

nanoGe Fall Meeting 2018 (FallMeeting18)

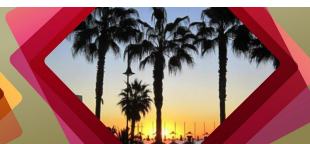
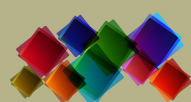
S1 Solar Fuel 18

Torremolinos, Spain, 2018 October 22nd - 24th

Conference Chairs: Shannon Boettcher and Kevin Sivula

Conference Program

October 22nd - Day 1 (Monday)	
	Plenary session 1 Chair: Mischa Bonn Room: Mediterraneo ABC
09:00 - 09:30 1-K1	<u>Victor Klimov</u> (<i>Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA</i>) Colloidal Quantum Dot Lasing: Historical Perspective and Recent Progress
	Plenary Session 2 Chair: Kevin Sivula Room: Torremolinos AB
09:00 - 09:30 2-K1	<u>Yun Jeong Hwang</u> (<i>Korea Institute of Science and Technology (KIST)</i>), Byoun Koun Min, Hyeong-Suk Oh Electrochemical Conversion of CO ₂ toward Valuable Chemicals for Solar-to-Chemical Conversion Application
	SolFuel S1.1 Chair: Kevin Sivula Room: Mediterraneo ABC
09:30 - 10:00 S1.1-I1	<u>Alexis Grimaud</u> (<i>Chimie du Solide et de l'Energie, FRE 3677, Collège de France, 75231 Paris Cedex 05, France</i>) Oxygen Evolution Reaction on the Surface of Transition Metal Oxides – Heterogeneous or Homogeneous catalysis?
10:00 - 10:15 S1.1-O1	Shasha Tao, Stephan Wagner, Hannes Radinger, Sven Tengeler, Wolfram Jaegermann, <u>Bernhard Kaiser</u> (<i>Institute of Material Science, Technische Universität Darmstadt, 64287 Darmstadt, Germany</i>) Nickeloxide Nanoparticles and Thin Films as Catalysts for (Photo)Electrochemical Water Splitting: A Surface Science Study
10:15 - 10:30 S1.1-O2	<u>Laia Francas</u> (<i>Imperial College London, Department of Chemistry, South Kensington Campus, London, SW7 2AZ</i>), Sacha Corby, Shababa Selim, Dongho Lee, Mesa Camilo, Robert Godin, Kyoung Shin-Choi, James Durrant Spectroelectrochemical Study of the Catalytic Species on the Ni(Fe)OOH and FeOOH Electrocatalysts
10:30 - 11:00	Coffee Break
	SolFuel S1.2 Chair: Kevin Sivula Room: Mediterraneo ABC
11:00 - 11:30 S1.2-O1	<u>Mariam Barawi Moran</u> (<i>Institute IMDEA Energy</i>), Alberto González, Elena Alfonso, Alba García, Carmen López-Calixto, Marta Liras, Víctor. A de la Peña O' Shea Design and Development of a Multilayer Photoelectrode Composed of TiO ₂ Nanocrystals and a New Nanostructured Conjugate Porous Polymer with Advanced Photoelectrochemical Properties
11:30 - 11:45 S1.2-O2	<u>Sacha Corby</u> (<i>Department of Chemistry, Imperial College London, South Kensington, London, SW7 2AZ, UK</i>), Laia Francas, Shababa Selim, Michael Sachs, Andreas Kafizas, James Durrant Charge Carrier Dynamics in Nanostructured Tungsten Trioxide for Solar Driven Water Oxidation



