
# 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**<br>Chair: Ivan Infante<br>Room: Breakout 4 |
| 09:00 - 09:30<br>1.1-I1 | Brandi Cossairt *(University of Washington, Department of Chemistry, Seattle, WA 98195-1700)*<br>Understanding and Directing the Structure and Properties of Indium Phosphide Nanocrystals through Chemistry |
| 09:30 - 10:00<br>1.1-I2 | Zeger Hens *(Ghent University - BE)*<br>Properties of the Bright Exciton in InP Quantum Dots |
| 10:00 - 10:30<br>1.1-I3 | Sohee Jeong *(Sungkyunkwan University, Republic of Korea)*<br>III-V Colloidal Nanocrystals: Control over the Covalent Surfaces |
| 10:30 - 11:00 | **Coffee Break** |
| | **NCFun 1.2**<br>Chair: Zeger Hens<br>Room: Breakout 4 |
| 11:00 - 11:30<br>1.2-I1 | Nathan Neale *(Chemical and Nanoscale Sciences Center, National Renewable Energy Laboratory)*, Michael Carroll, Rens Limpens, Lance Wheeler, Gregory Pach<br>Surface Chemistry Effects on Quantum Confinement in Group IV Nanocrystals |
| 11:30 - 12:00<br>1.2-I2 | Heather Kulik *(Department of Chemical Engineering, Massachusetts Institute of Technology)*<br>Electronic Structure Origins of Surface-Dependent Growth in III–V Quantum Dots |
| 12:00 - 12:30<br>1.2-O1 | Alina Schimpf *(University of California San Diego)*, Alexander Rachkov<br>Synthesis of Monodisperse and Size-Tunable Colloidal Copper Phosphide Nanocrystals by Redox Disproportionation of Aminophosphine |
| 12:30 - 14:00 | **Lunch** |
| | **NCFun19 1.3**<br>Chair: Jonathan Owen<br>Room: Breakout 4 |
| 14:00 - 14:30<br>1.3-I2 | Fabien Delpech *(Laboratoire de Physique et Chimie des Nano-Objets (LPCNO), University of Toulouse - INSA - CNRS)*<br>Controlling the Surface of Metal Phosphide Quantum Dots: Reaction Chemistry, Growth and Optical Properties |
| 14:30 - 15:00<br>1.3-I1 | Arjan Houtepen *(Delft University of Technology (TU Delft), The Netherlands)*<br>Electrochemical Control over Semiconductor Nanomaterials: Doping and Surface Reduction |
| 15:00 - 15:15<br>1.3-O1 | Solrun Gudjonsdottir *(Delft University of Technology (TU Delft), The Netherlands)*, Ward van der Stam, Christel Koopman, Bob Kwakkenbos, Arjan Houtepen<br>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<br>1.3-O2 | Felix Thiel *(Institute of Physical Chemistry, University of Hamburg)*, Cristina Palencia Ramirez, Horst Weller<br>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**<br>Chair: Heather Kulik<br>Room: Breakout 4 |
| 16:00 - 16:15<br>1.4-O1 | Anumol s *(Solid State and Structural Chemistry Unit, Indian Institute of Science (IN))*, Biswajit Bhattacharyya, V. V. R. Kishore, Abhinav Kumar, Guru Pratheep Rajasekar, D. D. Sarma, Anshu Pandey<br>Spectroscopic Insights into the Electronic Structure of Copper Iron Sulfide Nanocrystals |
| 16:15 - 16:30<br>1.4-O2 | Cristina Palencia Ramírez *(Institute of Physical Chemistry. University of Hamburg)*, Robert Seher, Jan Krohn, Felix Thiel, Felix Lehmkühler, Horst Weller<br>Formation Dynamics of Nanocrystals: In-situ Observation of the Growth of CdSe NCs Via Magic-sized Clusters Intermediates. |
