

nanoGe Fall Meeting19 (NGFM19)

#SolFuel19. Solar Fuel Synthesis: From Bio-inspired Catalysis to Devices

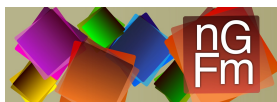
Berlin, Germany, 2019 November 4th - 6th

Conference Chairs: Roel van de Krol and Erwin Reisner

Conference Program

November 4th - Day 2 (Monday)	
08:45 - 09:00	Announcement of the day
	<p>Plenary Session 1 Chair: Roel van de Krol Room: Plenum</p>
09:00 - 09:30 1-K1	<p><u>Daniel Nocera</u> (<i>Harvard University</i>) Sustainable and Renewable Carbon and Nitrogen Cycles for Fuel and Crop Production</p>
	<p>Plenary Session 2 Chair: Doron Naveh Room: Breakout 1</p>
09:00 - 09:30 2-K1	<p><u>Efrat Lifshitz</u> (<i>Schulich Faculty of Chemistry, Solid State Institute, Russell Berrie Nanotechnology Institute and the Helen Diller Quantum Information Center, Technion, Haifa, Israel</i>), Maksym Kovalenko, Andrew Rappe The Effect of Magnetism on the Optical Properties of Bulk and Confined Perovskite Structures</p>
	<p>SolFuel 1.1 Chair: Erwin Reisner Room: Plenum</p>
09:30 - 10:00 1.1-11	<p><u>Marc Robert</u> (<i>Laboratoire d'Electrochimie Moléculaire, Université Paris Diderot</i>) Running the Clock: Catalytic Reduction of CO₂ with 2, 6 and 8 Electrons Using Co and Fe Molecular Complexes</p>
10:00 - 10:15 1.1-01	<p><u>Ferdi Karadas</u> (<i>Bilkent University, Turkey</i>) An Iron Chromophore-sensitized Photoanode for Water Oxidation</p>
10:15 - 10:30 1.1-02	<p><u>Antonio Alfano</u> (<i>CNST, Istituto Italiano di Tecnologia, Milano</i>), Alessandro Mezzetti, Francesco Fumagalli, Chen Tao, Annamaria Petrozza, Fabio Di Fonzo Towards Stable and High Efficiency Hybrid Organic Photoelectrochemical Cell Based Artificial Leaf: the Role of Materials and Interfaces</p>
10:30 - 11:00	Coffee Break
	<p>SolFuel 1.2 Chair: Erwin Reisner Room: Plenum</p>
11:00 - 11:30 1.2-11	<p><u>Osamu Ishitani</u> (<i>Tokyo Institute of Technology</i>) Photocatalytic and Electrocatalytic Reduction of Low Concentration of CO₂</p>
11:30 - 11:45 1.2-01	<p><u>Constantin D. Sahn</u> (<i>Christian Doppler Laboratory for Sustainable SynGas Chemistry, Department of Chemistry, University of Cambridge</i>), Moritz F. Kuehnel, Gaia Neri, Jonathan R. Lee, Katherine Orchard, Alex J. Cowan, Erwin Reisner Surface Modification of ZnSe Nanocrystals with a Ni(cyclam) Catalyst Enables Visible Light-driven Photochemical CO₂ Reduction in Water</p>
11:45 - 12:00 1.2-02	<p><u>F. Pelayo Garcia de Arquer</u> (<i>University of Toronto</i>), Cao-Thang Dinh, David Sinton, Edward Sargent Catalyst Management for Multiampere Gas-Phase Electrolysis</p>
12:00 - 12:30	
12:30 - 14:00	Lunch

SolFuel 1.3 Chair: Marc Robert Room: Plenum	
14:00 - 14:30 1.3-11	<u>Raffaella Buonsanti</u> (<i>Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland</i>) Colloidal Synthesis for Controllable and Tunable Materials in Artificial Photosynthesis
14:30 - 15:00 1.3-01	<u>Roland Marschall</u> (<i>University of Bayreuth, DE</i>) Nanostructured Spinel Ferrite Materials for Photoelectrochemical Water Splitting
15:00 - 15:15 1.3-02	<u>Michael Volokh</u> (<i>Ben-Gurion University of the Negev, Israel</i>), Menny Shalom Water-splitting Photoelectrochemical Cells Based on Carbon Nitride Materials: Progress through Improved Deposition Techniques
15:15 - 15:30 1.3-03	Igor Krivtsov, <u>Dariusz Mitoraj</u> (<i>University of Ulm</i>), Radim Beranek Water-Soluble Polymeric Carbon Nitride Colloidal Nanoparticles for Quasi-Homogeneous Photoredox Applications
15:30 - 16:00	Coffee Break
SolFuel 1.4 Chair: Marc Robert Room: Plenum	
16:00 - 16:15 1.4-01	<u>Liang Yao</u> (<i>Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland</i>), Kevin Sivula Catalyst-Free Synthesis of Robust Covalent Polymer Network Semiconducting Films and Application in Photoelectrochemical Water Splitting
16:15 - 16:30 1.4-02	<u>Thomas Emmler</u> (<i>Helmholtz-Zentrum Geesthacht, Dep. Sustainable Energy Technology, Institute of Materials Research</i>), Charline Wolpert, Mauricio Schieda, Maria T. Villa Vidaller, Stefen Fengler, Jun Akedo, Kentaro Shinoda, Thomas Klassen Kinetic Aerosol Spray Deposition of BiVO ₄ Powder for OER Photoelectrodes
16:30 - 16:45 1.4-03	Shima Farhoosh, Behrooz Eftekharinia, <u>Naimeh Naseri</u> (<i>Department of Physics, Sharif University of Technology, Azadi Avenue, Tehran, Iran</i>) Solar Water Splitting on Ti-doped Hematite Nanostructured Photoanode Modified with FeOOH Electro-catalysts
November 5th - Day 3 (Tuesday)	
Plenary Session 3 Chair: Marcus Scheele Room: Plenum	
08:30 - 09:00 3-K1	<u>William Tisdale</u> (<i>Massachusetts Institute Of Technology</i>) Nonequilibrium Dynamics of Excitons and Charges in Semiconductor Nanomaterials
Plenary Session 4 Chair: Pablo P. Boix Room: Breakout 4	
08:30 - 09:00 4-K1	<u>Juan Bisquert</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain</i>) Understanding Time Scales of Ionic and Electronic Phenomena in Perovskite Solar Cells
SolFuel 2.1 Chair: Roel van de Krol Room: Plenum	
09:00 - 09:30 2.1-11	<u>Ian Sharp</u> (<i>Walter Schottky Institute and Department of Physics, Technical University of Munich</i>) Identifying and Overcoming Loss Processes in Transition Metal Oxide Photoelectrodes
09:30 - 10:00 2.1-01	<u>Thomas Hamann</u> (<i>Department of Chemistry, Michigan State University</i>) Electron Dynamics at Copper Tungstate / Catalyst Interfaces



10:00 - 10:15 2.1-02	<u>Shababa Selim</u> (<i>Department of Chemistry, Imperial College London</i>), Laia Francas, Camilo Mesa, Sacha Corby, Dongho Lee, Andreas Kafizas, Kyoung-Shin Choi, James Durrant Using Transient Spectroscopic Techniques to Investigate the Effect of Catalyst Overlayers and Morphology on the Water Oxidation Performance of Bismuth Vanadate
10:15 - 10:30 2.1-03	<u>Sixto Gimenez</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain</i>), Miguel García-Tecedor, Drialys Cárdenas-Morcoso, Roser Fernandez-Climent Mechanistic Insights on Solar Water Splitting with Metal Oxide Semiconductor Materials
10:30 - 11:00	Coffee Break
	SolFuel 2.2 Chair: Roel van de Krol Room: Plenum
11:00 - 11:30 2.2-11	<u>David E. Starr</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Institute for Solar Fuels, Germany</i>), Marco Favaro, Pip Clark, Michael J. Sear, Fatwa F. Abdi, Ibbi Ahmet, Marlene Lamers, Roel van de Krol Shining Light on Bismuth Vanadate/Aqueous Electrolyte Interfaces
11:30 - 11:45 2.2-01	<u>Anirudh Venugopal</u> (<i>Delft University of Technology (TU Delft), The Netherlands</i>) The Dynamic Nature of the Semiconductor-liquid Junction under Operating Conditions
11:45 - 12:00 2.2-02	<u>Helene Magnan</u> (<i>Service de Physique de l'Etat Condensé SPEC, Université Paris-Saclay, CEA Saclay</i>), Pierre-Marie Deleuze, Bruno Domenichini, Antoine Barbier, Mathieu Silly Time Resolved Photoemission for a Fine Characterization of Oxide Photoanode
12:00 - 12:15 2.2-03	<u>Chiara Pasquini</u> (<i>Freie Universität Berlin</i>), Holger Dau Redox Energetics and Kinetics of Water Oxidation in Neutral versus Alkaline Electrolyte: an In-Operando Time-Resolved X-Ray Absorption Study
12:15 - 12:30 2.2-04	<u>Sacha Corby</u> (<i>Department of Chemistry, Imperial College London</i>), Miguel Garcia-Tecedor, Laia Francas, Shababa Selim, Sven Tengeler, Dongho Lee, Camilo Mesa, Wolfram Jaegermann, Sixto Gimenez, Kyoung-Shin Choi, James Durrant Spectroscopic Analysis of NiOx Catalysts for Water Oxidation
12:30 - 14:00	Lunch
	SolFuel 2.3 Chair: Kevin Sivula Room: Plenum
14:00 - 14:30 2.3-11	<u>Emily Weiss</u> (<i>Department of Chemistry, Northwestern University, Evanston, IL 60208, USA.</i>), Shichen Lian, Mohamad Kodaimati, Kevin McClelland Colloidal Photocatalysis for Multi-Electron Redox Reactions
14:30 - 14:45 2.3-01	<u>Amedeo Agosti</u> (<i>Department of Chemistry "G. Ciamician", University of Bologna, Italy</i>), Yifat Nakibli, Lilac Amirav, Giacomo Bergamini Towards Solar Factories: Photosynthetic H ₂ Generation and Organic Transformations for Highly Efficient Solar-to-Chemical Energy Conversion
14:45 - 15:15 2.3-02	<u>Dennis Hettterscheid</u> (<i>Leiden University</i>) Very Fast Oxygen Reduction Catalyzed by Cu(tpma); Towards Hydrogen Peroxide as a Solar Fuel
15:15 - 15:30 2.3-03	<u>Kasper Wenderich</u> (<i>Photocatalytic Synthesis Group, MESA+ Institute of Nanotechnology, University of Twente, P.O. box 217, 7500 AE Enschede, The Netherlands</i>), Wouter Kwak, Alexa Grimm, Mats Wildlock, Guido Mul, Bastian Mei Towards (Photo)electrochemical Production of Hydrogen Peroxide by Water Oxidation as a Financial Attractive Alternative to Oxygen Evolution
15:30 - 16:00	Coffee Break
	SolFuel 2.4 Chair: Kevin Sivula Room: Plenum
16:00 - 16:30 2.4-11	<u>David Tilley</u> (<i>Department of Chemistry, University of Zurich</i>) Operando Methods for a Deeper Understanding of Photoelectrochemical Water Splitting Systems

- 16:30 - 16:45 **Miguel García-Tecedor** (*Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain*), Roser Fernández-Climent, Sixto Giménez
2.4-O1
Systematic Analysis of Earth-abundant Based Electrocatalysts for Energy Applications by Spectroscopic Techniques
- 16:45 - 17:00 **Ibbi Y. Ahmet, Yimeng Ma, Ronald R. Gutierrez, Roel van de Krol, Sophia Haussener, Fatwa F. Abdi** (*Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Institute for Solar Fuels, Germany*)
2.4-O2
Overcoming Performance Losses in Scaling-up Metal Oxide-based Solar Water Splitting Devices

17:00 - 19:00 **Poster Session**

November 6th - Day 4 (Wednesday)

08:45 - 09:00 **Announcement of the day & Presentation of NFM20**

Plenary Session 5

Chair: Jacky Even
Room: Plenum

- 09:00 - 09:30 **David Mitzi** (*Duke University*)
5-K1
Organic-Inorganic Perovskites: Unrivaled Versatility for Semiconductor Design and Fabrication

Plenary Session 6

Chair: Erwin Reisner
Room: Breakout 4

- 09:00 - 09:30 **Jenny Zhang** (*Department of Chemistry, University of Cambridge - UK*)
6-K1
Semi-artificial Photosynthesis: a Platform for Studying and Wiring Photosynthesis

SolFuel 3.1

Chair: Ian Sharp
Room: Plenum

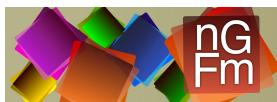
- 09:30 - 10:00 **Paula Dias, Adelio Mendes** (*LEPABE - Faculdade de Engenharia, Universidade do Porto, rua Dr. Roberto Frias, 4200-465 Porto, Portugal*)
3.1-I1
Towards solarchemistry: direct conversion of sunlight into fuels
- 10:00 - 10:15 **Isaac Holmes-Gentle** (*EPFL, Institute of Mechanical Engineering, Station 9, 1015 Lausanne, Switzerland*), Saurabh Tembhurne, Clemens Suter, Sophia Haussener
3.1-O1
Dynamic Process Simulation of a kW Scale Solar Hydrogen Producing System under Concentrated Irradiation
- 10:15 - 10:30 **Qingran Zhang** (*The University of New South Wales*), Xunyu Lu, Rose Amal
3.1-O2
A Fully Reversible Water Electrolyzer Cell made up from FeCoNi (Oxy)hydroxide Atomic Layers

10:30 - 11:00 **Coffee Break**

SolFuel 3.2

Chair: Ian Sharp
Room: Plenum

- 11:00 - 11:30 **Todd Deutsch** (*Chemistry and Nanoscience Center, National Renewable Energy Laboratory*), James Young, Walter Klein, Myles Steiner
3.2-I1
Photo-Electrochemical Hydrogen Production Systems using III-V Semiconductors: Challenges in Scaling-up from an Electrode to a Device
- 11:30 - 12:00 **Thomas Hannappel** (*Ilmenau University of Technology, Institute of Physics, Dep. Fundamentals of Energy Materials, Germany*), Supplie Oliver, Agnieszka Paszuk, Hans-Joachim Lewerenz, Matthias M. May, Lara Eggert, Andreas Bund, Wen-Hui Cheng, Matthias H. Richter, Frank Dimroth, Lackner David, Ohlmann Jens
3.2-O1
Epitaxial Si-based Tandem Device Structures for Efficient Solar Water Splitting
- 12:00 - 12:15 **Kayo Koike** (*RIKEN Center for Advanced Photonics*), Tevye R Kuykendall, Shaul Aloni, Satoshi Wada, Katsushi Fujii
3.2-O2
Photoelectrochemical and Electrochemical Properties of GaN Nanowires