11:45 - 12:00 S1.2-O3	<u>Annemarie Huijser</u> (<i>MESA+ Institute for Nanotechnology, University of Twente</i>), Qing Pan, David van Duinen, Mads G. Laursen, Amal El Nahas, Pavel Chabera, Qingyu Kong, Xiaoyi Zhang, Kristoffer Haldrup, Wesley R. Browne, Grigory Smolentsev, Jens Uhlig Shedding Light on the Nature of Excited States in a Hydrogen Generating Supramolecular RuPt Catalyst by Ultrafast X-Ray Spectroscopy
12:00 - 12:30 S1.2-O4	<u>Ernest Pastor</u> (<i>Imperial College London, Department of Chemistry, South Kensington Campus, London, SW7 2AZ</i>), Artem Bakulin Ultrafast Electron Localisation and Delocalisation in Photoelectrochemical Cells. Towards Control of Excited-State Transport
12:30 - 14:30	Lunch
	SolFuel S1.3 Chair: Nestor Guijarro Carratala Room: Mediterraneo ABC
14:30 - 15:00 S1.3-I1	<u>Vincent ARTERO</u> (<i>Universite Grenoble Alpes</i>) Molecular-Based H ₂ -Evolving Photocathodes
15:00 - 15:30 S1.3-O1	<u>Menny Shalom</u> (<i>Department of Chemistry, Ben Gurion University of the Negev, Beer Sheva, Israel</i>) Graphitic Carbon Nitride Layers as Light-Harvesting Semiconductors for Photoelectrochemical Cells
15:30 - 15:45 S1.3-O2	<u>Michael Sachs</u> (<i>Department of Chemistry, Imperial College London, South Kensington, London, SW7 2AZ, UK</i>), Reiner Sebastian Sprick, Drew Pearce, Sam J. Hillman, Adriano Monti, Anne A. Y. Guilbert, Nick J. Brownbill, Stoichko Dimitrov, Frédéric Blanc, Martijn A. Zwiijnenburg, Jenny Nelson, James R. Durrant, Andrew I. Cooper Understanding Hydrogen Evolution Activity of Linear Organic Photocatalysts
15:45 - 16:15 S1.3-O3	<u>Ferdi Karadas</u> (<i>Bilkent University, Ankara, Turkey</i>), T. Gamze Ulusoy Ghobadi An Earth Abundant Dye-Sensitized Photoanode for Water Oxidation
16:15 - 16:30 S1.3-O4	<u>Christos Trompoukis</u> (<i>Ghent University, Photonics Research Group, iGent, Technologiepark Zwijnaarde 15, 9000 Ghent, Belgium</i>), Jan-Willem Schüttauf, Tom Bosserez, Ji-Yu Feng, Aimi Abass, Jan Rongé, Roel Baets, Johan Martens Porosity as an Ionic Shortcut: Porous Multi-Junction Thin-Film Silicon Solar Cells for Scalable Solar Water Splitting
16:30 - 16:45 S1.3-O5	Alba García Sanchez, Patricia Reñones, Carmen García, Elena Alfonos, Laura Collado, Raul Perez Ruiz, Mariam Barawi, Igancio Villar, Marta Liras, Fernando Fresno, <u>Víctor Antonio de la Peña O'Shea</u> (<i>1 Photoactivated Proceses Unit IMDEA Energy Institute</i>) Solar Fuels Productions by Artificial Photosynthesis: From Inorganic Semiconductors to Hybrid Multifunctional Materials

October 23rd - Day 2 (Tuesday)

	SolFuel S1.4 Chair: Vincent Artero Room: Mediterraneo ABC
09:00 - 09:30 S1.4-I1	<u>Alexander Cowan</u> (<i>Department of Chemistry, University of Liverpool</i>) Sum-Frequency and Surface Sensitive Spectroscopy of Electrode and Photoelectrode Surfaces
09:30 - 10:00 S1.4-O1	<u>Nestor Guijarro</u> (<i>Laboratory for Molecular Engineering of Optoelectronic Nanomaterials, Ecole Polytechnique Fédérale de Lausanne, Station 6, CH-1015, Switzerland</i>), Yongpeng Liu, Florian Le Formal, Liang Yao, Kevin Sivula Operando Potential-Sensing at the Semiconductor-Liquid Junctions: Tracking the Surface Energetics and Interfacial Kinetics during Photoelectrosynthetic Reactions
10:00 - 10:15 S1.4-O2	<u>David E. Starr</u> (<i>Institute for Solar Fuels, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany</i>), Marco Favaro, Fatwa F. Abdi, Marlene Lamers, Michael Kanis, Hendrik Bluhm, Ethan Crumlin, Roel van de Krol Identification and Light-Induced Suppression of Surface States on BiVO ₄ Photanodes

10:15 - 10:30 **Farabi Bozheyev** (*National Laboratory Astana, 53 Kabanbay Batyr St., 010000 Astana, Kazakhstan*), Fanxing Xi, S1.4-O3
 Dennis Friedrich, Marat Kaikanov, Alexander Tikhonov, Sebastian Fiechter, Klaus Ellmer
 Passivation of the Surface of Transition Metal Dichalcogenides with Catalysts for Solar Hydrogen Evolution

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

SolFuel S1.5

Chair: Alexis Grimaud
 Room: Mediterraneo ABC

11:00 - 11:30 **Erwin Reisner** (*University of Cambridge, UK*)

S1.5-I1 Solar-Driven Fuel Synthesis with Hybrid Semiconductor Systems

11:30 - 11:45 **Martina Sandroni, Jérôme Fortage, Marie-Noëlle Collomb, Peter Reiss, Dmitry Aldakov** (*UMR5819 SyMMES CEA-CNRS-UGA CEA-Grenoble INAC/SyMMES 17 rue des Martyrs 38054 GRENOBLE CEDEX 9 FRANCE*)
 S1.5-O1 Efficient Hydrogen Photoproduction in Water with Hybrid Systems Composed of Quantum Dots and Molecular Catalysts

11:45 - 12:00 **Elena Alfonso González** (*IMDEA Energy Institute*), Mengjiao Wang, Mariam Barawi, Luca De Trizio, Liberato S1.5-O2
 Manna, Víctor A. de la Peña O'Shea
 Characterization of Cu₂-xTe Nanocrystals for Photoelectrochemical Cells

12:00 - 12:30 **Sixto Gimenez Julia** (*Institute of Advanced Materials (INAM), Universitat Jaume I, 12071 Castelló, Spain*),
 S1.5-O3 Drialys Cardenas Moscoso, Andrés F. Gualdrón-Reyes, Ana Beatriz Ferreira-Vitoret, Miguel García-Tecedor, Seon Joon Yoon, Mauricio Solis de la Fuente, Iván Mora-Seró
 Photocatalytic and Photoelectrochemical Degradation of Organic Pollutants with All-Inorganic Metal Halide Perovskite Quantum Dots