| 16:30 - 17:00<br>1.4-I1 | Oleksandr Voznyy *(University of Toronto)*<br>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**<br>Chair: Wolfgang Tress<br>Room: Plenum |
| 09:00 - 09:30<br>7-K1 | Xiaoyang Zhu *(Department of Chemistry, Columbia University, New York, New York 10027, United States)*<br>Ferroelectric Polarons in Lead Halide Perovskites |
| | **Plenary Session 8**<br>Chair: Ivan Infante<br>Room: Breakout 4 |
| 09:00 - 09:30<br>8-K1 | Dmitri Talapin *(Department of Chemistry, University of Chicago, Chicago, Illinois 60637, USA)*<br>Self-organization of Electrostatically and Sterically Stabilized Colloidal Nanocrystals: The Roles of Topology, Image Charges and Non-classical Nucleation |
| | **NCFun 2.1**<br>Chair: Ivan Infante<br>Room: Breakout 4 |
| 09:30 - 10:00<br>2.1-I1 | Raquel Galian *(Universidad de Valencia - ICMol (Institute of Molecular Science))*, Soranyel Gonzalez Carrero, Ignacio Rosa-Pardo, Julia Pérez-Prieto<br>Critical Role of Ligands on the Photoluminescence and Morphology of Colloidal Perovskite Nanocrystals |
| 10:00 - 10:30<br>2.1-O1 | Anna Loiudice *(Laboratory of Nanochemistry for Energy, EPFL, Switzerland)*, Seryio Saris, Raffaella Buonsanti<br>Metal Oxide Shell to Study Nanoscale Phenomena in Perovskite Quantum Dots |
| 10:30 - 11:00 | **Coffee Break** |
| | **NCFun19 2.2**<br>Chair: Maryna Bodnarchuk<br>Room: Breakout 4 |
| 11:00 - 11:15<br>2.2-O1 | Valeria Mantella *(Laboratory of Nanochemistry for Energy, EPFL, Switzerland)*, Silviya Ninova, Seryio Saris, Anna Loiudice, Ulrich Aschauer, Raffella Buonsanti<br>Synthesis and Size-dependent Optical Properties of Intermediate Band Gap Cu3VS4 Nanocrystals |
| 11:15 - 11:30<br>2.2-O2 | Evert Dhaene *(Ghent University - BE)*, Jonas Billet, Ellie Bennett, Isabel Van Driessche, Jonathan De Roo<br>The Trouble With 1-Octadecene: Polymerization During Nanocrystal Synthesis |
| 11:30 - 12:00<br>2.2-I1 | Iván Mora-Seró *(Universitat Jaume I, Institute of Advanced Materials (INAM) - Spain)*<br>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**<br>Chair: Jonathan Owen<br>Room: Breakout 4 |
| 14:00 - 14:30<br>2.3-I1 | Maryna Bodnarchuk *(EMPA - Swiss Federal Laboratories for Materials Science and Technology)*, Simon Boehme, Caterina Bernasconi, Maksym Kovalenko, Ivan Infante<br>Surface Chemistry of Colloidal Cesium Lead Halides Nanocrystals |
| 14:30 - 15:00<br>2.3-I2 | Daniel Gamelin *(University of Washington, Department of Chemistry, Seattle, WA 98195-1700)*<br>Solar Quantum Cutting and Spectral Downconversion using Ytterbium-Doped Metal-Halide Perovskites |
| 15:00 - 15:30<br>2.3-I3 | Liberato Manna *(Istituto Italiano di Tecnologia (IIT), Genova, Italy)*<br>Beyond Lead Halide Perovskite Nanocrystals |
| 15:30 - 16:00 | **Coffee Break** |
| | **CNFun 2.4**<br>Chair: Iván Mora-Seró<br>Room: Breakout 4 |
| 16:00 - 16:15<br>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<br>Cooling and Trapping. A Complete Map of Hot Carrier Processes in Hybrid Perovskite Nanocrystals |
| 16:15 - 16:30<br>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<br>Enhanced stability and optical properties of Gd3+ doped CsPbI3 nanocrystals |