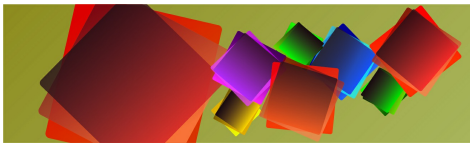

nanoGe Fall Meeting
Online Conference
20th-23rd October, 2020

nanoGe

Online nanoGe Fall Meeting 20 (OnlineNFM20)

#Sol2D20. Solution-based Two-dimensional Nanomaterials

2020 October 22nd - 23rd
Conference Chairs: Christian Klinke, Sandrine Ithurria and Celso de Mello Donega

Conference Program

October 22nd - Day 3 (Thursday)	
08:30 - 08:35	**Sol2D Openning nanoGe**
08:35 - 08:45	**Sol2D Session Introduction 1.1 - Christian Klinke**
	Sol2D 1.1 Chair: Christian Klinke
08:45 - 09:05 1.1-I1	David Norris *(Optical Materials Engineering Laboratory, ETH Zürich, Switzerland)* Monodisperse Semiconductor Nanocrystals: Is It Possible?
09:05 - 09:25 1.1-I2	Laurens Siebbeles *(Delft University of Technology, The Netherlands)*, Michele Failla, Fransesco Garcia Florez, Bas Salzmann, Daniel Vanmaekelbergh, Henk Stoof Observing Quantum-Confinement Effects on the In-Plane Translational Motion of Excitons in CdSe Nanoplatelets
09:25 - 09:45 1.1-I3	Emmanuel Lhuillier *(Sorbonne Université, CNRS, Institut des NanoSciences de Paris, INSP, France)* HgTe nanoplatelets, the most confined nanocrystals
09:45 - 10:05	Discussion
	Sol2D 1.2 Chair: Christian Klinke
10:05 - 10:15 1.2-T1	Adam K. Budniak *(Schulich Faculty of Chemistry, Solid State Institute, Russell Berrie Nanotechnology Institute and the Helen Diller Quantum Information Center; Technion, Haifa, Israel)*, Niall A. Killilea, Szymon J. Zelewski, Mykhailo Sytnyk, Yaron Kauffmann, Yaron Amouyal, Robert Kudrawiec, Wolfgang Heiss, Efrat Lifshitz Exfoliated CrPS4 with Promising Photoconductivity
10:15 - 10:25 1.2-T2	Tyler Dunbar *(Cornell University, Smith School of Chemical and Biomolecular Engineering)*, Daniel Balazs, Detlef Smilgies, Tobias Hanrath Dynamics of Nanocrystal Self-assembly at Fluid Interfaces: From Droplet to Superlattice
10:25 - 10:35 1.2-T3	Bas Salzmann *(Utrecht University, Condensed Matter and Interfaces, Debye Institute for nanomaterials science)*, Jara Vliem, Chen Li, Sara Bals, Daniel Vanmaekelbergh Thermochemical conversion of CdSe nanoplatelets into quantum rings; synthesis and optical spectroscopy
10:35 - 10:45 1.2-T4	Michael Seitz *(Condensed Matter Physics Center (IFIMAC), Autonomous University of Madrid)*, Alvaro Magdaleno, Nerea Alcázar-Cano, Marc Melendez, Tim Lubbers, Sanne Walraven, Sahar Pakdel, Elsa Prada, Rafael Delgado-Buscalioni, Ferry Prins Exciton diffusion in two-dimensional metal-halide perovskites
10:35 - 10:45 1.2-T5	Watcharaphol Paritmongkol *(Massachusetts Institute Of Technology (MIT), Department of Chemistry)*, Woo Seok Lee, Tomoaki Sakurada, Wenbi Shcherbakov-Wu, William Tisdale Synthesis of Blue-Emitting Silver Phenylselenolate in Thin Film and Crystal Forms.
10:45 - 11:15	Discussion
11:15 - 12:00	**Sol2D Break**
12:00 - 12:05	**Sol2D Introduction nanoGe**
	Sol2D 1.3 Chair: Celso de Mello Donega