12:15 - 12:30 3.2-03	<u>Drialys Cardenas-Morcoso</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain</i>), Tsvetelina Merdzhanova, Vladimir Smirnov, Friedhelm Finger, Bernhard Kaiser, Wolfram Jaegermann, Sixto Gimenez "Hybrid Tandem Device Based on Thin-Film Silicon Photovoltaics and Nanostructured Water Oxidation Catalysts for Solar Water Splitting"
12:30 - 14:00	Lunch
	SolFuel 3.3 Chair: David Tilley Room: Plenum
14:00 - 14:30 3.3-11	<u>Kevin Sivula</u> (<i>Institute of Chemical Sciences and Engineering, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland</i>) Materials for Robust, Inexpensive and High Performance Photoelectrochemical Fuel Production
14:30 - 15:00 3.3-12	<u>Alfred Ludwig</u> (<i>Chair for Materials Discovery and Interfaces, Institute for Materials, Ruhr University Bochum, D-44801 Bochum</i>), Swati Kumari, Helge Stein, Mona Nowak, Chinmay Khare, Kirill Sliozberg, Ramona Gutkowski, Joao Junqueira, Wolfgang Schuhmann Discovery of Solar Water Splitting Materials in Multinary Metal Oxide Systems by Combinatorial Synthesis and High-Throughput Characterization of Thin-Film Materials Libraries
15:00 - 15:15 3.3-01	<u>Virgil Andrei</u> (<i>Department of Chemistry, University of Cambridge - UK</i>), Haijiao Lu, Sebastian D. Pike, Robert L. Z. Hoyer, Bertrand Reuillard, Shahab Ahmad, Dominic S. Wright, Michael De Volder, Richard Friend, Erwin Reisner Scalable Photoelectrochemical Perovskite-BiVO ₄ Tandem Devices for Solar Fuel Synthesis
15:15 - 15:30 3.3-02	<u>Ibbi Ahmet</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Institute for Solar Fuels, Germany</i>), Sean Berglund, Abdelkrim Chemseddine, Peter Bogdanoff, Raphael Präg, Roel van de Krol Planar and Nanostructured n-Si/Metal-Oxide/WO ₃ /BiVO ₄ Monolithic Tandem Devices for Unassisted Solar Water Splitting
15:30 - 16:00	Coffee Break
	SolFuel 3.4 Chair: David Tilley Room: Plenum
16:00 - 16:15 3.4-01	<u>Min-Kyu Son</u> (<i>International Institute for Carbon-Neutral Energy Research(I2CNER), Kyushu University</i>), Tatsumi Ishihara Investigation on Characterization of Sputtered Lanthanum Iron Oxide Film for Durable Photoelectrochemical Water Splitting
16:15 - 16:30 3.4-02	<u>Ronen Gottesman</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>), Angang Song, Roel van de Krol, Abdelkrim Chemseddine High-quality Stable CuBi ₂ O ₄ Photoelectrodes by Combining Pulsed Laser Deposition and Rapid Thermal Processing
16:30 - 16:45 3.4-03	<u>Anna Wilson</u> (<i>Department of Chemistry, Imperial College London</i>), Sacha Corby, Laia Francás, James Durrant, Andreas Kafizas Investigating the Enhanced Performance of WO ₃ Photoanodes from the Addition of Pd Co-catalysts
16:45 - 17:00 3.4-04	<u>Rowshanak Irani</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>), Paul Plate, Peter Bogdanoff, Fatwa Firdaus Abdi, Roel van de Krol, Karsten Harbauer Interface Energetics and Photoelectrochemistry of MnO _x -modified Ta-O-N Photoanodes

nanoGe Fall Meeting19 (NGFM19)

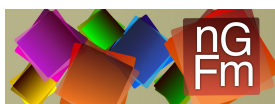
#Sol2D19. Two Dimensional Layered Semiconductors

Berlin, Germany, 2019 November 4th - 5th

Conference Chairs: Efrat Lifshitz, Cristiane Morais Smith and Doron Naveh

Conference Program

November 4th - Day 2 (Monday)	
08:45 - 09:00	Announcement of the day
	Plenary Session 1 Chair: Roel van de Krol Room: Plenum
09:00 - 09:30 1-K1	<u>Daniel Nocera</u> (<i>Harvard University</i>) Sustainable and Renewable Carbon and Nitrogen Cycles for Fuel and Crop Production
	Plenary Session 2 Chair: Doron Naveh Room: Breakout 1
09:00 - 09:30 2-K1	<u>Efrat Lifshitz</u> (<i>Schulich Faculty of Chemistry, Solid State Institute, Russell Berrie Nanotechnology Institute and the Helen Diller Quantum Information Center; Technion, Haifa, Israel</i>), Maksym Kovalenko, Andrew Rappe The Effect of Magnetism on the Optical Properties of Bulk and Confined Perovskite Structures
	Sol2D 1.1 Chair: Doron Naveh Room: Breakout 3
09:30 - 10:00 1.1-11	<u>Christophe Delerue</u> (<i>IEMN, UMR-CNRS 8520, Villeneuve d'Ascq, France</i>), Maryam Alimoradi Jazi, Tim Prins, Niall Killilea, Wiel Evers, Peter Geiregat, Zeger Hens, Wolfgang Heiss, Arjan Houtepen, Daniel Vanmaekelbergh Theory of optical absorption in semiconductor nanocrystals: From single nanocrystals to superlattices
10:00 - 10:30 1.1-12	<u>Gianluca Fiori</u> (<i>Dipartimento di Ingegneria dell'Informazione, Universita' di Pisa, Via Caruso 16, 56122, Pisa, Italy</i>) On the Perspectives of Graphene and Related Materials for Nanoelectronics Applications
10:30 - 11:00	Coffee Break
	Sol2D 1.2 Chair: Christian Klinke Room: Breakout 3
11:00 - 11:30 1.2-11	<u>Xavier MARIE</u> (<i>Université de Toulouse, INSA-CNRS-UPS, Toulouse, France</i>) Control of the Exciton Radiative Lifetime in van der Waals Heterostructures
11:30 - 12:00 1.2-12	<u>Maya Bar Sadan</u> (<i>Department of Chemistry, Ben Gurion University, Beer sheva, Israel</i>) Transition Metals Dichalcogenides: Growth mechanism, Structure and Catalytic Activity
12:00 - 12:30 1.2-13	<u>Gloria Platero</u> (<i>Instituto de Ciencia de Materiales de Madrid, CSIC</i>) Simulation of Chiral Topological Phases in Driven Low Dimensional Systems
12:30 - 14:00	Lunch
	Sol2D 1.3 Chair: Daniel Vanmaekelbergh Room: Breakout 3



14:00 - 14:15 1.3-01	Riccardo Scott, Judith Specht, Juan Climente, Marta Corona-Castro, Anatol Prudnikau, Artsiom Antanovich, Nina Owschikow, Sotirios Christodoulou, Laurens Siebbeles, Michael Quick, Guillaume Bertrand, Iwan Moreels, Mikhail Artemyev, Ulrike Woggon, Joseph Planelles, Marten Richter, <u>Alexander Achtstein</u> (<i>Institute of Optics and Atomic Physics, Technical University of Berlin, Strasse des 17. Juni 135, 10623, Berlin, Germany</i>) Tunable Emission Fine Structure and Origin of Quadratic TPA in 2D CdSe Nanoplatelets
14:15 - 14:30 1.3-02	<u>Alina Schimpf</u> (<i>University of California San Diego</i>), Jessica Geisenhoff Modulation of Precursor Reactivity for Colloidally Synthesized WSe ₂ Nanocrystals and Heterostructures
14:30 - 15:00 1.3-11	Patricia Gant, Riccardo Frisenda, <u>Andres Castellanos-Gomez</u> (<i>Materials Science Factory, Instituto de Ciencia de Materiales de Madrid (ICMM-CSIC), Madrid E-28049, Spain.</i>) Strain Engineering in 2D Materials: Towards Strain Tunable Optoelectronic Devices
15:00 - 15:30 1.3-12	<u>Ariel Ismach</u> (<i>Department of Materials Science and Engineering, Tel Aviv University</i>) Chemical Vapor Deposition of 2D Materials and Heterostructures
15:30 - 16:00	Coffee Break

Sol2D 1.4
Chair: Efrat Lifshitz
Room: Breakout 3

16:00 - 16:30 1.4-11	<u>Eduardo Marino</u> (<i>Institute of Physics, UFRJ, Cx.P. 68528, Rio de Janeiro, Brazil</i>), Leandro O. Nascimento, Van Sérgio Alves, N. Menezes, C. Morais Smith The Exciton Spectrum in Transition-Metal Dichalcogenides: a Quantum-Electrodynamics Approach
16:30 - 16:45 1.4-01	<u>Juan Ignacio Climente</u> (<i>University Jaume I, Spain</i>), José Luis Movilla, Josep Planelles Signatures of Molecular Coupling between Semiconductor Colloidal Nanoplatelets
16:45 - 17:00 1.4-02	<u>Hans Tornatzky</u> (<i>Technische Universität Berlin</i>), Roland Gillen, Hiroshi Uchiyama, Janina Maultzsch Phonon Dispersion in MoS ₂ by Inelastic X-ray Scattering

November 5th - Day 3 (Tuesday)

Plenary Session 3
Chair: Marcus Scheele
Room: Plenum

08:30 - 09:00 3-K1	<u>William Tisdale</u> (<i>Massachusetts Institute Of Technology</i>) Nonequilibrium Dynamics of Excitons and Charges in Semiconductor Nanomaterials
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Plenary Session 4
Chair: Pablo P. Boix
Room: Breakout 4

08:30 - 09:00 4-K1	<u>Juan Bisquert</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain</i>) Understanding Time Scales of Ionic and Electronic Phenomena in Perovskite Solar Cells
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Sol2D 2.1
Chair: Efrat Lifshitz
Room: Breakout 3

09:00 - 09:30 2.1-13	<u>Gerd Bacher</u> (<i>Werkstoffe der Elektrotechnik and CENIDE, University Duisburg-Essen</i>) Growth and Device Integration of 2D Materials for Optoelectronic Applications
09:30 - 10:00 2.1-11	<u>Paulina Plochocka</u> (<i>Laboratoire National des Champs Magnétiques Intenses, CNRS (FR)</i>) Excitons in MoS ₂ /MoSe ₂ Van der Waals heterostructures
10:00 - 10:30 2.1-12	<u>Daniel Vanmaekelbergh</u> (<i>Debye Institute for Nanomaterials Science, Utrecht University, The Netherlands</i>), T. Prins, M. Alimoradi Jazi, A. J. Houtepen, W. Heiss, C. Delerue Quantum and Dielectric Confinement Effects on the Absorption Strength in Semiconductors

10:30 - 11:00 **Coffee Break**

Sol2D 2.2
Chair: Maya Bar Sadan
Room: Breakout 3

11:00 - 11:30 2.2-11	<u>Anna Rodina</u> (<i>Ioffe Institute</i>) Bright and Dark Exciton Emission in Two Dimensional Nanostructures
11:30 - 12:00 2.2-12	<u>Christian Klinke</u> (<i>University of Rostock</i>) Synthesis and Optoelectronic Properties of Two-dimensional Colloidal Nanomaterials
12:00 - 12:30 2.2-01	<u>Michele Failla</u> (<i>Delft University of Technology (TU Delft), The Netherlands</i>), Bastiaan Salzmann, Daniel Vanmaekelbergh, Laurens Siebbeles Room Temperature Evidence of Multiple Heavy-hole Excitonic States and Biexciton-phonon Coupling in CdSe Nanoplatelets
12:30 - 14:00	Lunch
	Sol2D 2.3 Chair: Xavier MARIE Room: Breakout 3
14:00 - 14:30 2.3-11	<u>Laurens Siebbeles</u> (<i>Delft University of Technology (TU Delft), The Netherlands</i>) Nature and Dynamics of Charge Carriers and Excitons in Colloidal 2D Materials
14:30 - 14:45 2.3-01	<u>Faris Horani</u> (<i>Technion, Schulich Faculty of Chemistry, Solid State Institute, Russell Berrie Nanotechnology Institute</i>), Efrat Lifshitz Deciphering the evolution mechanism of 3D β -In ₂ S ₃ nanoclusters
14:45 - 15:00 2.3-02	Giorgio Giuffredi, Alessandro Mezzetti, Andrea Perego, Piero Mazzolini, Greta Tirelli, Mirko Prato, Francesco Fumagalli, Yu-Chuan Lin, Chenze Liu, Ilia Ivanov, Alex Belianinov, Alex Puzos, Gerd Duscher, David Geohegan, <u>Fabio Di Fonzo</u> (<i>Center for Nano Science and Technology, Istituto Italiano di Tecnologia</i>) Nanocrystalline, Mixed-Phase Transition Metal Oxide/Oxy-Chalcogenide Nanostructures for Efficient Hydrogen Evolution Electrocatalysis
15:00 - 15:30 2.3-12	<u>Xiaoyang Zhu</u> (<i>Department of Chemistry, Columbia University, New York, New York 10027, United States</i>) Excitons, Phonons, and Electrons in Two-dimensional Semiconductors and Heterojunctions
15:30 - 16:00	Coffee Break
	Sol2D 2.4 Chair: Efrat Lifshitz Room: Breakout 3
16:00 - 16:30 2.4-11	<u>jacky even</u> (<i>Univ Rennes, INSA Rennes, CNRS, Institut FOTON - UMR6082, F-35000 RENNES</i>) Physical Properties of Pure 2D Layered Hybrid Perovskites: Recent Results
17:00 - 19:00	Poster Session

nanoGe Fall Meeting19 (NGFM19)

#CharDy19. Charge Carrier Dynamics

Berlin, Germany, 2019 November 4th - 5th

Conference Chairs: Marcus Scheele, Vanessa Wood and Maksym Yarema

Conference Program

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	Plenary Session 2 Chair: Doron Naveh Room: Breakout 1
09:00 - 09:30 2-K1	<u>Efrat Lifshitz</u> (<i>Schulich Faculty of Chemistry, Solid State Institute, Russell Berrie Nanotechnology Institute and the Helen Diller Quantum Information Center; Technion, Haifa, Israel</i>), Maksym Kovalenko, Andrew Rappe The Effect of Magnetism on the Optical Properties of Bulk and Confined Perovskite Structures
	CharDy 1.1 Chair: Marcus Scheele Room: Breakout 2
09:30 - 10:00 1.1-11	<u>Dmitri Talapin</u> (<i>Department of Chemistry, University of Chicago, Chicago, Illinois 60637, USA</i>) Electronic Coupling and Transport in Non-covalent Inorganic Nanoscale Assemblies
10:00 - 10:30 1.1-12	Bertille martinez, Clement Livache, Charlie Greboval, Audrey Chu, nicolas goubet, <u>Emmanuel Lhuillier</u> (<i>Sorbonne Université, CNRS, Institut des NanoSciences de Paris, INSP, F-75005 Paris, France.</i>) Designing Photovoltaic Devices Using HgTe Nanocrystals for SWIR and MWIR Detection
10:30 - 11:00	Coffee Break
	CharDy 1.2 Chair: Iwan Moreels Room: Breakout 2
11:00 - 11:30 1.2-11	<u>Frank Schreiber</u> (<i>University of Tuebingen, Germany</i>) Coupled Organic-Inorganic Nanostructures (COINs): From Complex Structure Formation to Advanced Functional Properties
11:30 - 12:00 1.2-O1	<u>Arianna Marchioro</u> (<i>Laboratory for fundamental BioPhotonics, Ecole Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland</i>), Marie Bischoff, Sylvie Roke Surface Characterization of Colloidal Nanoparticles by Second Harmonic Scattering: Surface Potential and Interfacial Water Order
12:00 - 13:30	Lunch
	CharDy 1.3 Chair: Frank Schreiber Room: Breakout 2
13:30 - 14:00 1.3-11	<u>Sabrina Disch</u> (<i>Department für Chemie, Universität zu Köln</i>) Spatially Resolved Magnetization and Spin Disorder in Magnetic Nanoparticles

