

nanoGe Fall Meeting19 (NGFM19)

#Exciup19. Excitonic up-downconversion

Berlin, Germany, 2019 November 6th - 7th

Conference Chairs: Bruno Ehrler and Akshay Rao

Conference Program

November 6th - Day 4 (Wednesday)	
	Plenary Session Chair: Jacky Even Room: Plenum / Breakout 4
09:00 - 09:30	<u>Jenny Zhang</u> (<i>Department of Chemistry, University of Cambridge - UK</i>)
Session-K1	Semi-artificial Photosynthesis: a Platform for Studying and Wiring Photosynthesis
09:00 - 09:30	<u>David Mitzi</u> (<i>Duke University</i>)
Session-K2	Organic-Inorganic Perovskites: Unrivalled Versatility for Semiconductor Design and Fabrication
	Exciup 1.1 Chair: Bruno Ehrler Room: Breakout 5
09:30 - 10:00	<u>Richard Friend</u> (<i>Cavendish Laboratory, Department of Physics, University of Cambridge, UK</i>)
1.1-I1	New materials for singlet exciton fission to triplet pairs
10:00 - 10:30	<u>Benjamin Daiber</u> (<i>Center for Nanophotonics, AMOLF, Science Park 104, The Netherlands</i>), Koen v.d. Hoven, Joris Y. Bodin, Stefan Luxembourg, Moritz Futscher, Bruno Ehrler
1.1-O1	Efficiency Potential and Application of Singlet Fission Enhanced Silicon Solar Cells using Different Energy Transfer
10:30 - 11:00	Coffee Break
	Exciup 1.2 Chair: Timothy Schmidt Room: Breakout 5
11:00 - 11:30	<u>Raj Pandya</u> (<i>Optoelectronics Group, Cavendish Laboratory, University of Cambridge, UK.</i>), Akshay Rao
1.2-O1	Optical Projection and Spatial Separation of Spin Entangled Triplet-Pairs from the S1 (21Ag-) State of Pi-Conjugated Systems
11:30 - 12:00	<u>Xiaoyang Zhu</u> (<i>Department of Chemistry, Columbia University, New York, New York 10027, United States</i>)
1.2-I1	Understanding and Controlling the Triplet Pair States in Singlet Fission
12:00 - 13:30	Lunch
	Exciup 1.3 Chair: Artem Bakulin
14:00 - 14:15	<u>David Jones</u> (<i>School of Chemistry, Bio21 Institute, University of Melbourne, , Parkville, VIC 3010, Australia.</i>)
1.3-O1	Non-traditional Singlet Fission Materials
14:15 - 14:30	<u>Elham M. Gholizadeh</u> (<i>PhD student</i>), Timothy Schmidt
1.3-O2	Oxygen-Enhanced Upconversion of near Infrared Light from Below the Silicon Band Gap
14:30 - 15:00	<u>Ferdinand Grozema</u> (<i>Department of Chemical Engineering, Delft University of Technology, The Netherlands</i>)
1.3-I1	Triplet Dynamics in Perylenediimides
15:00 - 15:30	<u>Luis Campos</u> (<i>Department of Chemistry, Columbia University, New York, New York 10027, United States</i>)
1.3-I2	Materials Design for Third Generation Solar Cells
15:30 - 16:00	Coffee Break