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

SolFuel S1.6

Chair: Alexander Cowan
 Room: Mediterraneo ABC

14:30 - 15:00 **Yogesh Surendranath** (*Massachusetts Institute of Technology, Cambridge, MA 0213*)
 S1.6-I1 Bridging Molecular and Heterogeneous Electrocatalysis For Solar Fuels Production

15:00 - 15:30 **Antonio Guerrero** (*Institute of Advanced Materials (INAM), Universitat Jaume I*)
 S1.6-O1 Synthesis of Dimensionally Stable and Porous Electrodes for Photoelectrochemical Applications

15:30 - 15:45 **Silvan Suter** (*Laboratory of Renewable Energy Science and Engineering, École Polytechnique Fédérale de Lausanne, Switzerland*), Sophia Haussener
 S1.6-O3 Linking Morphology and Multi-Physical Transport in Porous Copper Electrodes

15:45 - 16:15 **Nina M. Carretero** (*Catalonia Institute for Energy Research, IREC. Jardins de les Dones de Negre 1, 08930 Sant Adrià de Besòs (Barcelona), Spain.*), Maria D. Hernández-Alonso, Joan Ramon Morante, Teresa Andreu
 S1.6-O2 Bi-Metallic Sn-Pd Catalysts for CO₂ Electroreduction to Formic Acid: Modulation of Overpotential and Stability

16:15 - 16:30 **magnan helene** (*Service de Physique de l'Etat Condensé CEA, CNRS, Université Paris Saclay CEA Saclay, l'orme des merisiers bat 772, 91191 Gif sur Yvette Cedex FRANCE*), stanescu dana, brehin julien, barbier antoine
 S1.6-O4 Unraveling the Role of Ferroelectricity in Solar Water Splitting Improvement

16:30 - 16:45 **Félix Urbain** (*Institut de Recerca en Energia de Catalunya (IREC), Barcelona, Spain*), Nina M. Carretero, Teresa S1.6-O5
 Andreu, María Dolores Hernández Alonso, Joan Ramón Morante
 Scalable Production of Syngas from Solar CO₂ Recycling

17:30 - 19:00 **Poster Session**

October 24th - Day 3 (Wednesday)

Plenary session 3

Chair: Shannon Boettcher
 Room: Mediterraneo ABC

09:00 - 09:30 **Francesca Maria Toma** (*Chemical Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, California 94720, United States*)
 3-K1
 A New Portrait of Functional Complex Interfaces for Solar Fuel Devices

Plenary Session 4

Chair: David Egger
 Room: Mediterraneo DEF

09:00 - 09:30 **Vanessa Wood** (*Laboratory for Interfacial Chemistry, ETH Zurich*)
 4-K1
 Charge Transport in Nanocrystal Solids

SolFuel S1.7

Chair: Shannon Boettcher
 Room: Mediterraneo ABC

09:30 - 10:00 **Jose Ramon Galan-Mascaros** (*Institute of Chemical Research of Catalonia (ICIQ), The Barcelona Institute of Science and Technology (BIST), Avinguda Paisos Catalans 16, Tarragona 43007, Catalonia, Spain*)
 S1.7-I1
 A-LEAF: A European-Wide Approach Towards Solar Fuels

10:00 - 10:30 **Marlene Lamers, Marco Favaro, David Starr, Ibbi Ahmet, Wenjie Li, Lydia Wong, Roel van de Krol, Fatwa Abdi** (*Institute for Solar Fuels, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany*)
 S1.7-O1
 Overcoming the Limitations of BiVO₄ Photoanodes through Anion and Cation Substitution

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

SolFuel S1.8

Chair: Francesca Toma
 Room: Mediterraneo ABC

11:00 - 11:30 **Frank Osterloh** (*University of California at Davis*), Zeqiong Zhao, Renato Gonçalves, Muhammad Huda, Sajib Barman, Emma Willard, Russell Perry, Edaan Byle
 S1.8-O1
 Electronic Structure Basis for Enhanced Overall Water Splitting Photocatalysis of Doped Strontium Titanate in Direct Sunlight

11:30 - 11:45 **Chang-Ming Jiang** (*Joint Center for Artificial Photosynthesis and Chemical Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA*), Ian Sharp, Jason Cooper
 S1.8-O2
 Electronic Structure of CuFeO₂ Photocathode Studied by Resonant Inelastic X-ray Scattering

11:45 - 12:00 **Teresa Andreu** (*Department of Advanced Materials for Energy, Catalonia Institute for Energy Research (IREC), Catalonia, Spain*), Sebastian Murcia-López, Qin Shi
 S1.8-O3
 Surface states in BiVO₄ photoanodes for water oxidation: tuning the electron trapping process

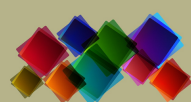
12:00 - 12:15 **Moritz Kölbach** (*Institute for Solar Fuels, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany*), Inês Jordão Pereira, Karsten Harbauer, Sean Berglund, Paul Plate, Dennis Friedrich, Roel van de Krol, Fatwa F. Abdi
 S1.8-O4
 α-SnWO₄: A New Promising Photoanode Material for Solar Water Splitting

