anna Hankin, Andreas Kafizas Hybrid CuSCN:organic heterojunctions for semi-transparent photovoltaic applications
2.3-13	
13:15 - 13:35	Discussion
13:35 - 13:40	<b>NewOPV Closing</b>

### Poster Contribution

226	<u>Issoufou IBRAHIM ZAMKOYE</u> ( <i>Univ. Limoges, CNRS, XLIM, UMR 7252, F-87000 Limoges, France</i> ), Sylvain VEDRAINE, Bruno LUCAS Fabrication, Characterization and Numerical Simulation of Transparent Electrodes Based on Silver Nanowires for Inverted Organic Solar Cells
227	<u>Peter Fürk</u> ( <i>Graz University of Technology, Institute for Chemistry and Technology of Materials (ICTM), NAWI</i> ), Stefan Weber, Jakob Hofinger, Matiss Reinfelds, Thomas Rath, Sergey M. Borisov, Heinz Amenitsch, Markus C. Scharber, Gregor Trimmel Perylene-Linker-Perylene Triad Structures as Acceptors for Organic Solar Cells
228	<u>Marcial Fernandez Castro</u> ( <i>Technical University of Denmark (DTU)</i> ), Eva Mazzolini, Roar R. Søndergaard, Moises Espindola-Rodriguez, Jens Wenzel Andreasen Roll-processing optimization procedure for NFA-based OSCs
235	<u>Mohammed Amir Yakoob</u> ( <i>Syddansk Universitet, SDU NanoSyd, Mads Clausen Institute</i> ), Jani Lamminaho, Karlis Petersons, Horst-Günter Rubahn, Jan Stensborg, Morten Madsen Efficiency Enhanced Industrial-Compatible Organic Photovoltaics using Roll-To-Plate (R2P) Nanoimprint Lithography
236	<u>Ngoc-Le Maria Lena Nguyen</u> ( <i>University of Southern Denmark, SDU NanoSYD, Mads Clausen Institute</i> ) Efficient Solar Cells with Non-fullerene Acceptors (NFAs) on Industrial Scale
240	Jose G. Sanchez, <u>Alfonsina Abat Amelenan Torimtubun</u> ( <i>Department of Electronic, Electric and Automatic Engineering, Universitat Rovira I Virgili, 43007 Tarragona, Spain</i> ), Victor S. Balderrama, Magali Estrada, Josep Pallares, Lluís F. Marsal Thermal Annealing Effect on the Performance of Polymer : Non-Fullerene-based Solar Cells using V2O5 as HTL
241	<u>David Mueller</u> ( <i>Fraunhofer Institute for Solar Energy Systems ISE, Germany</i> ), Laura Campos-Guzman, Shu-Ngwa Asa'a, Birger Zimmermann, Uli Wuerfel Organic Photovoltaic Modules for Harvesting Indoor Light to Power IoT Devices – Upscaling and Long-Term-Stability
243	<u>Mariam Ahmad</u> ( <i>Syddansk Universitet, SDU NanoSyd, Mads Clausen Institute</i> ), Mehrad Ahmadpour, Dylan Amelot, Hervé Cruguel, Nadine Witkowski, Morten Madsen Unveiling the Electronic State Interplay at the DBP/4P-NPD Interface in Organic Solar Cells
249	<u>Dylan Amelot</u> ( <i>INSP, Institut des Nanosciences de Paris, Sorbonne Université, CNRS</i> ), Mehrad Ahmadpour, Quim Ros, Hervé Cruguel, Albano Cossaro, Luca Floreano, Morten Madsen, Nadine Witkowski Hybrid state at the organic acceptor / low-temperature sputtered TiOx interface : a necessary property for efficient charge transport ?
260	<u>Ivan Sudakov</u> ( <i>Department of Physics, University of Antwerp, 2610 Wilrijk, BE</i> ), Melissa Van Landeghem, Ruben Lenaerts, Wouter Maes, Sabine Van Doorslaer, Etienne Goovaerts The Interplay of Stability between Donor and Acceptor Materials in a Fullerene-Free Bulk Heterojunction Solar Cell Blend