- 14:00 - 14:30 Ali Khan, Valerio Pinchetti, Ivo Tanghe, Zhiya Dang, Beatriz Martín-García, Zeger Hens, Dries Van Thourhout, Pieter Geiregat, Sergio Brovelli, Iwan Moreels (*Ghent University - BE*)
1.3-I2 Silver Doping in Cadmium Chalcogenide Colloidal Nanoplatelets
- 14:30 - 15:00 Maria Wächtler (*Leibniz Institute of Photonic Technology*)
1.3-O1 Charge-separation in Ni-tipped CdSe@CdS Nanorods for Hydrogen Evolution

15:30 - 16:00 **Coffee Break**

CharDy 1.4

Chair: Maksym Yarema
Room: Breakout 2

- 16:00 - 16:30 Matthias Wuttig (*RWTH Aachen University - Germany*)
1.4-I1 Phase Change Materials by Design: Taming Bond No. 6
- 16:30 - 17:00 Maria Ibáñez (*IST Austria*)
1.4-I2 High-Performance Thermoelectric Nanocomposites from Nanocrystal Building Blocks

November 5th - Day 3 (Tuesday)

Plenary Session 3

Chair: Marcus Scheele
Room: Plenum

- 08:30 - 09:00 William Tisdale (*Massachusetts Institute Of Technology*)
3-K1 Nonequilibrium Dynamics of Excitons and Charges in Semiconductor Nanomaterials

Plenary Session 4

Chair: Pablo P. Boix
Room: Breakout 4

- 08:30 - 09:00 Juan Bisquert (*Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain*)
4-K1 Understanding Time Scales of Ionic and Electronic Phenomena in Perovskite Solar Cells

CharDy 2.1

Chair: Maksym Yarema
Room: Breakout 2

- 09:00 - 09:30 David Cahen (*Weizmann Institute and Bar-Ilan University*)
2.1-I1 Proteins can be "Good" Electronic Conductors !
- 09:30 - 10:00 Mathieu Luisier (*Swiss Federal Institute of Technology (ETH) Zurich*), Aron Szabo, Cedric Klinkert, Christian Stieger, Martin Rau, Tarun Agarwal, Youseung Lee
2.1-I2 Carrier Transport in 2-D Materials: an Ab Initio Study
- 10:00 - 10:15 Raj Pandya (*Optoelectronics Group, Cavendish Laboratory, University of Cambridge, UK.*), Akshay Rao
2.1-O1 Ultrafast Long-Range Energy Transport via Strong Light-Matter Coupling in Organic Semiconductor Films
- 10:15 - 10:30 Oskar Sandberg (*Swansea University, Department of Physics, Swansea, United Kingdom.*), Kristofer Tvingstedt, Paul Meredith, Ardan Armin
2.1-O2 A Theoretical Perspective on Transient Photovoltage and Charge Extraction Techniques

10:30 - 11:00 **Coffee Break**

CharDy 2.2

Chair: Marcus Scheele
Room: Breakout 2

- 11:00 - 11:30 Jenny Nelson (*Department of Physics and Centre for Plastic Electronics, Imperial College London, London, SW7 2AZ, UK.*)
2.2-I1 Charge Carrier Dynamics at Molecular Heterojunctions in Organic Photovoltaic and Photocatalytic Systems
- 11:30 - 11:45 Stefan Zeiske (*Sêr Cymru Chair in Sustainable Advanced Materials Department of Physics, Swansea University, Singleton Park Swansea SA2 8PP*), Oskar Sandberg, Nasim Zarrabi, Paul Meredith, Ardan Armin
2.2-O1 Quantifying Trap-assisted Recombination in Thin Film Solar Cells from Intensity Dependent Photocurrent Measurements

11:45 - 12:00	<u>Ankita Kolay</u> (<i>Department of Chemistry, Indian Institute of Technology Hyderabad, Kandi, Sangareddy</i>), 2.2-O2 Melepurath Deepa Nickel Oxide Based Photocathode and Selenium Nanowires Coated Photoanode for a Highly Efficient Tandem Quantum Dot Solar Cell
12:00 - 13:30	Lunch
	CharDy 2.3 Chair: Jenny Nelson Room: Breakout 2
14:00 - 14:30	<u>Grigorios Itskos</u> (<i>Experimental Condensed Matter Physics Lab, Department of Physics, University of Cyprus</i>) 2.3-I2 Photophysics and Optoelectronic Applications of Lead Halide Perovskite Nanocrystals
14:30 - 14:45	<u>Hannes Hempel</u> (<i>Department Structure and Dynamics of Energy Materials, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>), Andrei Petsiu, Martin Stolterfoht, Pascal Becker, Dieter Neher, Rainer Eichberger, Thomas Unold 2.3-O1 Limits of Charge Carrier Transport in Halide Perovskites Revealed by Optical-Pump Terahertz-Probe Spectroscopy
14:45 - 15:00	<u>Katarzyna Pydzinska</u> (<i>Adam Mickiewicz University in Poznan, Faculty of Physics, Uniwersytetu Poznanskiego 2, 61-614 Poznan, Poland.</i>), Jesus Idigoras, Juan Anta, Victoriia Durshliak, Marcin Ziótek 2.3-O2 Charge Dynamics, Absorption and Emission Spectra of Triple Cation Perovskite Solar Cells under Different Place of Excitation, Illumination and Applied Potential.
15:00 - 15:30	<u>Thomas Kirchartz</u> (<i>IEK-5 Photovoltaics, Forschungszentrum Jülich</i>) 2.3-I1 Combination of Transient and Steady-state Photoluminescence for the Characterization of Halide Perovskite-based Layer Stacks
15:30 - 16:00	Coffee Break
16:00 - 17:00	CharDy 2.4
17:00 - 19:00	Poster Session

nanoGe Fall Meeting19 (NGFM19)

#PERInt19. Interplay of composition, structure and electronic properties in halide-perovskites

Berlin, Germany, 2019 November 4th - 6th

Conference Chairs: Pablo P. Boix, Juan-Pablo Correa-Baena and Antonio Abate

Conference Program

November 4th - Day 2 (Monday)	
08:45 - 09:00	Announcement of the day
	Plenary Session 1 Chair: Roel van de Krol Room: Plenum
09:00 - 09:30 1-K1	<u>Daniel Nocera</u> (<i>Harvard University</i>) Sustainable and Renewable Carbon and Nitrogen Cycles for Fuel and Crop Production
	Plenary Session 2 Chair: Doron Naveh Room: Breakout 1
09:00 - 09:30 2-K1	<u>Efrat Lifshitz</u> (<i>Schulich Faculty of Chemistry, Solid State Institute, Russell Berrie Nanotechnology Institute and the Helen Diller Quantum Information Center; Technion, Haifa, Israel</i>), Maksym Kovalenko, Andrew Rappe The Effect of Magnetism on the Optical Properties of Bulk and Confined Perovskite Structures
	PERInt 1.1 Chair: Antonio Abate Room: Breakout 4
09:30 - 10:00 1.1-O1	<u>Emilio J Juarez-Perez</u> (<i>ARAID Foundation</i>) Release of Sym-triazine and HCN During the Thermal Degradation of FA Based Hybrid Perovskites at Low T Conditions
10:00 - 10:30 1.1-O2	<u>T. Jesper Jacobsson</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>), Eva Unger The Power of the Crowd. What Could be Learned by Collective Pooling of all the World's Perovskite Device Data, and How do We Get There?
10:30 - 11:00	Coffee Break
	PERInt 1.2 Chair: Antonio Abate Room: Breakout 4
11:00 - 11:15 1.2-O1	<u>Loreta A. Muscarella</u> (<i>Center for Nanophotonics, AMOLF, Science Park 104, The Netherlands</i>), Eline M. Hutter, Sandy Sanchez, Christian D. Dieleman, Tom J. Savenije, Anders Hagfeldt, Michael Saliba, Bruno Ehrler Crystal Orientation and Grain Size: Do They Matter for Optoelectronic Properties of MAPbI ₃ Perovskite?
11:15 - 11:30 1.2-O2	<u>Marion Flatken</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>), Nga Phung, Antonio Abate, Armin Hoell, Robert Wendt Structural Properties of Perovskite Layers in High-Performance Solar Cells
11:30 - 12:00 1.2-I1	<u>Selina Olthof</u> (<i>University of Cologne, Institute for Physical Chemistry</i>) Determination of the Electronic Structure of Lead and Tin based Perovskites
12:00 - 13:30	Lunch
	PERInt 1.3 Chair: Pablo P. Boix Room: Breakout 4

13:30 - 14:00	<u>Nitin Padture</u> (<i>Brown University</i>)
1.3-I1	The Materials Science of Halide Perovskites and Solar Cells
14:00 - 14:15	<u>Pierfrancesco Aversa</u> (<i>LSI, CEA/DRF/IRAMIS, Ecole Polytechnique, CNRS, Institut Polytechnique de Paris, F-91128 Palaiseau</i>), Senol Öz, Eunhwan Jung, Olivier Plantevin, Olivier Cavani, Nadège Ollier, Bernard Geffroy, Sanjay Mathur, Catherine Corbel
1.3-O1	Radiative Recombination in Quadruple Cation Organic-Inorganic Mixed Halide Perovskite Layers: Electron Irradiation Induced Ageing Effects
14:15 - 14:30	<u>Robin Kerremans</u> (<i>Sêr Cymru Sustainable Advanced Materials</i>)
1.3-O2	On the Electro-optics of the Carbon Stack Perovskite Solar Cells
14:30 - 14:45	<u>Stelios Choulis</u> (<i>Cyprus University of Technology</i>)
1.3-O3	The Role of Interfaces on the Device Performance of Inverted Perovskite Photovoltaics
14:45 - 15:00	<u>Adam Pockett</u> (<i>SPECIFIC, Swansea University</i>), Matt Carnie
1.3-O4	Utilizing Optoelectronic Characterization Techniques in the Development of Triple Mesoporous Perovskite Solar Cells
15:00 - 15:30	<u>Germà Garcia-Belmonte</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain</i>)
1.3-I2	Capacitive Response of Photovoltaic Perovskites: Defects, Interfaces and Contact Reactivity

15:30 - 16:00 **Coffee Break**

PERInt 1.4

Chair: Pablo P. Boix
Room: Breakout 4

16:00 - 16:30	<u>Thomas Mayer</u> (<i>Institute of Material Science, Technische Universität Darmstadt, 64287 Darmstadt, Germany</i>), Michael Wussler, Cittaranjan Das, Iwan Zimmermann, Mohammad Khaja Nazeeruddin, Wolfram Jaegermann
1.4-O1	Tapered Cross Section Photo Electron Spectroscopy of a State of the Art Mixed Ion Perovskite Solar Cell: Band Bending Profile in the Dark and Photo-Potential Profile Under Open Circuit Illumination
16:30 - 17:00	<u>Sofia Masi</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain</i>), Salim K. M. Muhammed, Iván Mora-Seró
1.4-O2	Interaction between Perovskite and PbS QDs towards an Improved Material

November 5th - Day 3 (Tuesday)

Plenary Session 3

Chair: Marcus Scheele
Room: Plenum

08:30 - 09:00	<u>William Tisdale</u> (<i>Massachusetts Institute Of Technology</i>)
3-K1	Nonequilibrium Dynamics of Excitons and Charges in Semiconductor Nanomaterials

Plenary Session 4

Chair: Pablo P. Boix
Room: Breakout 4

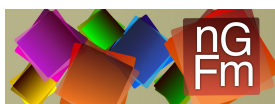
08:30 - 09:00	<u>Juan Bisquert</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain</i>)
4-K1	Understanding Time Scales of Ionic and Electronic Phenomena in Perovskite Solar Cells

PERInt 2.1

Chair: Juan-Pablo Correa-Baena
Room: Breakout 4

09:00 - 09:30	<u>Jafar Khan</u> (<i>King Abdullah University of Science and Technology (KAUST) - Saudi Arabia</i>), Esmá Ugur, Erkan Aydin, Mindaugas Kirkus, Marios Neophytou, Stefaan De Wolf, Iain McCulloch, Frederic Laquai
2.1-O1	Probing Carrier Extraction from Lead Halide Perovskite to Polymeric Charge Transport Layers by Ultrafast Transient Absorption Spectroscopy

09:30 - 10:00 2.1-02	<p>Adrián Francisco-López, Bethan Charles, Oliver J. Weber, M. Isabel Alonso, Miquel Garriga, Mariano Campoy-Quiles, Mark T. Weller, <u>Alejandro R. Goñi</u> (<i>Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus UAB, 08193 Bellaterra, Spain</i>)</p> <p>Equal Footing of Thermal Expansion and Electron-Phonon Interaction in the Temperature Dependence of Lead Halide Perovskite Band Gaps</p>
10:00 - 10:30 2.1-03	<p><u>Jose Marquez Prieto</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>), Pascal Becker, Justus Just, Hannes Hempel, Chen Li, Charles Hages, Roland Mainz, Thomas Unold</p> <p>Interplay between Composition, Structural Transitions and Optoelectronic Properties in Fully Inorganic CsPbI₃ Perovskites</p>
10:30 - 11:00	Coffee Break
	<p>PERInt 2.2 Chair: Juan-Pablo Correa-Baena Room: Breakout 4</p>
11:00 - 11:30 2.2-11	<p><u>Annamaria Petrozza</u> (<i>Istituto Italiano di Tecnologia (IIT), Genova, Italy</i>)</p> <p>Understanding Defect Physics to Stabilize Metal-halide Perovskite Semiconductors for Optoelectronic Applications</p>
11:30 - 12:00 2.2-12	<p><u>Felix Deschler</u> (<i>Walter Schottky Institut and Physics Department, Technische Universität München, 85748 Garching, Germany</i>)</p> <p>Ultrafast Spectroscopy of Carrier and Spin Dynamics in Hybrid Perovskites</p>
12:00 - 13:30	Lunch
	<p>PERInt 2.3 Chair: Emilio J. Juarez-Perez Room: Breakout 4</p>
13:30 - 14:00 2.3-01	<p><u>William Tisdale</u> (<i>Massachusetts Institute Of Technology</i>)</p> <p>Exciton-Exciton and Exciton-Lattice Interactions in 2D and 0D Perovskites</p>
14:00 - 14:30 2.3-02	<p><u>Konrad Domanski</u> (<i>Fluxim AG</i>), Brian Carlsen, Anand Agrawalla, Essa Alharbi, Michael Graetzel, Anders Hagfeldt, Wolfgang Tress</p> <p>Performance of Perovskite Solar Cells under Real-World Temperature-Illumination Variations in the Lab</p>
14:30 - 14:45 2.3-03	<p><u>Qiong Wang</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>), Antonio Abate</p> <p>How to Improve the Stability of All Inorganic Perovskite Solar Cells?</p>
14:45 - 15:00 2.3-04	<p><u>Esmat Ugur</u> (<i>King Abdullah University of Science and Technology (KAUST) - Saudi Arabia</i>), Jafar I. Khan, Erkki Alarousu, Martin Ledinsky, Sandra P. Gonzalez-Lopez, Ahmed H. Balawi, Erkan Aydin, Michele De Bastiani, Stefaan De Wolf, Frédéric Laquai</p> <p>Change in Excited State Dynamics of Perovskite Solar Cells after Exposure to Humid Air under Illumination</p>
15:00 - 15:15 2.3-05	<p><u>Nga Phung</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>), Hans Köbler, Diego Di Girolamo, Thi Tuyen Ngo, Gabrielle Sousa e Silva, Ivan Mora-Seró, Bernd Rech, Antonio Abate</p> <p>Impact of Alkaline Earth Metal Doping on the Stability of Perovskite Solar Cells</p>
15:15 - 15:30 2.3-06	<p><u>Chandni Devi</u> (<i>Electronics and Communication Engineering Department, Nitrr Chandigarh</i>)</p> <p>Performance Investigation of CH₃NH₃SnI₃ Solar Cell with HTM of CuSbS₂</p>
15:30 - 16:00	Coffee Break
	<p>PERInt 2.4 Chair: Emilio J. Juarez-Perez Room: Breakout 4</p>
16:00 - 16:30 2.4-11	<p><u>David Cahen</u> (<i>Weizmann Institute and Bar-Ilan University</i>)</p> <p>Can Halide Perovskites Teach Us New Materials Chemistry and Physics?</p>
16:30 - 16:45 2.4-01	<p><u>Moritz Futscher</u> (<i>Center for Nanophotonics, AMOLF, Science Park 104, The Netherlands</i>), Mahesh Gangishetty, Daniel Congreve, Bruno Ehrler</p> <p>The Effect of Manganese Doping on Mobile Ions in Perovskite Light-emitting Diodes</p>
17:00 - 19:00	Poster Session