12:15 - 12:30 **PengYi Tang** (*Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, Campus UAB, Bellaterra, 08193 Barcelona, Catalonia, Spain*), HaiBing Xie, LiJuan Han, Carles Ros, Marti Biset Peiro, José Ramón Galán-Mascarós, Teresa Andreu, Joan Ramon Morante, Jordi Arbiol
 S1.8-O5
 Bottom-up Engineering of Hematite Nanowire Heterostructures for Photoelectrochemical Water Splitting

Poster Contribution

106 **Teresa Andreu** (*Department of Advanced Materials for Energy, Catalonia Institute for Energy Research (IREC), Catalonia, Spain*), Sebastian Murcia-López, Carles Ros, Nina Carretero, Joan R. Morante
 charge transfer kinetics of photoelectrodes for solar energy storage

109 **Fanxing Xi** (*Helmholtz Zentrum Berlin für Materialien und Energie GmbH*), Farabi Bozheyev, Fatwa F. Abdi, Peter Bogdanoff, Klaus Ellmer, Sebastian Fiechter
 (NH₄)₂Mo₃S₁₃ as a highly efficient hydrogen evolving catalyst deposited on (001)-textured WSe₂ photocathodes



112	<u>Katsushi Fujii</u> (<i>RIKEN, Center for Advanced Photonics</i>), Daiji Yamashita, Kayo Koike, Katsuhiko Tsuno, Masakazu Sugiyama, Takayo Ogawa, Satoshi Wada Concepts and Preliminary Operation of kW-size Power Supply System with Energy Storage by Water Split Hydrogen Generation
127	<u>Yongpeng Liu</u> (<i>Laboratory for Molecular Engineering of Optoelectronic Nanomaterials (LIMNO), École Polytechnique Fédérale de Lausanne (EPFL), Station 6, 1015 Lausanne, Switzerland</i>), Florian Le Formal, Florent Boudoire, Kevin Sivula, Nestor Guijarro Uncovering the Interfacial Carrier Dynamics in CuInGaS ₂ Photocathodes during Hydrogen Production
272	<u>Chiara Pasquini</u> (<i>Freie Universität Berlin</i>), Holger Dau Water Oxidation in Neutral Versus Alkaline Electrolyte, Combining Electrochemistry with in-situ X-Ray Absorption and Raman Spectroscopy
275	<u>Miguel García-Tecedor</u> (<i>Institute of Advanced Materials (INAM), Universitat Jaume I, 12006 Castelló, Spain</i>), Roser Fernández, Felipe Garcés, José Ramón Galán-Mascarós, Sixto Giménez Understanding of the Origin of Performance of NiZnFeOx Catalysts for OER
277	<u>Byung-Ki Na</u> (<i>Chungbuk National University</i>), Gwang-Yong Baek Electrochemical Energy Storage by Carbon-coated SiO ₂ /ZnO Composite of Lithium Ion Battery
278	<u>Rowshanak Irani</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, 12489 Berlin, Germany</i>), Paul Plate, Roel Van de Krol, Fatwa Firdaus Abdi Understanding the Performance Enhancement of BiVO ₄ Photoanodes Decorated with Ultra-Thin MnOx
281	<u>Kayo Koike</u> (<i>RIKEN Center for Advanced Photonics</i>), Kazuhiro Yamamoto, Satoshi Ohara, Satoshi Wada, Katsushi Fujii Relationship between NiO Catalytic Effect and n-type GaN Surface Roughness for Photoelectrochemical Water Splitting
292	<u>Sebastian Z. Oener</u> (<i>Department of Chemistry, University of Oregon</i>), Forrest A.L. Laskowski, Jessica L. Fehrs, David Bain, Shannon W. Boettcher Surface-gated Charge Carrier-Selective Nanocontacts in Photoelectrochemical Water Electrolysis
295	<u>Shan Jiang</u> (<i>Freie Universität Berlin, Department of Physics, Arnimallee 14, 14195 Berlin</i>), Katharina Klingan, Chiara Pasquini, Holger Dau New Aspects of Operando Raman Spectroscopy Applied to Electrochemical CO ₂ Reduction on Cu Foams
297	<u>Nils Pöldme</u> (<i>School of Natural and Environmental Sciences, Newcastle University, Newcastle upon Tyne, NE1 7RU, UK</i>), Elizabeth Gibson Photoelectrocatalytic Hydrogen Evolution on Hybrid Photocathodes
309	<u>Koichiro Ueda</u> (<i>Department of Chemistry, Faculty of Science, Gakushuin University, 1-5-1 Meiji, Toshima-ku, Tokyo 171-8588, Japan</i>), Yoshiyuki Inaguma, Yusuke Asakura, Shu Yin, Ken-ichi Katsumata β-TaON Oxynitride Synthesis Using (C ₆ N ₉ H ₃) _n and its Photoelectrochemical Properties
325	<u>Christiane Adler</u> (<i>University of Ulm</i>), Dariusz Mitoraj, Radim Beranek Drastic Enhancement of Photocatalytic Activity of TiO ₂ Particles with Well-Defined Crystal Facets upon Deposition of Platinum
330	<u>Nils Ulrich</u> (<i>GSI Helmholtzzentrum für Schwerionenforschung</i>), Joachim Brötz, Christina Trautmann, Maria Eugenia Toimil-Molares Synthesis and Characterization of Three-Dimensional Copper Nanowire Networks
335	<u>Drialys Cardenas-Morcoso</u> (<i>Institute of Advanced Materials (INAM), Universitat Jaume I, 12071 Castelló, Spain</i>), Raya Ifraemov, Miguel García-Tecedor, Sixto Gimenez, Idan Hod Harnessing Co based Metalorganic Frameworks for Solar Water Splitting