12:05 - 12:15 1.3-T1	Abderrezak torche *(University of Hamburg, Institute of Physical Chemistry)*, Gabriel Bester Biexcitons in transition metal dichalcogenides monolayers from first principles
12:15 - 12:25 1.3-T2	Giuseppina Polino *(CHOSE- Centre for Hybrid and Organic Solar Energy, Department of Electronics Engineering, University of Rome "Tor Vergata", Rome)*, Alessandro Scaramella, Valerio Manca, Elena Palmieri, Emanuela Tamburri, Silvia Orlanducci, Francesca Brunetti Nanodiamond-based energy storage devices on flexible paper substrates for smart electronics applications
12:25 - 12:35 1.3-T3	Lesyuk Rostyslav *(University of Rostock, Institute of Physics, Germany)*, Klinke Christian 2D dimensionality and faceting in colloidal nanomaterials: lead, tin and copper chalcogenides for enhanced tunability
12:35 - 12:45 1.3-T4	Nicolas Moghaddam *(Laboratoire de Physique et d'Etude des matériaux (LPEM), ESPCI-Paris, PSL, CNRS, Sorbonne Université)*, Corentin Dabard, Marion Dufour, Hong Po, Xiangzhen Xu, Emmanuel Lhuillier, Sandrine Ithurria Intraparticule rearrangement to reach thick CdE (E: S, Se and Te) nanoplatelets and homostructures with intraparticles type I band alignment
12:45 - 13:15	Discussion
13:15 - 13:20	**Sol2D Break**
13:20 - 13:30	**Sol2D Session Introduction 1.4 - Celso de Mello Donega**
	Sol2D 1.4 Chair: Celso de Mello Donega
13:30 - 13:50 1.4-I1	Tianquan Lian *(Department of Chemistry, Emory University, 1515 Dickey Drive NE, Atlanta, Georgia 30322, USA)* Auger Recombination in CdSe and CsPbBr3 2D Colloidal Nanoplatelets
13:50 - 14:10 1.4-I2	Efrat Lifshitz *(Schulich Faculty of Chemistry, Solid State Institute, Russell Berrie Nanotechnology Institute, Helen Diller Quantum Center, Grant Technion Energy Program, Technion–Israel Institute of Technology, Israel)*, Adam Budniak, Esti Ritov, Morin Mor, Faris Horani, Yahel Barak, Ellenor Geraffy Magneto-optical properties of van der Waals and colloidal two-dimensional semiconductors
14:10 - 14:30	Discussion
15:00 - 16:30	**ePoster Session**

October 23rd - Day 4 (Friday)

08:30 - 08:35	**Sol2D Introduction nanoGe**
	Sol2D 2.1 Chair: Sandrine Ithurria
08:35 - 08:45 2.1-T1	Yusuf Kelestemur *(ETH Zürich, Department of Chemistry and Applied Biosciences)*, Yevhen Shynkarenko, Marco Anni, Sergii Yakunin, Maria Luisa De Giorgi, Maksym V. Kovalenko CdSe colloidal quantum wells with a graded shell for optoelectronic applications
08:45 - 08:55 2.1-T2	Stefano Toso *(Nanochemistry Department, Italian Institute of Technology, Italy)*, Dmitry Baranov, Davide Altamura, Francesco Scattarella, Jakob Dahl, Xingzhi Wang, Sergio Marras, Paul Alivisatos, Andrej Singer, Cinzia Giannini, Liberato Manna Accurate Structural Refinement of Nanocrystal Superlattices: Look Beyond Your Pattern
08:55 - 09:05 2.1-T3	Ali Hossain Khan *(Department of Chemistry, Ghent University, Belgium)*, Guillaume H. V. Bertrand, Ayelet Teitelboim, M. Chandra Sekhar, Anatolii Polovitsyn, Rosaria Brescia, Josep Planelles, Juan I. Climente, Dan Oron, Iwan Moreels Synthesis and Optoelectronic Properties of CdSe/CdS/CdTe Hetero-structured 2D Colloidal Nanocrystals
09:05 - 09:15 2.1-T4	Juan Ignacio Climente *(Universitat Jaume I, Departament de Química Física i Analítica, Spain)*, Jordi Llusar Nature and control of shakeup processes in colloidal nanoplatelets
09:15 - 09:45	Discussion
09:45 - 09:50	**Sol2D Short Break**
09:50 - 10:00	**Sol2D Session Introduction 2.2 - Sandrine Ithurria**
	Sol2D 2.2 Chair: Sandrine Ithurria
10:00 - 10:20 2.2-I1	P. Tim Prins, Zeger Hens, Daniel Vanmaekelbergh, Christophe Delerue *(IEMN, UMR-CNRS 8520, Villeneuve d'Ascq, France)* Quantized optical absorption in quasi-2D semiconductors: Theory, comparison with experiments and open questions
10:20 - 10:40 2.2-I2	Thomas Heine *(Technical University (TU) Dresden)* Two routes to computationally design new 2D photoelectrocatalysts
10:40 - 11:00 2.2-I3	Alexander Achtstein *(Institute of Optics and Atomic Physics, Technische Universität Berlin, Germany)*, Sabrine Ayari, Michael Quick, Nina Owschimikow, Sihem Jaziri, Ulrike Woggon Tuning Trion and Exciton Properties, Phonon Coupling and Exciton Diffusion in CdSe Quantum Wells of Finite Size
11:00 - 11:20	Discussion
11:20 - 12:30	**Sol2D Break**
12:30 - 12:35	**Sol2D Introduction nanoGe**
12:35 - 12:45	**Sol2D Session Introduction 2.3 - Christian Klinke**
	Sol2D 2.3 Chair: Christian Klinke
12:45 - 13:05 2.3-I1	Ali H. Khan, Guillaume H.V. Bertrand, Ayelet Teitelboim, Chandra Sekhar M., Anatolii Polovitsyn, Rosaria Brescia, Josep Planelles, Juan I. Climente, Dan Oron, Iwan Moreels *(Department of Chemistry, Ghent University, Belgium)* Multiphoton Fluorescence Upconversion in Core/Barrier/Crown 2D Colloidal Nanocrystals
13:05 - 13:25 2.3-I2	Jannika Lauth *(Institute of Physical Chemistry and Electrochemistry, Leibniz Universität Hannover, DE)* From Probing Coupled States in ultrathin PbS Nanoplatelets to Controlling Metallic and Semiconducting Properties in WS2 Nanosheets
13:25 - 13:45 2.3-I3	Manfred Bayer *(TU Dortmund University)* TBC