November 6th - Day 4 (Wednesday)

08:45 - 09:00 **Announcement of the day & Presentation of NFM20**

Plenary Session 5

Chair: Jacky Even

Room: Plenum

09:00 - 09:30 David Mitzi (*Duke University*)

5-K1 Organic-Inorganic Perovskites: Unrivaled Versatility for Semiconductor Design and Fabrication

Plenary Session 6

Chair: Erwin Reisner

Room: Breakout 4

09:00 - 09:30 Jenny Zhang (*Department of Chemistry, University of Cambridge - UK*)

6-K1 Semi-artificial Photosynthesis: a Platform for Studying and Wiring Photosynthesis

PERInt 3.1

Chair: Pablo P. Boix

Room: Breakout 4

09:30 - 10:00 Qing Shen (*The University of Electro-Communications, Japan*), Feng Liu, Chao Ding, Yaohong Zhang, Taro

3.1-I1 Toyoda, Shuzi Hayase

Phase Stable and Less-Defect Perovskite Quantum Dots: Optical Property, Photoexcited Hot Carrier Dynamics, Charge Transfer and Application to Optoelectronic Devices

10:00 - 10:30 Michael Saliba (*Adolphe Merkle Institute, University of Fribourg, CH-1700 Fribourg, Switzerland*)

3.1-I2 Polyelemental, Multicomponent Perovskite Semiconductor Libraries through Combinatorial Screening

10:30 - 11:00 **Coffee Break**

PERInt 3.2

Chair: Iván Mora-Seró

Room: Breakout 4

11:00 - 11:30 Emilio Palomares (*Institute of Chemical Research of Catalonia (ICIQ), Barcelona Institute of Science and*

3.2-I1 *Technology (BIST)*)

Carrier Recombination and Ion Migration: Role of the Contacts.

11:30 - 12:00 Ajay Ram Srimath Kandada (*Center for Nanoscience and Technology, Istituto Italiano di Tecnologia, Via Pascoli*

3.2-I2 *70/3, Milano 20133, Italy.*), Felix Thouin, Carlos Silva

On the Nature of Exciton-Bath Interactions in Two-Dimensional Lead Halide Perovskites

12:00 - 13:30 **Lunch**

PERInt 3.3

Chair: Qing Shen

Room: Breakout 4

13:30 - 13:45 Ihteaz M. Hossain (*Institute of Microstructure Technology, Karlsruhe Institute of Technology, Hermann-von-*

3.3-O1

Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany), Saba Gharibzadeh, Paul Fassel, Bahram A. Nejand, Tobias Abzieher, Uli Lemmer, Bryce S. Richards, Ulrich W. Paetzold, Moritz Schultes, Erik Ahlswede, Philip Jackson, Michael Powala, Sören Schäfer, Michael Rienäcker, Tobias Wietler, Robby Peibst
Perovskite Tandem Photovoltaics: Employing 2D/3D Perovskite Heterostructure for Perovskite Top Solar Cell with Engineered Bandgap

13:45 - 14:00 Thibault Lemerrier (*LEPMI / Université Savoie Mont Blanc*), Lara Perrin, Emilie Planès, Solenn Berson, Lionel

3.3-O2

Flandin

Compatible Integration of ITO in NIP and PIN Perovskite Solar Cells for Semi-transparent Devices Using Same ETL and HTL

14:00 - 14:30 Eline Hutter (*Center for Nanophotonics, AMOLF, Science Park 104, 1098 XG Amsterdam, The Netherlands*),

3.3-O3

Loreta Muscarella, Lucie McGovern, Bruno Ehrler

Manipulating Halide Segregation in Mixed-Halide Perovskites with Pressure

15:30 - 16:00 **Coffee Break**

nanoGe Fall Meeting19 (NGFM19)

#MapNan19. Mapping Nanoscale Functionality with Scanning Probe Microscopy

Berlin, Germany, 2019 November 4th - 5th

Conference Chairs: Stefan Weber and Brian Rodriguez

Conference Program

November 4th - Day 2 (Monday)	
08:45 - 09:00	Announcement of the day
	Plenary Session 1 Chair: Roel van de Krol Room: Plenum
09:00 - 09:30	<u>Daniel Nocera</u> (<i>Harvard University</i>)
1-K1	Sustainable and Renewable Carbon and Nitrogen Cycles for Fuel and Crop Production
	Plenary Session 2 Chair: Doron Naveh Room: Breakout 1
09:00 - 09:30	<u>Efrat Lifshitz</u> (<i>Schulich Faculty of Chemistry, Solid State Institute, Russell Berrie Nanotechnology Institute and the Helen Diller Quantum Information Center; Technion, Haifa, Israel</i>), Maksym Kovalenko, Andrew Rappe
2-K1	The Effect of Magnetism on the Optical Properties of Bulk and Confined Perovskite Structures
	MapNan 1.1. Chair: Lukas M. Eng Room: Breakout 1
09:30 - 10:00	<u>Yunseok Kim</u> (<i>Sungkyunkwan University, Republic of Korea</i>)
1.1.-I1	Fast Local Probing of Polarization Charge
10:00 - 10:30	<u>Tobias Leonhard</u> (<i>Light Technology Institute, Karlsruhe Institute of Technology, Germany</i>), Holger Röhm, Alexander Schulz, Susanne Wagner, Michael J. Hoffmann, Alexander Colsmann
1.1.-O1	Ferroelectricity in methylammonium lead iodide perovskite solar cells
10:30 - 11:00	Coffee Break
	MapNan 1.2 Chair: Laura Fumagalli Room: Breakout 1
11:00 - 11:30	<u>Liam Collins</u> (<i>Center for Nanophase Materials Sciences, Oak Ridge National Laboratory</i>)
1.2.-I1	Multiscale Functional mapping in Hybrid Organic Inorganic Perovskites: Linking Device Hysteresis with Local Functionality
11:30 - 12:00	<u>Rajiv Giridharagopal</u> (<i>University of Washington, Department of Chemistry, Seattle, WA 98195-1700</i>), David Ginger
1.2.-O1	Advances in Multimodal Scanning Probe Microscopy at the Nanoscale
12:00 - 12:30	<u>Ilka M. Hermes</u> (<i>Max Planck Institute for Polymer Research, Mainz, Germany</i>), Andreas Best, Julian Mars, Sarah M. Vorpahl, Markus Mezger, Hans-Jürgen Butt, David S. Ginger, Kaloian Koynov, Stefan A. L. Weber
1.2.-I2	Anisotropic Charge Carrier Diffusion Correlated to Ferroelastic Twin Domains in MAPbI ₃ Perovskite
12:30 - 14:00	Lunch
	MapNan 1.3 Chair: Patrick Mesquida Room: Breakout 1

14:45 - 15:00	<u>Denis Alikin</u> (<i>Department of Physics & CICECO—Aveiro Institute of Materials, University of Aveiro, 3810–193 Aveiro, Portugal</i>), Boris Slautin, Konstantin Romanyuk, Daniele Rosato, Alexander Tselev, Andrei Kholkin
1.3-O3	Correlative Scanning Probe and Confocal Raman Microscopy for the Evaluation of Li-ion Kinetics in LiMn2O4 Cathodes
15:00 - 15:15	<u>Hiroaki BENTEN</u> (<i>Division of Materials Science, Nara Institute of Science and Technology - JP</i>)
1.3-O1	Nanoscale Morphology for Charge Transport of Conjugated Polymer Blend Films Studied by Conductive Atomic Force Microscopy
15:15 - 15:30	<u>D.O. Alikin</u> (<i>Ural Federal University, School of Natural Sciences and Mathematics, Ekaterinburg, Russia</i>), Y. Fomichov, S.P. Reis, A.S. Abramov, D.S. Chezganov, V.Ya. Shur, E. Eliseev, A. Morozovska, E.B. Araujo, A.L. Kholkin
1.3-O2	Piezoelectric Response and Polarization-Dependent Conductivity of Grain Boundaries in BiFeO3 Thin Films

15:30 - 16:00 **Coffee Break**

November 5th - Day 3 (Tuesday)

Plenary Session 3

Chair: Marcus Scheele
Room: Plenum

08:30 - 09:00	<u>William Tisdale</u> (<i>Massachusetts Institute Of Technology</i>)
3-K1	Nonequilibrium Dynamics of Excitons and Charges in Semiconductor Nanomaterials

Plenary Session 4

Chair: Pablo P. Boix
Room: Breakout 4

08:30 - 09:00	<u>Juan Bisquert</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain</i>)
4-K1	Understanding Time Scales of Ionic and Electronic Phenomena in Perovskite Solar Cells

MapNan 2.1

Chair: Liam Collins
Room: Breakout 1

09:00 - 09:30	<u>LAURA FUMAGALLI</u> (<i>National Graphene Institute, Manchester, UK</i>)
2.1-I1	Probing the Dielectric Constant on the Nanoscale: from Thin Films to DNA and Confined Water
09:30 - 10:00	<u>Riccardo Borgani</u> (<i>Nanostructure Physics, KTH Royal Institute of Technology, Stockholm, Sweden</i>), David Haviland
2.1-O1	Multifrequency AFM Methods for Electrical Characterization at the Nanoscale
10:00 - 10:15	<u>Andrea Cerreta</u> (<i>Park Systems Europe GmbH</i>), Florian Stumpf, Ilka Hermes, Manfred Madel, Linh Trinh-Xuan, Sandra Riedmüller, Daniel Sommer, Hervé Blanck
2.1-O2	Simultaneous SKPM and Current-Voltage Characterization of Slow Charging Processes in Transistors
10:15 - 10:30	<u>Katie O'Neill</u> (<i>CRANN/AMBER, School of Physics, Trinity College Dublin, Ireland</i>), Cormac Ó Coileáin, Jason Kilpatrick, Max Pechtl, Niall McEvoy, Georg S. Duesberg
2.1-O3	Manipulation of Transition Metal Dichalcogenides: Nanomachining 2D PtSe2 using AFM

10:30 - 11:00 **Coffee Break**

MapNan 2.2

Chair: Ilka Hermes
Room: Breakout 1

11:00 - 11:30	<u>Lukas M. Eng</u> (<i>Institute of Applied Physics, TU Dresden</i>)
2.2-I1	"SFM-mediated NanoMagnetism & NanoOptics: From Skyrmions to THz Near-field Optics"
11:30 - 12:00	<u>Patrick Mesquida</u> (<i>Kings College London</i>)
2.2-I2	Kevin-probe Force Microscopy of Biological Materials
12:00 - 12:15	<u>Richard Thelen</u> (<i>Karlsruhe Institute of Technology (KIT), Institute of Microstructure Technology (IMT), Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany</i>)
2.2-O1	Correlated Characterization: a Realistic Option For Future Metrology ?

12:15 - 12:30	<u>Miriam Unger</u> (<i>Bruker Nano Surfaces</i>), Anirban Roy, Qichi Hu
2.2-O2	Latest Advances in Nanoscale IR Spectroscopy and Imaging
12:30 - 14:00	Lunch
	MapNan 2.3 Chair: Brian Rodriguez Room: Breakout 1
14:00 - 14:30	<u>Mahshid Ahmadi</u> (<i>Joint Institute for Advanced Materials, Department of Materials Science and Engineering, University of Tennessee</i>), Liam Collins, Kate Higgins, Matthias Lorenz, Sergei V. Kalinin
2.3-11	Spatially Resolved Carrier Dynamics and Associated Chemical Changes at Hybrid Organic-inorganic Perovskite/Electrode Interfaces
14:30 - 14:45	<u>Amelie Axt</u> (<i>Max Planck Institute for Polymer Research, Mainz, Germany</i>), Ilka Hermes, Stefan A.L. Weber
2.3-O1	Know your full potential: Kelvin probe force microscopy on nanoscale electrical devices and at solid-liquid interfaces
15:30 - 16:00	Coffee Break
17:00 - 19:00	Poster Session

nanoGe Fall Meeting19 (NGFM19)