Exciup 1.4 Chair: Artem Bakulin	
16:00 - 16:30 1.4-O1	<u>Alexandr Zaykov</u> (<i>Institute of Organic Chemistry and Biochemistry of the CAS</i>), Josef Michl, Zdeněk Havlas, Eric Buchanan, Milena Jovanović Singlet Fission: Chromophores for Exciton Downconversion
November 7th - Day 5 (Thursday)	
Exciup 2.1 Chair: Luis Campos Room: Breakout 5	
09:00 - 09:30 2.1-O1	<u>Kazuhiko Seki</u> (<i>National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba Central 5, 1-1 Higashi, Tsukuba, Ibaraki 305-8565, Japan</i>), Tomoaki Yago, Ryuzi Kato Diffusion-limited Geminate Delayed Fluorescence by Singlet Fission and Triplet Fusion
09:30 - 10:00 2.1-I1	<u>Artem Bakulin</u> (<i>Department of Chemistry and Centre for Plastic Electronics, Imperial College London</i>) Carrier-Carrier vs Carrier-Phonon Interactions in Lead-halide Perovskite Materials: Role of Carrier Density, Nanoconfinement, and Surface Ligands
10:00 - 10:30 2.1-O2	<u>Silvia Ferro</u> (<i>Institute AMOLF</i>), Bruno Ehrler Harnessing Singlet Fission for Perovskite Photovoltaic Applications
10:30 - 11:00	Coffee Break
Exciup 2.2 Chair: Ferdinand Grozema Room: Breakout 5	
11:00 - 11:30 2.2-O1	<u>Jonas Sandby Lissau</u> (<i>SDU NanoSYD, Mads Clausen Institute, University of Southern Denmark</i>), Malika Khelfallah, Morten Madsen Routes towards Improved Solar Energy Conversion in Organic and Hybrid Solar Cells via Photon Upconversion
11:30 - 12:00 2.2-I1	<u>Timothy Schmidt</u> (<i>ARC Centre of Excellence in Exciton Science, School of Chemistry, UNSW Sydney, Australia</i>) Oxygen Enhanced Upconversion of Near Infrared Light Beyond the Band Gap of Silicon
12:00 - 13:30	Lunch
Exciup 2.3 Chair: Ferdinand Grozema Room: Breakout 5	
13:30 - 14:00 2.3-O1	Sarah Wieghold, Alexander Bieber, Zachary VanOrman, <u>Lea Nienhaus</u> (<i>Florida State University</i>) NIR-to-visible Upconversion Sensitized by Bulk Lead Halide Perovskites
14:00 - 14:15 2.3-O2	<u>Victor Gray</u> (<i>Department of Chemistry, Ångström Laboratory, Uppsala University</i>), Jesse Allardice, Simon Dowland, Zhilong Zhang, James Xiao, Neil Greenham, Akshay Rao Energetic Dependence of Triplet Energy Transfer to PbS Quantum Dots for Singlet-Fission Based Photo-multiplication
14:15 - 14:30 2.3-O3	<u>Sourav Maiti</u> (<i>Optoelectronic Materials Section, Department of Chemical Engineering, Delft University of Technology, The Netherlands.</i>), Silvia Ferro, Benjamin Daiber, Alyssa van den Boom, Sidharam Pujari, Han Zuilhof, Bruno Ehrler, Sachin Kinge, Laurens D. A. Siebbeles Dynamics of Singlet Fission in Tetracene and Triplet Transfer to Silicon
14:30 - 14:45 2.3-O4	Frederik Eistrup, Klaus Schwarzburg, Sergiu Levenco, Dennis Friedrich, Thomas Unold, Klaus Lips, Eva Unger, <u>Rowan MacQueen</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>) Thin film halide perovskite as a triplet fusion sensitizer: present status and open questions
14:45 - 15:15 2.3-I1	<u>Felix Castellano</u> (<i>North Carolina State University</i>) Triplet Migration Across Quantum Dot-Molecular Interfaces
15:30 - 16:00	Coffee Break
17:00 - 19:00	Poster Session

Poster Contribution

- | | |
|-----|---|
| 365 | <p><u>Yu Jin Jang</u> (<i>Center for Integrated Nanostructure Physics (CINAP), Institute for Basic Science (IBS), 2066 Seoburo, Jangangu, Suwon 16419, Republic of Korea</i>), Jin Cheol Park, Minh Dao Tran, Meeree Kim, Joonsoo Kim, Seok Joon Yun, Hyoyoung Lee, Ji-Hee Kim, Young Hee Lee</p> <p>MoTe₂/Pentacene Type II Heterostructure for Efficient Charge Population and Extraction</p> |
| 385 | <p><u>Jens Niederhausen</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie (HZB), BESSYII, Institut für Nanospektroskopie, Albert-Einstein-Straße 15, 12489 Berlin, Germany</i>), Clemens Gersmann, Rowan W. MacQueen, Martin Liebhaber, Moritz H. Futscher, Benjamin Daiber, Bruno Ehrler, Klaus Lips</p> <p>Organic Interlayers as Hybrid Interface Modifiers for c-Si Solar Cells With Tetracene as Singlet Fission Sensitizer</p> |