13:45 - 14:05	Discussion
14:05 - 14:10	**Sol2D Closing**

Poster Contribution

224	Stefano Toso *(Department of Nanochemistry, Istituto Italiano di Tecnologia, Italy)*, Dmitry Baranov, Davide Altamura, Francesco Scattarella, Jakob Dahl, Xingzhi Wang, Sergio Marras, Paul Alivisatos, Andrej Singer, Cinzia Giannini, Liberato Manna Accurate Structural Refinement of Nanocrystal Superlattices: Look Beyond Your Pattern
237	Erik Beck *(DESY - Deutsches Elektronen-Synchrotron, Hamburg)*, Agnes Weimer, Artur Feld, Dieter Lott, Vedran Vonk, Thomas Keller, Tobias Vossmeyer, Andreas Stierle Solvent-dependent control of 2D magnetite nanoparticle superlattice structure
255	Aleksandr Golovatenko *(Ioffe Institute, Saint Petersburg, Russia)*, Anna Rodina, Elena Shornikova, Dmitri Yakovlev Nonradiative recombination of dark excitons in CdSe nanoplatelets
261	Elena Shornikova *(Experimentelle Physik 2, Technische Universität Dortmund, Dortmund, Germany)*, Dmitri Yakovlev, Danil Tolmachev, Vitalii Ivanov, Ina Kalitukha, Victor Sapega, Dennis Kudlacik, Sushant Shendre, Savas Delikanli, Hilmi Volkan Demir, Manfred Bayer Excitons interacting with magnetic ions in CdSe/CdMnS colloidal nanoplatelets
262	Lars F. Klepzig *(Institute of Physical Chemistry and Electrochemistry, Leibniz Universität Hannover, DE)*, Leon Biesterfeld, Michel Romain, Anja Schlosser, Nadja C. Bigall, Jannika Lauth 2D PbSe Nanoplatelets with Tunable Emission and High Quantum Yield
271	Marie Krecmarova *(Instituto de Ciencia de Materiales, Universidad de Valencia (ICMUV), c/ Catedrático José Beltrán, 246980 Paterna (Valencia), Spain)*, Rodolfo Canet-Albiach, Hamid Pashaei-Adl, Setatira Gorji, Guillermo Muñoz-Matutano, Jesús Rodríguez-Romero, Iván Mora-Seró, Isaac Suárez, Vladimir Chirvony, Juan P. Martínez-Pastor, Juan F. Sánchez-Royo Temperature dependent emission properties of mechanically exfoliated layered lead halide perovskites