#RadDet19. Radiation Detection Semiconductors Materials, Physics and Devices

Berlin, Germany, 2019 November 4th - 5th

Conference Chairs: Mahshid Ahmadi and Germà Garcia-Belmonte

Conference Program

November 4th - Day 2 (Monday)	
08:45 - 09:00	Announcement of the day
	Plenary Session 1 Chair: Roel van de Krol Room: Plenum
09:00 - 09:30	<u>Daniel Nocera</u> (<i>Harvard University</i>)
1-K1	Sustainable and Renewable Carbon and Nitrogen Cycles for Fuel and Crop Production
	Plenary Session 2 Chair: Doron Naveh Room: Breakout 1
09:00 - 09:30	<u>Efrat Lifshitz</u> (<i>Schulich Faculty of Chemistry, Solid State Institute, Russell Berrie Nanotechnology Institute and the Helen Diller Quantum Information Center; Technion, Haifa, Israel</i>), Maksym Kovalenko, Andrew Rappe
2-K1	The Effect of Magnetism on the Optical Properties of Bulk and Confined Perovskite Structures
	RadDet 1.1 Chair: Mahshid Ahmadi Room: Breakout 5
09:30 - 10:00	Fei Ye, <u>Wallace C.H. Choy</u> (<i>Department of Electrical and Electronic Engineering, The University of Hong Kong</i>)
1.1-I1	A new kind of Cuboid CH ₃ NH ₃ PbI ₃ Single Crystals for Highly Performed X-ray and Photon Detectors
10:00 - 10:30	<u>Lei R. Cao</u> (<i>1. Nuclear Engineering Program, Department of Mechanical and Aerospace Engineering, The Ohio State University, Columbus, Ohio, 43210, USA</i>), Lei Pan, Yuanxiang Feng, Praneeth Kandlakunta, Jinsong Huang
1.1-I2	Acquisition and Evaluation of Gamma-ray Energy Spectrum with CsPbBr ₃
10:30 - 11:00	Coffee Break
	RadDet 1.2 Chair: Eric Lukosi Room: Breakout 5
11:00 - 11:30	<u>Gebhard J. Matt</u> (<i>I-Meet Lehrstuhl für Werkstoffe der Elektronik- und Energietechnik, FAU University</i>), Ievgen Levchuk, Judith Knüttel, Shreetu Shrestha, Johannes Dallmann, Rainer Hock, Wolfgang Heiss, Christoph J. Brabec
1.2-I1	High Performance X-ray to Current Converters Fabricated Via Sintering or Melting of a Metal-halide Perovskite
11:30 - 12:00	<u>Eric Gros-Daillon</u> (<i>University Grenoble Alpes, CEA-LETI</i>), Jean-Marie Verilhac, Oriane Baussens, Smail Amari, Julien Zaccaro, Alain Ibanez, Pierre Rohr
1.2-O1	Investigation on Chromium and PEDOT-PSS Electrodes on CH ₃ NH ₃ PbBr ₃ Single Crystals: Impact on Dark Current and X-ray Photocurrent
12:00 - 13:30	Lunch
	RadDet 1.3 Chair: Sergii Yakunin Room: Breakout 5

13:30 - 14:00 1.3-01	<p>Maximilian Schultz, Nico Leupold, Ralf Moos, <u>Fabian Panzer</u> (<i>Soft Matter Optoelectronics, Department of Physics, University of Bayreuth, Bayreuth 95440, Germany</i>)</p> <p>A Solvent free Route for Halide Perovskite Film Processing Based on Pressure Treatment of Perovskite Powders</p>
14:00 - 14:30 1.3-02	<p><u>Ferdinand Grozema</u> (<i>Delft University of Technology (TU Delft), The Netherlands</i>)</p> <p>Radiation-induced conductivity in 3D and 2D hybrid perovskites</p>
14:30 - 15:00 1.3-11	<p><u>Mao-Hua Du</u> (<i>Oak Ridge National Laboratory</i>)</p> <p>Self-Activated Low-Dimensional Metal Halide Phosphors and Scintillators</p>
15:00 - 15:30 1.3-12	<p><u>Michael Saliba</u> (<i>TU Darmstadt</i>)</p> <p>Bright and Fast Scintillation of Organolead Perovskite MAPbBr₃ at Low Temperatures</p>

15:30 - 16:00 **Coffee Break**

RadDet 1.4

Chair: Pablo P. Boix
Room: Breakout 5

16:00 - 16:30

November 5th - Day 3 (Tuesday)

Plenary Session 3

Chair: Marcus Scheele
Room: Plenum

08:30 - 09:00 3-K1	<p><u>William Tisdale</u> (<i>Massachusetts Institute Of Technology</i>)</p> <p>Nonequilibrium Dynamics of Excitons and Charges in Semiconductor Nanomaterials</p>
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Plenary Session 4

Chair: Pablo P. Boix
Room: Breakout 4

08:30 - 09:00 4-K1	<p><u>Juan Bisquert</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain</i>)</p> <p>Understanding Time Scales of Ionic and Electronic Phenomena in Perovskite Solar Cells</p>
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RadDet 2.1

Chair: Mao-Hua Du
Room: Breakout 5

09:00 - 09:30 2.1-11	<p><u>Eric Lukosi</u> (<i>Department of Nuclear Engineering, University of Tennessee, Knoxville, TN 37996</i>), Jeremy Tisdale, Travis Smith, Ryan Tan, Bogdan Dryzhakov, Andrew Shayotovich, Andrew Naylor, Kate Higgins, Jessica Charest, Bin Hu, Mahshid Ahmadi</p> <p>Engineering Hybrid Perovskite Materials for Spectroscopic Sensing of Ionizing Radiation</p>
09:30 - 10:00 2.1-12	<p><u>Yadong Xu</u> (<i>Key Laboratory of Radiation Detection Materials and Devices</i>.)</p> <p>The Progress on Solution-Processed Metal Halide Perovskites for Nuclear Radiation Detection in NPU</p>
10:00 - 10:30 2.1-13	<p><u>Sergii Yakunin</u> (<i>Laboratory for Thin Films and Photovoltaics, Empa – Swiss Federal Laboratories for Materials Science and Technology, CH-8600 Dübendorf, Switzerland</i>), Maksym Kovalenko</p> <p>Solution-processed Metal Halide Perovskites of Various Dimensionalities for Hard-radiation Detection Using Direct Conversion and Scintillation</p>

10:30 - 11:00 **Coffee Break**

RadDet 2.2

Chair: Germà Garcia-Belmonte
Room: Breakout 5

11:00 - 11:30 2.2-11	<p>K. P. Gradwohl, O. Gybin, J. Janicskó-Csáthy, N. Abrosimov, <u>R. R. Sumathi</u> (<i>Leibniz Institute for Crystal Growth (IKZ)</i>)</p> <p>High Purity Germanium Crystals for Detector Application - the Path Traveled so far and the Way Ahead</p>
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12:00 - 13:30 **Lunch**

13:30 - 15:30 **RadDet 2.3**

15:30 - 16:00	Coffee Break
16:00 - 17:00	RadDet 2.4
17:00 - 19:00	Poster Session

nanoGe Fall Meeting19 (NGFM19)

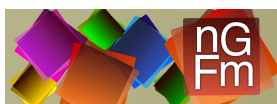
#SolCat19. (Photo)electrocatalysis for sustainable carbon utilization: mechanisms, methods, and reactor development

Berlin, Germany, 2019 November 6th - 8th

Conference Chairs: Matthew Mayer and Ludmilla Steier

Conference Program

November 6th - Day 4 (Wednesday)	
08:45 - 09:00	Announcement of the day & Presentation of NFM20
	Plenary Session 5 Chair: Jacky Even Room: Plenum
09:00 - 09:30 5-K1	<u>David Mitzi</u> (<i>Duke University</i>) Organic-Inorganic Perovskites: Unrivaled Versatility for Semiconductor Design and Fabrication
	Plenary Session 6 Chair: Erwin Reisner Room: Breakout 4
09:00 - 09:30 6-K1	<u>Jenny Zhang</u> (<i>Department of Chemistry, University of Cambridge - UK</i>) Semi-artificial Photosynthesis: a Platform for Studying and Wiring Photosynthesis
	SolCat 1.1 Chair: Ludmilla Steier Room: Breakout 1
09:30 - 10:00 1.1-O1	<u>Csaba Janáky</u> (<i>University of Szeged</i>), Balázs Endrődi, Dorottya Hursán, Egon Kecsényi, Richard Jones Scaling-up Carbon-dioxide Electroreduction: from Novel Catalysts to Electrolyzer Development
10:00 - 10:30 1.1-I1	<u>Víctor A. de la Peña O'Shea</u> (<i>1 Photoactivated Processes Unit IMDEA Energy Institute</i>) Multifunctional Materials for Solar Fuels Production by Artificial Photosynthesis
10:30 - 11:00	Coffee Break
	SolCat 1.2 Chair: Karen Chan Room: Breakout 1
11:00 - 11:30 1.2-I1	<u>Yogesh Surendranath</u> (<i>Massachusetts Institute of Technology - USA</i>) Mechanistic Insights Into Selective CO ₂ -to-Fuels Catalysis
11:30 - 11:45 1.2-O1	<u>Stefano Mezzavilla</u> (<i>Department of Materials, Imperial College London, United Kingdom</i>), Sebastian Horch, Ifan Stephens, Brian Seger, Ib Chorkendorff Active Sites for the Electrochemical Reduction of CO ₂ on Gold Surfaces – a Structure-Sensitivity Study
11:45 - 12:00 1.2-O2	<u>Wen Ju</u> (<i>Technische Universität Berlin</i>), Alexander Bagger, Frederic Jaouen, Jan Rossmeisl, Peter Strasser Mechanistic understanding of formaldehyde reduction on metals and M-N-C catalysts
12:00 - 13:30	Lunch
	SolCat 1.3 Chair: Matthew Mayer Room: Breakout 1
13:30 - 13:45 1.3-O1	<u>Paula Sebastian Pascual</u> (<i>Department of Chemistry, Nano-Science Center, University of Copenhagen, Universitetsparken 5, DK-2100 Copenhagen, Denmark</i>), Alexander Bagger, Jan Rossmeisl, Maria Escudero-Escribano Surface Sensitivity and Electrolyte Effects on Cu Single-crystalline Electrodes for CO Electroreduction



13:45 - 14:00	<u>Kai Liu</u> (<i>Delft University of Technology, The Netherlands</i>), Nathan Nesbitt, Thomas Burdyny, Wilson Smith
1.3-O2	How Local Reaction and Process Conditions Influence CO ₂ Reduction to Multicarbon Products on Copper Gas-Diffusion electrodes
14:00 - 14:30	<u>Brian Seger</u> (<i>Technical University of Denmark (DTU)</i>), Gaston Larrazabal, Ming Ma, Ib Chorkendorff, Kasper Therkildsen
1.3-O3	Analyzing the Complete Carbon Balance in High Current Density Electrochemical CO ₂ Reduction Reactors
14:30 - 15:00	<u>Beatriz Roldan Cuenya</u> (<i>Department of Interface Science, Fritz-Haber-Institute of the Max Planck Society, 14195 Berlin Germany</i>)
1.3-I1	Size, Shape, Composition and Electrolyte Effect in CO ₂ electroreduction
15:00 - 15:30	<u>Paul Kenis</u> (<i>University of Illinois at Urbana-Champaign</i>)
1.3-I2	Co-Electrolysis for Efficient Electroreduction of CO ₂ to Intermediates Fuels or Chemicals

15:30 - 16:00 Coffee Break

SolCat 1.4

Chair: Beatriz Roldan Cuenya
Room: Breakout 1

16:00 - 16:15	<u>Shahid Rasul</u> (<i>Northumbria University</i>), Eileen Yu
1.4-O3	Recycling CO ₂ to Produce Renewable Fuels
16:15 - 16:30	
16:30 - 16:45	<u>Sevedehbehnaz Varandili</u> (<i>Laboratory of Nanochemistry for Energy, EPFL, Switzerland</i>)
1.4-O1	Interfacial Synergy in Cu/metal oxide Nanocrystalline Heterodimers for Enhanced CO ₂ Electroreduction
16:45 - 17:00	<u>Pranit Iyengar</u> (<i>Laboratory of Nanochemistry for Energy, EPFL, Switzerland</i>), Gian Luca De Gregorio, Raffaella Buonsanti
1.4-O2	Facet Dependent Reactivity of Copper Nanocrystals for Electrochemical CO ₂ Reduction to Valuable Products

November 7th - Day 5 (Thursday)

08:45 - 09:00 Announcement of the day

SolCat 2.1

Chair: Matthew Mayer
Room: Breakout 1

09:00 - 09:30	<u>Erwin Reisner</u> (<i>University of Cambridge - UK</i>)
2.1-I1	Solar-driven Utilization of CO ₂ with Molecularly-Engineered Semiconductor Hybrid Systems
09:30 - 09:45	<u>Ravi Shankar</u> (<i>Barrer Centre, Department of Chemical Engineering, Imperial College London United Kingdom</i>), Michael Sachs, Laia Francàs, Daphné Lubert-Perquel, Gwilherm Kerherve, Anna Regoutz, Camille Petit
2.1-O1	Porous Boron Oxynitride for Combined CO ₂ Capture and Photoreduction
09:45 - 10:00	<u>Matthias May</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Institute for Solar Fuels, Germany</i>), Kira Rehfeld
2.1-O2	Beyond Solar Fuels: Photoelectrochemical Approaches to Negative Emissions
10:00 - 10:30	<u>Elena Mas-Marzá</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain</i>), Ramón Arcas-Martínez, Laxman Gouda, Francisco Fabregat-Santiago
2.1-O3	Photoelectrosynthesis of Imines

10:30 - 11:00 Coffee Break

SolCat 2.2

Chair: Matthew Mayer
Room: Breakout 1

11:00 - 11:30	<u>Joel Ager</u> (<i>University of California at Berkeley and Lawrence Berkeley National Laboratory</i>)
2.2-I1	Cascade Catalysis Controls Selectivity in Electrochemical Carbon Dioxide Reduction
11:30 - 12:00	Laura C Pardo-Perez, Detre Teschner, Elena Willinger, <u>Anna Fischer</u> (<i>Institute for Inorganic and Analytical Chemistry, Inorganic Functional Materials Lab, University of Freiburg, Germany</i>)
2.2-O1	SnIn@InSnOx core@shell Nanoparticles as Electrocatalysts for CO ₂ Electroreduction to Formate

12:00 - 13:30 **Lunch**

SolCat 2.3

Chair: Joel Ager
Room: Breakout 1

13:30 - 14:00 Peter Strasser (*Dept. of Chemistry, Technical University Berlin, Strasse des 17. Juni 124, TC 03, 10623 Berlin, Germany*)
2.3-11

Mechanistic Studies of the Electrochemical CO₂ Reduction on Single Site, Metallic and Hybrid Electrocatalysts

14:00 - 14:30 Karen Chan (*Technical University of Denmark (DTU)*)
2.3-12

The Effect of the Electrolyte on Electrochemical CO₂ Reduction

14:30 - 14:45 Khoa Hoang Ly (*Fakultät für Chemie und Lebensmittelchemie, Technische Universität Dresden*)
2.3-01

Operando Vibrational Spectroelectrochemistry for Studying CO₂ Reduction Catalysis Promoted by Molecularly-defined Electrocatalysts

14:45 - 15:15 Juan J. Velasco Vélez (*Fritz Haber Institute of the Max Planck Society*), Cheng-Hao Chuang, Dunfeng Gao, Qingjun Zhu, Travis Jones, Emilia Carbonio, Peter Strasser, Beatriz Roldán-Cuenya, Robert Schlögl, Axel Knop-Gericke
2.3-03

In situ X-ray Spectroscopy Investigation of the Cathodic Electroreduction of CO₂ into Valuable Chemical Feedstocks onto Copper Based Catalysts

15:15 - 15:30 Andreas Wagner (*Christian Doppler Laboratory for Sustainable SynGas Chemistry, Department of Chemistry, University of Cambridge*), Khoa Ly, Nina Heidary, István Szabó, Tamás Földes, Khaleel Assaf, Steven Barrow, Kamil Sokołowski, Nikolay Kornienko, Moritz Kuehnel, Edina Rosta, Ingo Zebger, Werner Nau, Oren Scherman, Erwin Reisner
2.3-02

Host-guest Chemistry Meets Electrocatalysis: Cucurbit[6]uril on a Au Surface as Hybrid System in CO₂ Reduction