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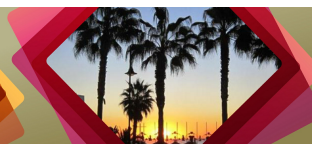
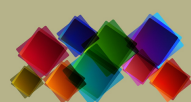
S3 Fundamental Processes in Semiconductor Nanocrystals

Torremolinos, Spain, 2018 October 22nd - 23rd

Conference Chairs: Tianquan Lian and Mischa Bonn

Conference Program

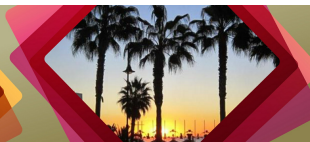
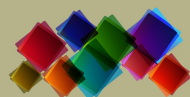
October 22nd - Day 1 (Monday)	
	Plenary session 1 Chair: Mischa Bonn Room: Mediterraneo ABC
09:00 - 09:30 1-K1	<u>Victor Klimov</u> (<i>Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA</i>) Colloidal Quantum Dot Lasing: Historical Perspective and Recent Progress
	Plenary Session 2 Chair: Kevin Sivula Room: Torremolinos AB
09:00 - 09:30 2-K1	<u>Yun Jeong Hwang</u> (<i>Korea Institute of Science and Technology (KIST)</i>), Byoun Koun Min, Hyeong-Suk Oh Electrochemical Conversion of CO ₂ toward Valuable Chemicals for Solar-to-Chemical Conversion Application
	NCFun S3.1 Chair: Tianquan Lian Room: Torremolinos AB
09:30 - 10:00 S3.1-I1	<u>Tianquan Lian</u> (<i>Department of Chemistry, Emory University, 1515 Dickey Drive NE, Atlanta, Georgia 30322, USA</i>) Exciton Structure and Dynamics in 2D Colloidal Quantum Wells
10:00 - 10:30 S3.1-I2	<u>Uri Banin</u> (<i>Institute of Chemistry and the Center for Nanoscience and Nanotechnology, The Hebrew University of Jerusalem</i>) Hybrid Semiconductor-Metal Nanoparticles as Photocatalysts
10:30 - 11:00	Coffee Break
	NCFun S3.2 Chair: Tianquan Lian Room: Torremolinos AB
11:00 - 11:30 S3.2-I1	<u>Daniel Vanmaekelbergh</u> (<i>Universiteit Utrecht</i>), Freddy Rabouw, Federico Montanarella Delayed Exciton Emission in Low-Dimensional CdSe Nanocrystals
11:30 - 12:00 S3.2-I2	<u>Matthew Beard</u> (<i>National Renewable Energy Laboratory, Golden, Colorado, USA</i>) Multiple Exciton Generation in Semiconductor Nanocrystals
12:00 - 12:30 S3.2-O1	<u>Celso de Mello Donega</u> (<i>Universiteit Utrecht</i>), Chenghui Xia, Naomi Winckelmans, Hans Gerritsen, Sara Bals NIR-Emitting CuInS ₂ /ZnS Dot-in-Rod Colloidal Heteronanorods
12:30 - 14:30	Lunch
	NCFun S3.3 Chair: Gordana Dukovic Room: Torremolinos AB
14:30 - 15:00 S3.3-O1	<u>L. Christiaan Post</u> (<i>Condensed Matter and Interfaces, Debye Institute for nanomaterials science, Utrecht University</i>), Tao Xu, Nathali A. Franchina Vergel, Yannick Lambert, Francois Vaurette, Ludovic Desplanque, Xavier Wallart, Bruno Grandidier, Christophe Delerue, Daniel A. M. Vanmaekelbergh Nano Perforation of InGaAs Quantum wells: a Lithography Route Towards III-V Semiconductors with Honeycomb Nanogeometry



