

nanoGe Fall Meeting 2018 (FallMeeting18)

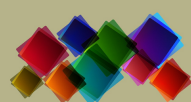
S6 Solution-based Two-dimensional Nanomaterials Sol2D

Torremolinos, Spain, 2018 October 24th - 26th

Conference Chairs: Christophe Delerue, Sandrine Ithurria and Christian Klinke

Conference Program

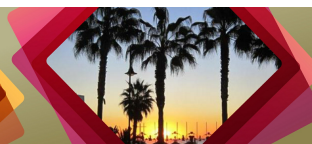
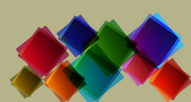
October 24th - Day 3 (Wednesday)	
	Sol2D S6.1 Chair: Christian Klinke
14:30 - 15:00	<u>David Norris</u> (<i>Optical Materials Engineering Laboratory, ETH Zürich, Swiss</i>)
S6.1-I1	The Growth Mechanism of Semiconductor Nanoplatelets
15:00 - 15:30	<u>Efrat Lifshitz</u> (<i>aculty of Chemistry, Solid State Institute, Russell Berrie Nanotechnology Institute and Grand Technion Energy Program, Technion – Israel Institute of Technology, Haifa, 32000, Israel</i>)
S6.1-I2	Magneto-Optical Properties of Two-Dimensional Semiconductors: Transition Metal Phosphorous Trichalcogenides, Indium Chalcogenides and Magnetically Doped Colloidal Nanoplatelets
15:30 - 16:00	<u>Alexander Achtstein</u> (<i>Technical University of Berlin</i>), Riccardo Scott, Jan Heckmann, Anatol Prudnikau, Artsiom Antanovich, Nina Owschimikow, Nicolai Grosse, Mikhail Artemyev, Ulrike Woggon, Juan Climente
S6.1-I3	Tuning the Photonic Properties of Colloidal Quantum Wells
16:00 - 16:30	<u>Hilmi Volkan Demir</u> (<i>Nanyang Technological University (NTU), Singapore</i>)
S6.1-I4	Colloidal Photonics of Atomically Flat 2D Nanocrystals
16:30 - 17:00	<u>Liangfeng Sun</u> (<i>Department of Physics and Astronomy, Bowling Green State University, Bowling Green, Ohio 43403, United States</i>), Zhoufeng Jiang, Antara Debnath Antu, Shashini Premathilka, Yiteng Tang, Ghadendra Bhandari, Kamal Subedi, Matthew Leopold, Nick Reilly, Simeen Khan, Douglas Dimick, Cody Stombaugh, Angelic Mandell, Yufan He, Peter Lu, Jianjun Hu, Andrey Voevodin, Ajit Roy, Paul Roland, Randy Ellingson, Joey Leffler, Alexey Zayak
S6.1-I5	Synthesis and Optical Spectroscopy of Colloidal PbS Nanosheets
October 25th - Day 4 (Thursday)	
	Plenary Session 5 Chair: Daniel Vanmaekelbergh
09:00 - 09:30	<u>Maksym Kovalenko</u> (<i>Institute of Inorganic Chemistry, Department of Chemistry and Applied Bioscience, ETH Zurich, 8093 Zurich, Switzerland</i>)
5-K1	Colloidal Nanocrystals of APbX ₃ Perovskites [A=Cs ⁺ , CH(NH ₂) ₂ ⁺ , X=Cl ⁻ , Br ⁻ , I ⁻]: Surface Chemistry, Self-Assembly and Potential Applications
	Sol2D S6.2 Chair: Sandrine Ithurria
09:30 - 10:00	<u>Alf Mews</u> (<i>Institute of Physical Chemistry, University of Hamburg</i>), Monika Kobylinski, Charlotte Ruhmlieb, Vi Pham, Jan Siebels, Andreas Kolditz
S6.2-O1	Synthesis and Electrical Properties of Photoactive Two Dimensional SnS Nanosheets
10:00 - 10:30	<u>William Buhro</u> (<i>Department of Chemistry, Washington University, St. Louis, MO 63119, USA</i>)
S6.2-I1	Facile Surface Exchanges in 2D CdSe Nanocrystals
10:30 - 11:00	Coffee Break
	Sol2D S6.3 Chair: Christophe Delerue