15:30 - 16:00 **Coffee Break**

SolCat 2.4

Chair: Víctor A. de la Peña O'Shea
Room: Breakout 1

16:00 - 16:30 Idan Hod (*Ben-Gurion University of the Negev, Israel*), Ran Shimoni, Itamar Liberman, Raya Ifraemov, Wenhui He, Chanderpratap Singh
2.4-01

Metal-Organic Frameworks as a Heterogeneous Platform for (Photo)-Electrocatalytic CO₂ Reduction

16:30 - 16:45 Yannick T. Guntern (*Laboratory of Nanochemistry for Energy, EPFL, Switzerland*), James R. Pankhurst, Raffaella Buonsanti
2.4-02

Nanocrystal/Metal-Organic Framework Hybrids as Electrocatalytic Platform for CO₂ Conversion

16:45 - 17:00 Federica Arena (*National Center for Nanoscience and Technology*), Giorgio Giuffredi, Stefano Donini, Emilio Parisini, Fabio Di Fonzo
2.4-03

Bioelectrochemical TiN|FDH Catalyst for CO₂ Reduction to HCOOH

17:00 - 19:00 **Poster Session**

November 8th - Day 6 (Friday)

08:45 - 09:00 **Announcement of the day**

Plenary Session 7

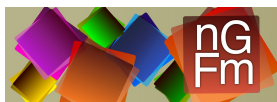
Chair: Wolfgang Tress
Room: Plenum

09:00 - 09:30 Xiaoyang Zhu (*Department of Chemistry, Columbia University, New York, New York 10027, United States*)
7-K1

Ferroelectric Polarons in Lead Halide Perovskites

Plenary Session 8

Chair: Ivan Infante
Room: Breakout 4



09:00 - 09:30 8-K1	<u>Dmitri Talapin</u> (<i>Department of Chemistry, University of Chicago, Chicago, Illinois 60637, USA</i>) Self-organization of Electrostatically and Sterically Stabilized Colloidal Nanocrystals: The Roles of Topology, Image Charges and Non-classical Nucleation
	SolCat 3.1 Chair: Ifan Stephens Room: Breakout 1
09:30 - 10:00 3.1-O1	<u>Todd Deutsch</u> (<i>Chemistry and Nanoscience Center, National Renewable Energy Laboratory</i>), Yingying Chen, Ashlee Vise, Walter Klein, Guido Bender, KC Neyerlin Electrocatalytic Reduction of Carbon Dioxide at a Triple Phase Boundary in Flow Reactors
10:00 - 10:30 3.1-I1	<u>Sophia Haussener</u> (<i>Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland</i>) Transport Effects on CO ₂ Reduction Selectivity and Activity in Mesostructured Electrodes
10:30 - 11:00	Coffee Break
	SolCat 3.2 Chair: Sophia Haussener Room: Breakout 1
11:00 - 11:30 3.2-I1	<u>Matthew Kanan</u> (<i>Chemistry, Stanford University</i>) Structure–Activity Relationships and Gas Diffusion Cell Engineering for CO ₂ and CO Electrolysis
11:30 - 11:45 3.2-O1	<u>Wenbo Ju</u> (<i>Empa, Swiss Federal Laboratories for Materials Science and Technology</i>), Corsin Battaglia Electrocatalytic Reduction of Gaseous CO ₂ to CO on Sn/Cu-Nanofiber-Based Gas Diffusion Electrodes
11:45 - 12:00 3.2-O2	<u>Tim Möller</u> (<i>The Electrochemical Energy, Catalysis, and Materials Science Laboratory, Department of Chemistry, Chemical Engineering Division, Technical University Berlin, Berlin, Germany</i>), Trung Ngo Thanh, Zarko Jovanov, Peter Strasser Electrochemical Conversion of CO ₂ into Hydrocarbons at Industrial Current Densities on Shaped Copper-oxide Gas Diffusion Electrodes
12:00 - 12:15 3.2-O3	<u>Xingli Wang</u> (<i>Technical University of Berlin</i>), Tim Möller, Henrike Schmies, Jorge Ferreira de Araújo, Peter Strasser 2-Dimensional Copper Oxides with Stable and Selective Ethylene Production for Direct CO ₂ Electroreduction from H-cell to Flow Cell
12:15 - 12:30 3.2-O4	<u>Kailun Yang</u> (<i>Delft University of Technology (TU Delft), The Netherlands</i>), Recep Kas, Wilson Smith Existence of Persistent High Local pH during Electrochemical CO ₂ Reduction in Densely Buffered Neutral Medium
12:30 - 14:00	Lunch
	SolCat 3.3 Chair: Ludmilla Steier Room: Breakout 1
14:00 - 14:30 3.3-I1	<u>Ifan Stephens</u> (<i>Department of Materials, Imperial College London, United Kingdom</i>) Pathways to energy dense fuels via CO ₂ electroreduction on Cu surfaces
14:30 - 15:00 3.3-O1	<u>Thomas Burdyny</u> (<i>Delft University of Technology (TU Delft), The Netherlands</i>), Wilson Smith Making Fuel Out of Thin Air: Visualizing an Endgame for CO ₂ Electrolyzers
15:30 - 16:00	Coffee Break
16:00 - 17:00	SolCat 3.4

nanoGe Fall Meeting19 (NGFM19)

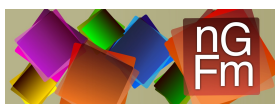
#Exciup19. Excitonic up-downconversion

Berlin, Germany, 2019 November 6th - 7th

Conference Chairs: Bruno Ehrler and Akshay Rao

Conference Program

November 6th - Day 4 (Wednesday)	
08:45 - 09:00	Announcement of the day & Presentation of NFM20
	Plenary Session 5 Chair: Jacky Even Room: Plenum
09:00 - 09:30 5-K1	<u>David Mitzi</u> (<i>Duke University</i>) Organic-Inorganic Perovskites: Unrivaled Versatility for Semiconductor Design and Fabrication
	Plenary Session 6 Chair: Erwin Reisner Room: Breakout 4
09:00 - 09:30 6-K1	<u>Jenny Zhang</u> (<i>Department of Chemistry, University of Cambridge - UK</i>) Semi-artificial Photosynthesis: a Platform for Studying and Wiring Photosynthesis
	Exciup 1.1 Chair: Bruno Ehrler Room: Breakout 5
09:30 - 10:00 1.1-I1	<u>Richard Friend</u> (<i>Cavendish Laboratory, Department of Physics, University of Cambridge, UK</i>) New materials for singlet exciton fission to triplet pairs
10:00 - 10:30 1.1-O1	<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 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 1.2-O1	<u>Raj Pandya</u> (<i>Optoelectronics Group, Cavendish Laboratory, University of Cambridge, UK.</i>), Akshay Rao Optical Projection and Spatial Separation of Spin Entangled Triplet-Pairs from the S1 (21Ag-) State of Pi-Conjugated Systems
11:30 - 12:00 1.2-I1	<u>Xiaoyang Zhu</u> (<i>Department of Chemistry, Columbia University, New York, New York 10027, United States</i>) Understanding and Controlling the Triplet Pair States in Singlet Fission
12:00 - 13:30	Lunch
	Exciup 1.3 Chair: Artem Bakulin Room: Breakout 5
14:00 - 14:15 1.3-O1	<u>David Jones</u> (<i>School of Chemistry, Bio21 Institute, University of Melbourne, , Parkville, VIC 3010, Australia.</i>) Non-traditional Singlet Fission Materials
14:15 - 14:30 1.3-O2	Elham M. Gholizadeh, <u>Timothy Schmidt</u> (<i>PhD student</i>) Oxygen-Enhanced Upconversion of near Infrared Light from Below the Silicon Band Gap
14:30 - 15:00 1.3-I1	<u>Ferdinand Grozema</u> (<i>Delft University of Technology (TU Delft), The Netherlands</i>) Triplet Dynamics in Perylenediimides



15:00 - 15:30 Luis Campos (*Department of Chemistry, Columbia University, New York, New York 10027, United States*)
1.3-I2 Materials Design for Third Generation Solar Cells

15:30 - 16:00 **Coffee Break**

Exciup 1.4

Chair: Artem Bakulin
Room: Breakout 5

16:00 - 16:30 Alexandr Zaykov (*Institute of Organic Chemistry and Biochemistry of the CAS*), Josef Michl, Zdeněk Havlas, Eric
1.4-O1 Buchanan, Milena Jovanović
Singlet Fission: Chromophores for Exciton Downconversion

November 7th - Day 5 (Thursday)

08:45 - 09:00 **Announcement of the day**

Exciup 2.1

Chair: Luis Campos
Room: Breakout 5

09:00 - 09:30 Kazuhiko Seki (*National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba Central 5, 1-1-1 Higashi, Tsukuba, Ibaraki 305-8565, Japan*), Tomoaki Yago, Ryuzi Katoh
2.1-O1 Diffusion-limited Geminate Delayed Fluorescence by Singlet Fission and Triplet Fusion

09:30 - 10:00 Artem Bakulin (*Department of Chemistry and Centre for Plastic Electronics, Imperial College London*)
2.1-I1 Carrier-Carrier vs Carrier-Phonon Interactions in Lead-halide Perovskite Materials: Role of Carrier Density, Nanoconfinement, and Surface Ligands

10:00 - 10:30 Silvia Ferro (*Institute AMOLF*), Bruno Ehrler
2.1-O2 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 Jonas Sandby Lissau (*SDU NanoSYD, Mads Clausen Institute, University of Southern Denmark*), Malika
2.2-O1 Khelfallah, Morten Madsen
Routes towards Improved Solar Energy Conversion in Organic and Hybrid Solar Cells via Photon Upconversion

11:30 - 12:00 Timothy Schmidt (*ARC Centre of Excellence in Exciton Science, School of Chemistry, UNSW Sydney, Australia*)
2.2-I1 Photochemical upconversion and photovoltaics

12:00 - 13:30 **Lunch**

Exciup 2.3

Chair: Ferdinand Grozema
Room: Breakout 5

13:30 - 14:00 Sarah Wieghold, Alexander Bieber, Zachary VanOrman, Lea Nienhaus (*Florida State University*)
2.3-O1 NIR-to-visible Upconversion Sensitized by Bulk Lead Halide Perovskites

14:00 - 14:15 Victor Gray (*Department of Chemistry, Ångström Laboratory, Uppsala University*), Jesse Allardice, Simon
2.3-O2 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 Sourav Maiti (*Delft University of Technology, The Netherlands*), Silvia Ferro, Benjamin Daiber, Alyssa van den
2.3-O3 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 Frederik Eistrup, Klaus Schwarzburg, Sergiu Levenco, Dennis Friedrich, Thomas Unold, Klaus Lips, Eva Unger,
2.3-O4 Rowan MacQueen (*Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany*)
Thin film halide perovskite as a triplet fusion sensitizer: present status and open questions

14:45 - 15:15	<u>Felix Castellano</u> (<i>North Carolina State University</i>)
2.3-11	Triplet Migration Across Quantum Dot-Molecular Interfaces
15:30 - 16:00	Coffee Break
17:00 - 19:00	Poster Session

nanoGe Fall Meeting19 (NGFM19)

#PERFuDe19. Halide perovskites: when theory meets experiment from fundamentals to devices

Berlin, Germany, 2019 November 6th - 8th

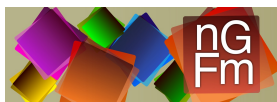
Conference Chairs: Claudine Katan, Wolfgang Tress and Simone Meloni

Conference Program

November 6th - Day 4 (Wednesday)	
08:45 - 09:00	Announcement of the day & Presentation of NFM20
	Plenary Session 5 Chair: Jacky Even Room: Plenum
09:00 - 09:30 5-K1	<u>David Mitzi</u> (<i>Duke University</i>) Organic-Inorganic Perovskites: Unrivaled Versatility for Semiconductor Design and Fabrication
	Plenary Session 6 Chair: Erwin Reisner Room: Breakout 4
09:00 - 09:30 6-K1	<u>Jenny Zhang</u> (<i>Department of Chemistry, University of Cambridge - UK</i>) Semi-artificial Photosynthesis: a Platform for Studying and Wiring Photosynthesis
10:30 - 11:00	Coffee Break
12:30 - 14:00	Lunch
	PERFuDe 1.3 Chair: David Mitzi Room: Breakout 4
15:00 - 15:30 1.3-I1	<u>jacky even</u> (<i>Univ Rennes, INSA Rennes, CNRS, Institut FOTON - UMR6082, F-35000 RENNES</i>) About the Usefulness of Symmetry and Empirical Approaches for the Theoretical Study of Bulk Halide Perovskites and Halide Perovskite Nanostructures
15:30 - 16:00	Coffee Break
	PERFuDe 1.4 Chair: David Mitzi Room: Breakout 4
16:00 - 16:30 1.4-I1	<u>Constantinos Stoumpos</u> (<i>Department of Materials Science and Technology, University of Crete, 71003 Heraklion, Crete, Greece</i>) Structure-Property Relations Two-Dimensional Halide Perovskites
16:30 - 16:45 1.4-O1	<u>Ferdinand Grozema</u> (<i>Delft University of Technology (TU Delft), The Netherlands</i>) Towards Two-dimensional Hybrid Perovskites with Functional Organic Components
16:45 - 17:00 1.4-O2	<u>Jovana Milic</u> (<i>Laboratory of Photonics and Interfaces, Institute of Chemical Sciences and Engineering, École Polytechnique Fédérale de Lausanne (EPFL), Switzerland</i>), Dominik Kubicki, Lyndon Emsley, Michael Graetzel Supramolecular Engineering of Layered Hybrid Perovskite Materials for Stable Perovskite Solar Cells
November 7th - Day 5 (Thursday)	
08:45 - 09:00	Announcement of the day
	PERFuDe 2.1 Chair: Constantinos Stoumpos Room: Plenum