15:00 - 15:30 S3.3-O2	Florian Enders, Peng Zeng, Trevor A. Smith, Jannika Lauth, Laurens D. A. Siebbeles, Arne Budweg, Daniele Brida, <u>Klaus Boldt</u> (<i>University of Konstanz</i>) Charge Localisation at Strained, Axial Heterojunctions in 1D Semiconductor Nanocrystals
15:30 - 16:00 S3.3-O3	<u>Omri Bar-Elli</u> (<i>Department of Physics of Complex Systems, Weizmann Institute of Science, Rehovot 76100, Israel</i>), Dan Steinitz, Gaoling Yang, Ron Tenne, Anastasia Ludwig, Yung Kuo, Antoine Triller, Shimon Weiss, Dan Oron Detecting Short Voltage Pulses Using Single Quantum Dots Designed for Action Potential Sensing
16:00 - 16:30 S3.3-I1	<u>Christian Klinké</u> (<i>Institute of Physical Chemistry, University of Hamburg</i>) Two-Dimensional Nanostructures: Synthesis and Optoelectronic Transport
16:30 - 17:00 S3.3-I2	<u>Lilac Amirav</u> (<i>Schulich Faculty of Chemistry, Technion – Israel Institute of Technology</i>) Sculpting Photocatalysts on the Nano Scale

October 23rd - Day 2 (Tuesday)

	NCFun S3.4 Chair: Mischa Bonn Room: Torremolinos AB
09:00 - 09:30 S3.4-I1	<u>Dan Oron</u> (<i>Department of Physics of Complex Systems, Weizmann Institute of Science, Rehovot 76100, Israel</i>) Luminescence Upconversion in Designer Semiconductor Nanocrystals
09:30 - 10:00 S3.4-I2	<u>Enrique Canovas</u> (<i>IMDEA Nanoscience</i>), Hai Wang, Mischa Bonn Hot Electron Transfer Efficiency at Quantum Dot-Oxide Interfaces
10:00 - 10:30 S3.4-I3	<u>Christophe Delerue</u> (<i>IEMN, UMR-CNRS 8520, Villeneuve d'Ascq, France</i>) Theory of Localized Surface Plasmon Resonance in Doped Semiconductor Nanocrystals
10:30 - 11:00	Coffee Break
	NCFun S3.5 Chair: Mischa Bonn Room: Torremolinos AB
11:00 - 11:30 S3.5-I1	<u>Richard Schaller</u> (<i>Department of Chemistry, Northwestern University, Evanston, IL 60208, USA</i>) Ultrafast Structural Studies of Semiconductor Nanocrystals: Transient Disorder and Recrystallization
11:30 - 12:00 S3.5-I2	<u>Sanford Ruhman</u> (<i>Hebrew University of Jerusalem</i>), Efrat Lifshitz, Roi Baer, Tufan Ghosh Spectator Exciton Unveils Spin Blockades in the Cooling of Hot Multi-Excitons
12:00 - 12:30 S3.5-I3	<u>Majed CHERGUI</u> (<i>Ecole Polytechnique Fédérale de Lausanne, Suisse</i>) Charge Carrier and Phonon Dynamics in Transition Metal Oxide and in Lead-Halide Perovskite Nanoparticles
12:30 - 14:30	Lunch
	NCFun S3.6 Chair: Enrique Cánovas Room: Torremolinos AB
14:30 - 15:00	
15:00 - 15:30 S3.6-I1	<u>Gordana Dukovic</u> (<i>University of Colorado Boulder, US</i>) Excited State Processes in Semiconductor Nanocrystals and their relationships with Light-Driven Multi-Electron Catalysis
17:30 - 19:00	Poster Session



Poster Contribution

146	<u>Maria Wächtler</u> (<i>Leibniz Institute of Photonic Technology</i>), Lilac Amirav Impact of composition and size of the metal tip on charge separation and hydrogen evolution in metal-tipped CdSe@CdS nanorods
313	<u>Ivo Tanghe</u> (<i>Photonics Research Group, Ghent University, Belgium</i>), Kai Chen, Renu Tomar, Shalini Singh, Iwan Moreels, Justin M. Hodgekiss, Dries Van Thourhout, Zeger Hens, Pieter Geiregat Ultrafast Phase Modulation in CdSe Colloidal Quantum Wells
323	<u>Franco V. A. Camargo</u> (<i>IFN-CNR, Dipartimento di Fisica, Piazza L. da Vinci 32, 20133 Milano, Italy</i>), Tetsuhiko Nagahara, Yuval Ben-Shahar, Uri Banin, Giulio Cerullo Two-Dimensional Electronic Spectroscopy of CdSe Nanorods
328	<u>Simon Schneider</u> (<i>Institut für Physikalische Chemie, Universität Hamburg</i>), Tobias Kipp, Christian Strelow, Alf Mews Fluorescence of Individual Semiconductor- Metal Hybride Nanoparticles

nanoGe Fall Meeting 2018 (FallMeeting18)

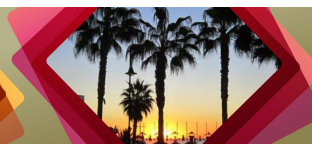
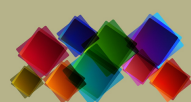
S5 Charge Carrier Dynamics at the Nanoscale