11:00 - 11:30	<u>Gabriel Bester</u> (<i>Universität Hamburg</i>)
S6.3-I1	Atomistic Theory of Excitonic Effects in 2D Materials
11:30 - 12:00	<u>Shalini Singh</u> (<i>Physics and Chemistry of Nanostructures, Ghent University, 9000 Ghent, Belgium</i>), Renu Tomar,
S6.3-O1	Stephanie ten Brinck, Jonathan De Roo, Pieter Geiregat, José C. Martins, Ivan Infante, Zeger Hens
	The Surface Chemistry of Colloidal II-VI Two-Dimensional Nanoplatelets
12:00 - 12:30	<u>Anna Rodina</u> (<i>Ioffe Institute</i>)
S6.3-I2	Spin-Dependent Optical Properties of CdSe Nanoplatelets
12:30 - 14:30	Lunch
	Sol2D S6.4 Chair: Christian Klinke
14:30 - 15:00	<u>Daniel Vanmaekelbergh</u> (<i>Universiteit Utrecht</i>), Joep Peters, Maryam Alimoradi Jazi, Sophia Buhbut-Sinai, Sara
S6.4-I2	Bals, Giuseppe Soligno
	2-D Silicene Honeycomb Superlattices from PbSe Nanocrystals by Nanocrystal Assembly at an Interface Followed by Oriented Attachment
15:00 - 15:30	<u>Richard Schaller</u> (<i>Argonne National Laboratory, Lemont, Illinois, United States</i>)
S6.4-I3	Colloidal Quantum Wells for Energy Manipulations on Fast Timescales
15:30 - 15:45	<u>Lars Klepzig</u> (<i>Institute of Physical Chemistry and Electrochemistry, Leibniz Universität Hannover, Callinstr. 3A,</i>
S6.4-O3	<i>30167 Hannover, Germany</i>), Jan Poppe, Eugen Klein, Christian Klinke, Armin Feldhoff, Nadja C. Bigall
	Thermoelectric Properties of Aerogels of PbS Nanoplatelets
15:45 - 16:00	<u>Anja Schlosser</u> (<i>Institute of Physical Chemistry and Electrochemistry, Leibniz-Universität Hannover, Callinstr. 3A,</i>
S6.4-O2	<i>D-30167 Hannover</i>), Jan Frederick Miethe, Franziska Lübke, Jan Gerrit Eckert, Lea Celiné Meyer, Nadja- Carola Bigall
	3D Assemblies of CdSe Nanoplatelets for Application in Photoelectrochemical Sensing
16:00 - 16:30	<u>Aurelio Rossinelli</u> (<i>Optical Materials Engineering Laboratory, ETH Zurich, 8092 Zurich, Switzerland</i>), Andreas
S6.4-O1	Riedinger, Philippe Knüsel, Patricia Marqués Gallego, Felipe Antolinez, David Norris
	Color-Tunable CdSe-Based Core/Shell Nanoplatelets
16:30 - 17:00	<u>Emilio Perez</u> (<i>IMDEA Nanociencia</i>)
S6.4-I1	From Liquid-Phase Exfoliated 2D Materials to Functioning Devices
17:30 - 19:00	Poster session

October 26th - Day 5 (Friday)

	Plenary session 6 Chair: Sascha Sadewasser
09:00 - 09:30	<u>Marina Leite</u> (<i>University of Maryland</i>)
6-K1	Probing Solar Cells at the Nanoscale through Real-Time Functional Imaging
	Sol2D S6.5 Chair: Sandrine Ithurria
09:00 - 09:30	<u>Liberato Manna</u> (<i>Department of Nanochemistry, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova</i>
S6.5-I1	<i>(Italy)</i>)
	Halide Perovskites Nanocrystals: Synthesis, Transformations and their Application in Devices
09:30 - 10:00	<u>Laurens Siebbeles</u> (<i>Opto-electronic materials section, Department of Chemical Engineering, Faculty of Applied</i>
S6.5-I2	<i>Sciences, Delft University of Technology</i>)
	Ultrafast Dynamics of Charge Carriers and Excitons in 2D Metal Chalcogenide Materials
10:00 - 10:15	<u>Bas Salzmann</u> (<i>Universiteit Utrecht</i>), Christiaan Post, Daniel Vanmaekelbergh
S6.5-O1	CdSe Nanorings: Synthesis and Opto-Electronic Properties
10:15 - 10:30	<u>Joep Peters</u> (<i>Universiteit Utrecht</i>), Thomas Altantzis, Sara Bals, Daniel Vanmaekelbergh
S6.5-O2	Mono- and Multilayer Silicene-Type Honeycomb Lattices by Oriented Attachment of PbSe Nanocrystals: Synthesis, Structural Characterization, and Analysis of the Disorder.