09:00 - 09:30	<u>Piers Barnes</u> (<i>Imperial College London</i>)
2.1-I2	The Physics of Perovskite Devices and Interfaces
09:30 - 09:45	<u>Thomas Unold</u> (<i>Department Structure and Dynamics of Energy Materials, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>), Martin Stolterfoht, Christian Wolff, Pietro Caprioglio, Jose Marquez-Prieto, Sergej Levenco, Dieter Neher, Thomas Kirchartz
2.1-O1	Photoluminescence Quantum Efficiency, Carrier Lifetime and Quasi-Fermi Level Splitting in Highly-efficient Perovskite Solar Cells
09:45 - 10:00	<u>Paul Fassl</u> (<i>Institute of Microstructure Technology, Karlsruhe Institute of Technology, Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany</i>), Vincent Lami, Raphael Schmagar, David Becker-Koch, Yana Vaynzof, Bryce S. Richards, Ulrich W. Paetzold, Ian Howard, Felix Berger, Lukas Falk, Jana Zaumseil
2.1-O2	Modelling Self-Absorption Induced Red-Shift of the Photoluminescence of Perovskite Thin Films to Estimate the Internal Photoluminescence Quantum Efficiency and Escape Probability
10:00 - 10:30	<u>Kylie Catchpole</u> (<i>The Australian National University</i>)
2.1-I1	Understanding Interfaces and Transport Layers in Perovskite Solar Cells
10:30 - 11:00	Coffee Break
PERFuDe 2.2 Chair: Piers Barnes Room: Plenum	
11:00 - 11:30	<u>Evelyne Knapp</u> (<i>Institute of Computational Physics, Zurich University of Applied Sciences (ZHAW), 8401 Winterthur (Switzerland)</i>), Andreas Schiller, Martin T. Neukom, Simon Züfle, Beat Ruhstaller
2.2-I1	Consistent Device Model of a Perovskite Solar Cell for Multiple Experiments
11:30 - 11:45	<u>Paramvir Ahlawat</u> (<i>Laboratory of Computational Chemistry and Biochemistry, Dept. of Chemistry, Ecole Polytechnique Fédérale de Lausanne</i>), Michele Parrinello, Ursula Rothlisberger
2.2-O1	Molecular Dynamics Simulations of Nucleation of Lead Halide Perovskites
11:45 - 12:00	<u>Mykhailo Sytnyk</u> (<i>Friedrich Alexander University Erlangen-Nuremberg</i>), AmirAbbas YousefiAmin, Tim Freund, Wolfgang Heiss, Christina Harreiss, Erdmann Spiecker, Valentine V. Volobuev, Jędrzej Korczak, Tomasz Story, Gunther Springholz, Annemarie Pfnür, Klaus Götz, Tobias Unruh, Kamalpreet Singh, Oleksandr Voznyy, Ole Lytken
2.2-O2	Epitaxial Metal Halide Perovskites by InkJet Printing
12:00 - 12:15	<u>Florian Mathies</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>), Hampus Näsström, Oleksandra Shargaieva, Gopinath Paramasivam, Eva Unger
2.2-O3	Opportunities of Inkjet-printed Organic Metal Halide Perovskite Solar Cells
12:15 - 12:30	<u>Kai Oliver Brinkmann</u> (<i>University of Wuppertal, Germany</i>), Tobias Gahlmann, Junjie He, Christian Tückmantel, Manuel Theisen, Tim Becker, Johannes Bahr, Cedric Kreusel, Jun Song, Junle Qu, Thomas Riedl
2.2-O4	Intrinsic ALD Barriers Enable Processing on Top of Perovskite Solar Cells from Environmentally Friendly Solvents
12:30 - 14:00	Lunch
PERFuDe 2.3 Chair: Jovana Milic Room: Plenum	
14:00 - 14:30	<u>Marco Bernardi</u> (<i>Department of Applied Physics, California Institute of Technology,</i>)
2.3-I1	Advances in Computing Charge Transport in Perovskite Materials from First Principles
14:30 - 14:45	<u>Géraud Delport</u> (<i>Optoelectronics Group, Cavendish Laboratory, University of Cambridge, UK.</i>), Camille Stavrakas, Edward Barnard, Miguel Anaya, Samuel D. Stranks
2.3-O1	Understanding the Influence of the Microscopic Structure of 2D and 3D Perovskites Materials on the Local Diffusion of Carriers.
14:45 - 15:00	<u>Athanasios Koliogiorgos</u> (<i>Faculty of Electrical Engineering, Czech Technical University in Prague, Prague, Czech Republic</i>), Christos Garoufalos, Iosif Galanakis, Sotirios Baskoutas
2.3-O3	Electronic and Optical Properties of ABX ₃ (A = Cs, CH ₃ NH ₃ /B = Ge, Pb, Sn, Ca, Sr/X = Cl, Br, I) Perovskite Quantum Dots

15:00 - 15:15 2.3-04	<u>Joachim Breternitz</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>), Frederike Lehmann, Sarah Barnett, Hariott Nowell, Susan Schorr Crystallography of Hybrid Halide Perovskites: Fundamental Reasoning of Ferroelectricity in MAPbI ₃
15:15 - 15:30 2.3-02	<u>Bogdan Benin</u> (<i>Institute of Inorganic Chemistry, Department of Chemistry and Applied Bioscience, ETH Zurich, 8093 Zurich, Switzerland</i>), Sergii Yakunin, Dmitry Dirin, Maksym Kovalenko Low-dimensional Tin-halides: Properties and Novel Applications
15:30 - 16:00	Coffee Break
PERFuDe 2.4 Chair: Kylie Catchpole Room: Plenum	
16:00 - 16:30 2.4-11	<u>Paulina Plochocka</u> (<i>Laboratoire National des Champs Magnétiques Intenses, CNRS</i>) Excitons and Polarons in Hybrid Perovskite
16:30 - 16:45 2.4-01	<u>Laura Canil</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>), Antonio Abate Work Function Tuning through Self-Assembling Monolayers of Fluorinated Molecules
16:45 - 17:00	
17:00 - 19:00	Poster Session
November 8th - Day 6 (Friday)	
08:45 - 09:00	Announcement of the day
Plenary Session 7 Chair: Wolfgang Tress Room: Plenum	
09:00 - 09:30 7-K1	<u>Xiaoyang Zhu</u> (<i>Department of Chemistry, Columbia University, New York, New York 10027, United States</i>) Ferroelectric Polarons in Lead Halide Perovskites
Plenary Session 8 Chair: Ivan Infante Room: Breakout 4	
09:00 - 09:30 8-K1	<u>Dmitri Talapin</u> (<i>Department of Chemistry, University of Chicago, Chicago, Illinois 60637, USA</i>) Self-organization of Electrostatically and Sterically Stabilized Colloidal Nanocrystals: The Roles of Topology, Image Charges and Non-classical Nucleation
PERFuDe 3.1 Chair: Marco Bernardi Room: Plenum	
09:30 - 10:00 3.1-11	<u>Antonio Guerrero</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain</i>) Role of Migrating Ions in Lead Halide Perovskites at Modifying the External Interfaces
10:00 - 10:15 3.1-01	<u>Philippe Tamarat</u> (<i>LP2N, Univ. Bordeaux, IOGS & CNRS, Talence (France)</i>) Band-edge Exciton Fine Structure in Lead-halide Perovskite Nanocrystals
10:15 - 10:30 3.1-02	Géraud Delport, Gabriel Chehade, Ferdinand Lédée, Hiba Diab, Cosme Milési-Brault, Gaëlle Trippé-Allard, Jacky Even, Jean-Sébastien Lauret, Emmanuelle Deleporte, <u>Damien Garrot</u> (<i>Groupe d'Etude de la Matière Condensée, CNRS, Université de Versailles Saint-Quentin-en-Yvelines, 45 Avenue des Etats Unis, Université Paris-Saclay, 78035, Versailles</i>) Exciton-Exciton Annihilation in Two-dimensional Halide Perovskites
10:30 - 11:00	Coffee Break
PERFuDe 3.2 Chair: Didier Mayou Room: Plenum	
11:00 - 11:30 3.2-11	<u>Iván Mora-Seró</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain</i>) Characterization of Transport and Recombination in Perovskite Solar Cells by Impedance Spectroscopy



11:30 - 11:45	Rajendrakumar Gunasekaran, <u>Prabakar Kandsamy</u> (<i>Pusan National University</i>)
3.2-O1	Open Air Processed Perovskite Solar Cells using Dopant-Free and High Mobility Hydrophobic hole-transporting materials
11:45 - 12:00	<u>Lara Perrin</u> (<i>Univ. Grenoble Alpes, Univ. Savoie Mont Blanc, CNRS, Grenoble INP, LEPMI, France</i>), Manon Spalla, Emilie Planes, Muriel Matheron, Solenn Berson, Lionel Flandin
3.2-O2	Protective role of gold in case of tert-butylpyridine doped hole transporting layers via gold-pyridine complexes formation: highlighting of a direct impact on perovskite stability
12:00 - 12:15	<u>Felix Lang</u> (<i>Cavendish Laboratory, Department of Physics, University of Cambridge, UK</i>), Marko Jošt, Kyle Frohna, Amran A. Ashouri, Alan R. Bowman, Tobias Bertram, Anna Belen Morales-Vilches, Elizabeth M. Tennyson, Krzysztof Galkowski, Bernd Stannowski, Christian A. Kaufmann, Rutger Schlatmann, Jürgen Bundesmann, Andrea Denker, Jörg Rappich, Steve Albrecht, Heinz-Christoph Neitzert, Norbert H. Nickel, Samuel D. Stranks
3.2-O3	Radiation Hardness of Perovskite/Silicon and Perovskite/CIGS Tandem Solar Cells under Proton Irradiation
12:15 - 12:30	<u>Wouter Van Gompel</u> (<i>UHasselt – Hasselt University, Institute for Materials Research (IMO-IMOMEC), Agoralaan – Building D, 3590 Diepenbeek, Belgium</i>), Roald Herckens, Bart Ruttens, María Gélvez-Rueda, Nadège Marchal, David Beljonne, Kristof Van Hecke, Laurence Lutsen, Dirk Vanderzande
3.2-O4	Towards a Functional Organic Layer for Low-Dimensional Hybrids
12:30 - 14:00	Lunch
	PERFuDe 3.3 Chair: Iván Mora-Seró Room: Plenum
14:00 - 14:30	<u>Marina Filip</u> (<i>Molecular Foundry, Lawrence Berkeley National Laboratory</i>), Jonah Haber, Jeffrey Neaton
3.3-I1	Excitonic Properties of Lead-Halide Perovskites from First Principles Computational Modeling
14:30 - 14:45	<u>Linn Leppert</u> (<i>Institute of Physics, University of Bayreuth, Germany</i>)
3.3-O1	Optoelectronic Properties of Halide Perovskites with ab Initio Many-body Perturbation Theory
14:45 - 15:00	<u>Sahel Ashhab</u> (<i>Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Doha</i>)
3.3-O2	Intermediate-scale Simulations of Lead-halide Perovskites Using Tight-binding and Spin Models
15:00 - 15:30	
15:30 - 16:00	Coffee Break
	PERFuDe 3.4 Chair: Marina Filip Room: Plenum
16:00 - 16:15	<u>Arpit Mishra</u> (<i>EDF R&D, Department EFESE, EDF Lab – Paris Saclay, France</i>), Philippe Baranek, Andrei Postnikov
3.4-O3	First-principles Investigation of CO ₂ , CO and O ₂ Adsorption on Perfect and Defective CsPbX ₃ (X= Cl, Br, I) Surfaces.
16:15 - 16:30	<u>RAVI KASHIKAR</u> (<i>Indian Institut of Technology Madras</i>), Mayank Gupta, B. R. K. Nanda
3.4-O4	Occurrence of Invariant Dirac States in CsSnI ₃ polymorphs Under Strain
16:30 - 16:45	<u>Kunnummal M. Muhammed Salim</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain</i>), Sofia Masi, Ehsan Hassanabadi, Azhar Fakharuddin, Ivan Mora Sero
3.4-O1	Electron Transport Layer and Buffer Layer Optimization for Highly Efficient CsPbI ₃ Quantum Dot Based Light Emitting Diodes
16:45 - 17:00	<u>Qiong Wang</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>)
3.4-O2	Investigation of Charge Extraction and Accumulation in Perovskite Solar Cells at the Interface of Perovskite and Hole Transport Layer.

nanoGe Fall Meeting19 (NGFM19)

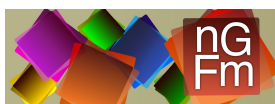
#OPV19. Organic Photovoltaics: recent breakthroughs, advanced characterization and modelling

Berlin, Germany, 2019 November 6th - 8th

Conference Chairs: Jörg Ackermann and Uli Würfel

Conference Program

November 6th - Day 4 (Wednesday)	
08:45 - 09:00	Announcement of the day & Presentation of NFM20
	Plenary Session 5 Chair: Jacky Even Room: Plenum
09:00 - 09:30 5-K1	<u>David Mitzi</u> (<i>Duke University</i>) Organic-Inorganic Perovskites: Unrivaled Versatility for Semiconductor Design and Fabrication
	Plenary Session 6 Chair: Erwin Reisner Room: Breakout 4
09:00 - 09:30 6-K1	<u>Jenny Zhang</u> (<i>Department of Chemistry, University of Cambridge - UK</i>) Semi-artificial Photosynthesis: a Platform for Studying and Wiring Photosynthesis
	OPV 1.1 Chair: Harald W. Ade Room: Breakout 2
09:30 - 10:00 1.1-11	<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 Device-scale and Molecular-scale Modelling of Organic Photovoltaic Devices
10:00 - 10:30 1.1-12	<u>Thomas Kirchartz</u> (<i>IEK-5 Photovoltaics, Forschungszentrum Jülich</i>) Capacitance-based Characterization of Organic Solar Cells
10:30 - 11:00	Coffee Break
	OPV 1.2 Chair: Jenny Nelson Room: Breakout 2
11:00 - 11:30 1.2-01	<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 Impact of Marginal Exciton – Charge-transfer State Offset on Charge Generation and Recombination in Polymer: Fullerene Solar Cells
11:30 - 12:00 1.2-02	Mehrad Ahmadvpour, Andre Luis Fernandes Cauduro, Jani Lamminaho, Elodie Destouesse, Mina Mirsafoie, 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>) Metal Oxide Interlayers for Scalable Organic Photovoltaic Devices
12:00 - 12:15 1.2-03	<u>Sri Harish Kumar Paleti</u> (<i>King Abdullah University of Science and Technology (KAUST) - Saudi Arabia</i>), Anastasia Markina, Nicola Gasparini, Denis Andrienko, Derya Baran An Energetic Perspective to Improve the Photostability of Non-Fullerene Acceptor based Organic PhotoVoltaics
12:30 - 14:00	Lunch



OPV 1.3

Chair: Martin Pfannmüller
Room: Breakout 2

- 14:00 - 14:30 Harald Ade (*North Carolina State University*)
1.3-I1 Phase Behavior, Miscibility, and Stability of Non-Fullerene Organic Solar Cells
- 14:30 - 14:45 Jun Yan, Elham Rezasoltani, Mohammed Azzouzi, Flurin D. Eisner, Anne A. Y. Guilbert, Jenny Nelson
(*Department of Physics and Centre for Plastic Electronics, Imperial College London, London, SW7 2AZ, UK.*)
1.3-O1 Relating Microstructure Behaviour to Charge Transfer States Properties and Energy Losses in Organic Bulk Heterojunction Solar Cells
- 14:45 - 15:00 Sebastian Wilken (*Linköping University, Sweden*), Oskar J. Sandberg, Dorothea Scheunemann, Ronald
1.3-O2 Österbacka
Watching Space Charge Build up in an Organic Solar Cell
- 15:00 - 15:15 Riva Alkarsifi (*CINaM - UMR 7325 CNRS - Aix Marseille Université Campus de Luminy – Case 913 13288*
1.3-O3 *MARSEILLE Cedex 09*), Yatzil Avalos, Pavlo Perkhun, Mats Fahlman, Christine Vidélot-Ackermann, Olivier Margeat, Jörg Ackermann
Highly efficient doped Nickel Oxide Nanocrystal based inks for Solution-Processed Hole Extraction Layers in Polymer Solar Cells
- 15:15 - 15:30 Yatzil Avalos (*CINaM - UMR 7325 CNRS - Aix Marseille Université Campus de Luminy – Case 913 13288*
1.3-O4 *MARSEILLE Cedex 09*), Agnès Rivaton, Carmen M. Ruiz, David Duché, Jean-Jacques Simon, Pavlo Perkhun, Olivier Margeat, Christine Vidélot-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.