Torremolinos, Spain, 2018 October 22nd - 24th

Conference Chairs: David Egger, Arjan Houtepen and Freddy Rabouw

Conference Program

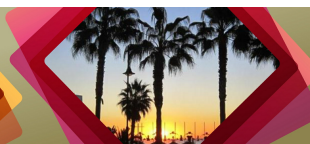
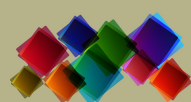
October 22nd - Day 1 (Monday)	
	Plenary session 1 Chair: Mischa Bonn Room: Mediterraneo ABC
09:00 - 09:30 1-K1	<u>Victor Klimov</u> (<i>Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA</i>) Colloidal Quantum Dot Lasing: Historical Perspective and Recent Progress
	Plenary Session 2 Chair: Kevin Sivula Room: Torremolinos AB
09:00 - 09:30 2-K1	<u>Yun Jeong Hwang</u> (<i>Korea Institute of Science and Technology (KIST)</i>), Byoun Koun Min, Hyeong-Suk Oh Electrochemical Conversion of CO ₂ toward Valuable Chemicals for Solar-to-Chemical Conversion Application
	Dyman S5.1 Chair: Enrique Cánovas Room: Mediterraneo EF
09:30 - 10:00 S5.1-O1	<u>Maryam Alimoradi Jazi</u> (<i>Condensed Matter and Interfaces, Debye Institute for nanomaterials science, Utrecht University</i>), Wiel Evers, Thomas Altantzis, Christophe Delerue, Sara Bals, Laurens Sibbeles, Arjan Houtepen, Daniel Vanmaekelberg Band Occupation and Charge Transport in CdSe Nanocrystal Superlattices
10:00 - 10:30 S5.1-O2	<u>Willem Walravens</u> (<i>Physics and Chemistry of Nanostructures, Ghent University, 9000 Ghent, Belgium</i>), Filip Geenen, Eduardo Solano, Jolien Dendooven, Athmane Tadjine, Nayyera Mahmoud, Gunther Roelkens, Christophe Delerue, Christophe Detavernier, Zeger Hens Setting Carriers Free – Healing Faulty Interfaces Promotes Delocalization and Transport in Nanocrystal Solids
10:30 - 11:00	Coffee Break
	Dyman S5.2 Chair: Vanessa Wood Room: Mediterraneo EF
11:00 - 11:30 S5.2-O1	<u>Federico Montanarella</u> (<i>Universiteit Utrecht</i>), Margherita Biondi, Stijn Hinterding, Daniel Vanmaekelbergh, Freddy Rabouw Reversible Charge Carrier Trapping Slows Down Förster Energy Transfer in CdSe/CdS Quantum-Dot Solids
11:30 - 12:00 S5.2-I1	Ivan Infante, <u>Simon Boehme</u> (<i>Department of Chemistry and Pharmaceutical Sciences, Division of Theoretical Chemistry, Vrije Universiteit Amsterdam, De Boelelaan 1081, 1081 HV Amsterdam, The Netherlands</i>) Size- and Temperature- Dependent Hot Carrier Cooling in CsPbBr ₃ Nanocrystals
12:00 - 12:30 S5.2-I2	<u>Matthew Beard</u> (<i>National Renewable Energy Laboratory, Golden, Colorado, USA</i>) Controlling the Properties of Colloidal Quantum Dots for Solar Energy Applications
12:30 - 14:30	Lunch
	Dyman S5.3 Chair: Simon Boehme Room: Mediterraneo EF



14:30 - 15:00 S5.3-O1	<u>Emmanuel Lhuillier</u> (<i>Sorbonne Universités, UPMC Univ. Paris 06, CNRS-UMR 7588, Institut des NanoSciences de Paris, 4 place Jussieu, 75005 Paris, France</i>), Bertille Martinez, Clement livache, nicolas goubet Dynamics in Narrow Band Gap Nanocrystals
15:00 - 15:30 S5.3-O2	<u>P. Tim Prins</u> (<i>Debye Institute for Nanomaterials Science, Utrecht University</i>), Pieter Geiregat, Dirk A. W. Spruijt, Zeger Hens, Freddy T. Rabouw, Celso de Mello Donega, Daniel A. M. Vanmaekelbergh Doping InP Quantum Dots with Cu ⁺ slows down Hot Electron Cooling
15:30 - 16:00 S5.3-O3	<u>Aparajita Das</u> (<i>Department of Chemistry, Indian Institute of Technology Hyderabad</i>), Ankita Kolay, Deepa Melepurath Poly(3,4-ethylenedioxythiophene) Counter Electrode and an Electrolyte Additive for Quantum Dot Solar Cells
16:00 - 16:30 S5.3-O4	<u>Gianluca Grimaldi</u> (<i>Optoelectronic Materials Section, Department of Chemical Engineering, Delft University of Technology, Van der Maasweg 9, 2629 HZ Delft, The Netherlands</i>), Arjan Houtepen, R.W. Crisp, S. Ten Brinck, F. Zapata, M. van Ouwendorp, M. van den Brom, N. Renaud, N. Kirkwood, W. Evers, S. Kinge, I. Infante, L.D.A. Siebbeles Controlling (hot) electron transfer in quantum dot heterojunction films
16:30 - 17:00 S5.3-I1	<u>Enrique Canovas</u> (<i>IMDEA Nanoscience</i>) Band-Like Charge Transport in a Semiconducting Metal-Organic Framework

October 23rd - Day 2 (Tuesday)