Sol2D S6.6

Chair: Christophe Delerue

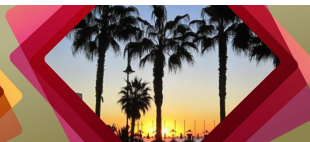
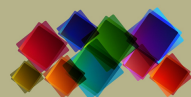
- 11:00 - 11:30 **S6.6-I1** Benoît Mahler (*ILM - Institut Lumière Matière, CNRS*)
Colloidal Synthesis of WS₂ Nanosheets: Chemical Control of Morphology and Crystal Structure.
- 11:30 - 11:45 **S6.6-O1** Pengshang Zhou (*Physics and Chemistry of Nanostructures, Ghent University, 9000 Ghent, Belgium*), Shalini Singh, Pieter Schiettecatte, Zeger Hens
Synthesis of Colloidal Tungsten Diselenide (WSe₂) Nanocrystals by Hot Injection Method
- 11:45 - 12:00 **S6.6-O2** Bruce Parkinson (*Department of Chemistry, University of Wyoming, Laramie, WY, USA*), John Hoberg
New 2D Nanoporous Covalent Organic Framework Materials with Functionalized
- 12:00 - 12:30 **S6.6-O3** Prabhuraj Balakrishnan (*Lancaster University, UK*), Matthew J Fong, Christopher S woodhead, Ramon Bernardo Gavito, Robert J Young
Efficient Light Emission from MoS₂ Flakes by in-solution Superacid Treatment

12:30 - 14:30 **Lunch**

Sol2D S6.7

Chair: Sandrine Ithurria

- 14:30 - 15:00 **S6.7-O1** Marion Dufour (*Laboratoire de Physique et d'Etude des Matériaux, PSL Research University, CNRS UMR 8213, UPMC Sorbonne Université, ESPCI Paris, 10 rue Vauquelin, 75005 Paris, France*), Violette Steinmetz, Eva Izquierdo, Thomas Pons, Nicolas Lequeux, Emmanuel Lhuillier, Laurent Legrand, Maria Chamarro, Thierry Barisien, Sandrine Ithurria
Engineering Bicolor Emission in 2D Core/Crown CdSe/CdSe_{1-x}Tex Nanoplatelet Heterostructures Using Band-Offset Tuning
- 15:00 - 15:30 **S6.7-O2** Jannika Lauth (*Carl von Ossietzky University Oldenburg*), Michele Failla, Francisco Manteiga Vázquez, Qianli Yu, Eugen Klein, Ryan Crisp, Christian Klinke, Sachin Kinge, Arjan Houtepen, Laurens Siebbeles
Colloidal Two-Dimensional PbS Nanosheets and Ultrathin PbS Nanoplatelets – High Mobility vs. Photoluminescence Properties
- 15:30 - 16:00 **S6.7-I1** Celso de Mello Donega (*Universiteit Utrecht*), Anne Berends, Ward van der Stam
Ultrathin Colloidal Binary and Ternary Copper Chalcogenide Nanosheets
- 16:00 - 16:15 **S6.7-O3** Alejandro Molina-Sánchez (*Institute of Materials Science of the University of Valencia (ICMUV)*)
Excitonic States in Semiconducting Two-Dimensional Perovskites
- 16:15 - 16:30 **S6.7-O4** Aniket S. Mule (*Optical Materials Engineering Laboratory, ETH Zurich, 8092 Zurich, Switzerland*), Simon F. Solari, Aurelio A. Rossinelli, Philippe N. Knüsel, Sergio Mazzotti, Marianne Aellen, David J. Norris
Synthesis and Isolation of Discrete-Growing CdSe Nanocrystals



Poster Contribution

267	<u>Fu Li</u> (<i>Institute of Physical Chemistry, University of Hamburg, 20146 Hamburg, Germany</i>), Mohammad Mehdi Ramin Moayed, Christian Klinke Shape and Size Control of the Synthesis of 2D Tin Sulfide (SnS) Nanosheets and Electronic Application
304	Kelly Brouwer, <u>Serena Busatto</u> (<i>Condensed Matter and Interfaces, Debye Institute for nanomaterials science, Utrecht University</i>), Anne Berends, Celso de Mello Donegá Formation of Ultrathin Colloidal Copper Indium Sulfide Nanosheets by Cation Exchange in Cu ₂ -xS and In ₂ S ₃ Nanosheets
305	Sotirios Christodoulou, Juan I. Climente, Josep Planelles, Rosaria Brescia, Mirko Prato, Beatriz Martín-García, <u>Ali Hossain Khan</u> (<i>Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy</i>), Iwan Moreels Widening the Thickness Range of Colloidal CdSe Nanoplatelets with CdCl ₂
317	<u>Toshihiro Nakamura</u> (<i>Hosei University</i>), Jun Otsubo, Nobuyoshi Koshida High-yield Synthesis of Luminescent Colloidal Silicon Nanocrystals from Porous Silicon
332	<u>Johanna van der Bok</u> (<i>Condensed Matter and Interfaces, Debye Institute for nanomaterials science, Utrecht University</i>), Bas Salzmann, Daphne Dekker, Matt Peerlings, Andries Meijerink Spectral Line