15:30 - 16:00 **Coffee Break**

OPV 1.4

Chair: Uli Würfel
Room: Breakout 2

- 16:00 - 16:15 Vida Turkovic (*SDU NanoSYD, Mads Clausen Institute, University of Southern Denmark*), Michela Prete, Mikkel
1.4-O1 Bregnhøj, Liana Inasaridze, Dmytro Volyniuk, Filip 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

November 7th - Day 5 (Thursday)

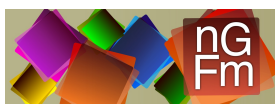
08:45 - 09:00 **Announcement of the day**

OPV 2.1

Chair: Thomas Kirchartz
Room: Breakout 2

- 09:00 - 09:15 Flurin Eisner (*Department of Physics, Imperial College London, UK*), Mohammed Azzouzi, Zhuping Fei, Martin
2.1-O1 Heeney, Jenny Nelson
Hybridization of Local Exciton and Charge-Transfer States Reduces Nonradiative Voltage Losses in Organic Solar Cells
- 09:15 - 09:30 Wolfgang Köntges (*Centre for Advanced Materials (CAM), Heidelberg University, Heidelberg, Germany*), Pavlo
2.1-O2 Perkhun, Rasmus R. Schröder, Elena Barulina, Olivier Margeat, Christine Vidélot-Ackermann, Jörg Ackermann, Martin Pfannmüller
Optimal Interfacial Composition and Crystallinity of Non-Fullerene Acceptor Blends for Organic Photovoltaics
- 09:30 - 10:00 Martin Pfannmüller (*Centre for Advanced Materials (CAM), Heidelberg University, Heidelberg, Germany*)
2.1-I1 Understanding the Photophysical Processes within Organic Photovoltaic Blends by Functional Imaging in an Analytical Electron Microscope

10:00 - 10:30 2.1-03	<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 Chair: Morten Madsen Room: Breakout 2
11:00 - 11:30 2.2-11	<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 2.2-01	<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 Pfanmüller, 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 2.2-02	<u>Balder Adad Nieto Diaz</u> (<i>Durham University</i>), Christopher Pearson, Christopher Groves 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 Chair: Jörg Ackermann Room: Breakout 2
14:00 - 14:30 2.3-01	<u>Jafar Khan</u> (<i>King Abdullah University of Science and Technology (KAUST) - Saudi Arabia</i>), Yuliar Firdaus, Federico Cruciani, Shengjian Liu, Denis Andrienko, Thomas Anthopoulos, Pierre Beaujuge, Frederic Laquai Non-geminate Recombination Limits Fill Factor in Polymer:ITIC Bulk Heterojunction Solar Cells
14:30 - 14:45 2.3-02	<u>Jochen Kammerer</u> (<i>Centre for Advanced Materials (CAM), Heidelberg University, Heidelberg, Germany</i>), Rasum R. Schröder, Pavlo Perkhun, Olivier Margeat, Wolfgang Köntges, Christine Videlot-Ackermann, Jörg Ackermann, Irene Irene Wacker, Martin Pfanmüller Morphology of NFA Organic Photovoltaic Blends by Automated Segmentation of Spatially Resolved Electron Spectra
14:45 - 15:15 2.3-11	<u>Wouter Maes</u> (<i>UHasselt – Hasselt University, Institute for Materials Research (IMO-IMOMEC), Agoralaan – Building D, 3590 Diepenbeek, Belgium</i>), Omar Beckers, Koen Vandewal, Pieter Verstappen Understanding Batch-to-Batch Variations of Push-Pull Type Conjugated Polymers for Organic Photovoltaics
15:15 - 15:30 2.3-03	<u>Alexis Prel</u> (<i>Laboratoire ICube, Université de Strasbourg, CNRS, UMR 7357, 23 rue du Loess, 67037 Strasbourg, France</i>), Abir Rezgui, Anne-Sophie Cordan, Yann Leroy 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)	
08:45 - 09:00	Announcement of the day
	Plenary Session 7 Chair: Wolfgang Tress Room: Plenum
09:00 - 09:30 7-K1	<u>Xiaoyang Zhu</u> (<i>Department of Chemistry, Columbia University, New York, New York 10027, United States</i>) Ferroelectric Polarons in Lead Halide Perovskites
	Plenary Session 8 Chair: Ivan Infante Room: Breakout 4



09:00 - 09:30 8-K1	<u>Dmitri Talapin</u> (<i>Department of Chemistry, University of Chicago, Chicago, Illinois 60637, USA</i>) Self-organization of Electrostatically and Sterically Stabilized Colloidal Nanocrystals: The Roles of Topology, Image Charges and Non-classical Nucleation
	OPV 3.1 Chair: Uli Würfel Room: Breakout 2
09:30 - 10:00 3.1-O1	<u>Elena Barulina</u> (<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 Videlot-Ackermann, Jörg Ackermann Lifetime Investigation of Highly Efficient Polymer Solar Cells Based on ITIC Derivatives under Different Light Sources
10:00 - 10:30 3.1-I1	<u>Sadok Ben Dkhil</u> (<i>Dracula Technologies</i>), Florent Pourcin, Elena Barulina, Pavlo Perkhun, Olivier Margeat, Christine Vidélot Ackermann, Jörg Ackermann, Jérôme Vernet, Pascal Pierron, Brice Cruchon Fully Inkjet Printed High Efficiency Flexible and Free Design OPV Modules for Indoor Application
10:30 - 11:00	Coffee Break
	OPV 3.2 Chair: Sadok Ben Dkhil Room: Breakout 2
11:00 - 11:15	
11:15 - 11:30 3.2-O3	<u>Wolfgang Wenzel</u> (<i>Institute of Nanotechnology, Karlsruhe Institute of Technology, Germany</i>), Pascal Friederich, Franz Symalla, Artem Fediai, Velimir Meded, Alexander Colsmann, Mario Ruben Scale-Bridging Models for Organic Semiconductors
11:30 - 11:45 3.2-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 3.2-O2	<u>Tanvi Upreti</u> (<i>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 Chair: Jörg Ackermann Room: Breakout 2
14:00 - 14:15 3.3-O1	<u>Ahmed Balawi</u> (<i>King Abdullah University of Science and Technology (KAUST) - Saudi Arabia</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 KARUTHE DATH</u> (<i>King Abdullah University of Science and Technology (KAUST) - Saudi Arabia</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

nanoGe Fall Meeting19 (NGFM19)

#NCFun19. Fundamental Processes in Semiconductor Nanocrystals

Berlin, Germany, 2019 November 7th - 8th

Conference Chairs: Ivan Infante and Jonathan Owen

Conference Program

November 7th - Day 5 (Thursday)	
08:45 - 09:00	Announcement of the day
	NCFun 1.1 Chair: Ivan Infante Room: Breakout 4
09:00 - 09:30	<u>Brandi Cossairt</u> (<i>University of Washington, Department of Chemistry, Seattle, WA 98195-1700</i>)
1.1-11	Understanding and Directing the Structure and Properties of Indium Phosphide Nanocrystals through Chemistry
09:30 - 10:00	<u>Zeger Hens</u> (<i>Ghent University - BE</i>)
1.1-12	Properties of the Bright Exciton in InP Quantum Dots
10:00 - 10:30	<u>Sohee Jeong</u> (<i>Sungkyunkwan University, Republic of Korea</i>)
1.1-13	III-V Colloidal Nanocrystals: Control over the Covalent Surfaces
10:30 - 11:00	Coffee Break
	NCFun 1.2 Chair: Zeger Hens Room: Breakout 4
11:00 - 11:30	<u>Nathan Neale</u> (<i>Chemical and Nanoscale Sciences Center, National Renewable Energy Laboratory</i>), Michael Carroll, Rens Limpens, Lance Wheeler, Gregory Pach
1.2-11	Surface Chemistry Effects on Quantum Confinement in Group IV Nanocrystals
11:30 - 12:00	<u>Heather Kulik</u> (<i>Department of Chemical Engineering, Massachusetts Institute of Technology</i>)
1.2-12	Electronic Structure Origins of Surface-Dependent Growth in III-V Quantum Dots
12:00 - 12:30	<u>Alina Schimpf</u> (<i>University of California San Diego</i>), Alexander Rachkov
1.2-01	Synthesis of Monodisperse and Size-Tunable Colloidal Copper Phosphide Nanocrystals by Redox Disproportionation of Aminophosphine
12:30 - 14:00	Lunch
	NCFun19 1.3 Chair: Jonathan Owen Room: Breakout 4
14:00 - 14:30	<u>Fabien Delpech</u> (<i>Laboratoire de Physique et Chimie des Nano-Objets (LPCNO), University of Toulouse - INSA - CNRS</i>)
1.3-12	Controlling the Surface of Metal Phosphide Quantum Dots: Reaction Chemistry, Growth and Optical Properties
14:30 - 15:00	<u>Arjan Houtepen</u> (<i>Delft University of Technology (TU Delft), The Netherlands</i>)
1.3-11	Electrochemical Control over Semiconductor Nanomaterials: Doping and Surface Reduction
15:00 - 15:15	<u>Solrun Gudjonsdottir</u> (<i>Delft University of Technology (TU Delft), The Netherlands</i>), Ward van der Stam, Christel Koopman, Bob Kwakkenbos, Arjan Houtepen
1.3-01	On the Stability of Permanent Electrochemical Doping of Quantum Dot, Fullerene and Conductive Polymer Films in Frozen Electrolytes for Use in Semiconductor Devices
15:15 - 15:30	<u>Felix Thiel</u> (<i>Institute of Physical Chemistry, University of Hamburg</i>), Cristina Palencia Ramirez, Horst Weller
1.3-02	Cation Exchange Reactions in Nanorods: Vacancy-Mediated Diffusion in Cu-deficient Cu(2-x)S Nanorods during the Formation of a Ternary System
15:30 - 16:00	Coffee Break

NCFun19 1.4 Chair: Heather Kulik Room: Breakout 4	
16:00 - 16:15 1.4-O1	<u>Anumol s</u> (<i>Solid State and Structural Chemistry Unit, Indian Institute of Science (IN)</i>), Biswajit Bhattacharyya, V. V. R. Kishore, Abhinav Kumar, Guru Pratheep Rajasekar, D. D. Sarma, Anshu Pandey Spectroscopic Insights into the Electronic Structure of Copper Iron Sulfide Nanocrystals
16:15 - 16:30 1.4-O2	<u>Cristina Palencia Ramirez</u> (<i>Institute of Physical Chemistry, University of Hamburg</i>), Robert Seher, Jan Krohn, Felix Thiel, Felix Lehmkuhler, Horst Weller Formation Dynamics of Nanocrystals: In-situ Observation of the Growth of CdSe NCs Via Magic-sized Clusters Intermediates.
16:30 - 17:00 1.4-I1	<u>Oleksandr Voznyy</u> (<i>University of Toronto</i>) Ab Initio Studies of Surface Chemistry and Exciton Fine Structure in Semiconductor Nanocrystals
17:00 - 19:00 Poster Session	
November 8th - Day 6 (Friday)	
08:45 - 09:00 Announcement of the day	
Plenary Session 7 Chair: Wolfgang Tress Room: Plenum	
09:00 - 09:30 7-K1	<u>Xiaoyang Zhu</u> (<i>Department of Chemistry, Columbia University, New York, New York 10027, United States</i>) Ferroelectric Polarons in Lead Halide Perovskites
Plenary Session 8 Chair: Ivan Infante Room: Breakout 4	
09:00 - 09:30 8-K1	<u>Dmitri Talapin</u> (<i>Department of Chemistry, University of Chicago, Chicago, Illinois 60637, USA</i>) Self-organization of Electrostatically and Sterically Stabilized Colloidal Nanocrystals: The Roles of Topology, Image Charges and Non-classical Nucleation
NCFun 2.1 Chair: Ivan Infante Room: Breakout 4	
09:30 - 10:00 2.1-I1	<u>Raquel Galian</u> (<i>Universidad de Valencia - ICMol (Institute of Molecular Science)</i>), Soranyel Gonzalez Carrero, Ignacio Rosa-Pardo, Julia Pérez-Prieto Critical Role of Ligands on the Photoluminescence and Morphology of Colloidal Perovskite Nanocrystals
10:00 - 10:30 2.1-O1	<u>Anna Loiudice</u> (<i>Laboratory of Nanochemistry for Energy, EPFL, Switzerland</i>), Seryio Saris, Raffaella Buonsanti Metal Oxide Shell to Study Nanoscale Phenomena in Perovskite Quantum Dots
10:30 - 11:00 Coffee Break	
NCFun19 2.2 Chair: Maryna Bodnarchuk Room: Breakout 4	
11:00 - 11:15 2.2-O1	<u>Valeria Mantella</u> (<i>Laboratory of Nanochemistry for Energy, EPFL, Switzerland</i>), Silviya Ninova, Seryio Saris, Anna Loiudice, Ulrich Aschauer, Raffella Buonsanti Synthesis and Size-dependent Optical Properties of Intermediate Band Gap Cu ₃ VS ₄ Nanocrystals
11:15 - 11:30 2.2-O2	<u>Evert Dhaene</u> (<i>Ghent University - BE</i>), Jonas Billel, Ellie Bennett, Isabel Van Driessche, Jonathan De Roo The Trouble With 1-Octadecene: Polymerization During Nanocrystal Synthesis
11:30 - 12:00 2.2-I1	<u>Iván Mora-Seró</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain</i>) Phase Segregation in Perovskite Nanoparticles and Applications of these Materials in Photocatalytic Processes
12:00 - 12:30	
12:30 - 14:00 Lunch	

NCFun 2.3

Chair: Jonathan Owen
Room: Breakout 4

- 14:00 - 14:30
2.3-I1 Maryna Bodnarchuk (*EMPA - Swiss Federal Laboratories for Materials Science and Technology*), Simon Boehme, Caterina Bernasconi, Maksym Kovalenko, Ivan Infante
Surface Chemistry of Colloidal Cesium Lead Halides Nanocrystals
- 14:30 - 15:00
2.3-I2 Daniel Gamelin (*University of Washington, Department of Chemistry, Seattle, WA 98195-1700*)
Solar Quantum Cutting and Spectral Downconversion using Ytterbium-Doped Metal-Halide Perovskites
- 15:00 - 15:30
2.3-I3 Liberato Manna (*Istituto Italiano di Tecnologia (IIT), Genova, Italy*)
Beyond Lead Halide Perovskite Nanocrystals

15:30 - 16:00 **Coffee Break**

CNFun 2.4

Chair: Iván Mora-Seró
Room: Breakout 4

- 16:00 - 16:15
2.4-O1 Marcello Righetto (*Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University 637371 Singapore*), Swee Sien Lim, David Giovanni, Melvin Lim, Tze Chien Sum
Cooling and Trapping. A Complete Map of Hot Carrier Processes in Hybrid Perovskite Nanocrystals
- 16:15 - 16:30
2.4-O2 M. Yenal Yalcinkaya (*Department of Materials Science and Engineering, Izmir Institute of Technology, Turkey*), C. Meric Guvenc, Sercan Ozen, Hasan Sahin, Mustafa M. Demir
Enhanced stability and optical properties of Gd³⁺ doped CsPbI₃ nanocrystals