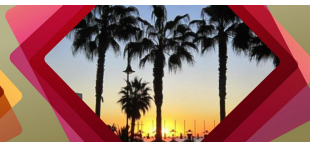
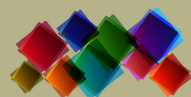
Dyman S5.4 Chair: Stefano Sanvito Room: Mediterraneo EF	
09:00 - 09:30 S5.4-O1	<u>Xiaoping Chen</u> , <u>Harshini Annadata</u> (<i>Department of Chemistry, National University of Singapore</i>), David Egger, Christian Nijhuis Tuning the Tunnelling Decay Coefficient Using Single Polarizable Atoms via Energy Level Engineering of the Frontier Orbitals
09:30 - 10:00 S5.4-O2	<u>José Manuel Vicent Luna</u> (<i>Department of Physical, Chemical and Natural Systems, Universidad Pablo de Olavide, 41013 Sevilla, Spain</i>), Azaceta Eneko, Said Hamad, José Manuel Ortiz Roldán, Ramón Tena Zaera, Sofía Calero, Juan Antonio Anta Molecular Dynamics Analysis of Charge Transport in Ionic Liquid Electrolytes containing added salt with Mono, Di, and Trivalent Metal Cations
10:00 - 10:30 S5.4-O3	<u>Jaime Colchero</u> (<i>Universidad de Murcia</i>), Miguel Ortuño, Maria Fernandez M.F. Orihuela, Andres Somoza, Emin Istif, Sandra Víctor-Roman, Thierry Grenet, Julien Delahaye, Ana Maria Benito, Wolfgang Maser, Elisa E. Palacios-Lidón Slow Charge Relaxation in Highly Disordered Electronic Systems studied by Electrostatic Scanning Force Microscopy
10:30 - 11:00	Coffee Break
Dyman S5.5 Chair: Leeor Kronik Room: Mediterraneo EF	
11:00 - 11:30 S5.5-I1	<u>Stefano Sanvito</u> (<i>School of Physics and CRANN, Trinity College Dublin</i>) Different Flavours of Constrained Density Functional Theory for Charge Dynamics in Organic Materials
11:30 - 12:00 S5.5-I2	<u>Johannes V. Barth</u> (<i>Physics Department, Technical University of Munich, D-85748 Garching, Germany</i>), Hai Bi, Carlos-Andres Palma, Yuxian Gong, Peter Hasch, Mark Elbing, Marcel Mayor, Joachim Reichert Vibrational Excitations & Conformational Switching in Single-Molecule Junctions
12:00 - 12:30 S5.5-I3	<u>David Cahen</u> (<i>Weizmann Institute of Science & Bar Ilan University</i>) Proteins as Optoelectronic Materials...
12:30 - 14:30	Lunch
Dyman S5.6 Chair: Thomas Kirchartz Room: Mediterraneo EF	



14:30 - 15:00 S5.6-O1	<u>Daniel Hernangomez-Perez</u> (<i>Institute of Theoretical Physics, University of Regensburg, D-93050 Regensburg, Germany</i>), Suman Gunasekaran, Iryna Davydenko, Seth Marder, Ferdinand Evers, Latha Venkataraman Quantum Transport Properties of Pi-Conjugated Linear Molecular Junctions
15:00 - 15:30 S5.6-O2	<u>Felix J. Hofmann</u> (<i>Institut für Experimentelle und Angewandte Physik, Universität Regensburg, Universitätsstraße 31, 93053 Regensburg, Germany</i>), Maryna I. Bodnarchuk, Loredana Protesescu, Maksym V. Kovalenko, John M. Lupton, Jan Vogelsang Exciton Gating and Triplet Deshelling in Single Dye Molecules Excited by Perovskite Nanocrystal FRET Antennae
15:30 - 16:00 S5.6-O3	<u>Selina Olthof</u> (<i>Institute of Physical Chemistry, University of Cologne, Germany</i>), Kai Brinkmann, Ting Hu, Klaus Meerholz, Thoams Riedl Metal Oxide Layers in Perovskite Solar Cells: a Double-Edged Sword
16:00 - 16:30 S5.6-I1	<u>Laura Herz</u> (<i>Clarendon Laboratory, Department of Physics, University of Oxford, Parks Road, Oxford, OX1 3PU, United Kingdom</i>) Effect of Nanoscale Phenomena on Charge Conduction and Recombination Mechanisms in Hybrid Perovskites
16:30 - 17:00 S5.6-I2	<u>Leor Kronik</u> (<i>Department of Materials and Interfaces, Weizmann Institute of Science, Rehovoth 76100, Israel</i>) Structural Dynamics in Lead-Halide Perovskites from First-Principles
17:30 - 19:00	Poster Session

October 24th - Day 3 (Wednesday)

Plenary session 3 Chair: Shannon Boettcher Room: Mediterraneo ABC	
09:00 - 09:30 3-K1	<u>Francesca Maria Toma</u> (<i>Chemical Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, California 94720, United States</i>) A New Portrait of Functional Complex Interfaces for Solar Fuel Devices
Plenary Session 4 Chair: David Egger Room: Mediterraneo DEF	
09:00 - 09:30 4-K1	<u>Vanessa Wood</u> (<i>Laboratory for Interfacial Chemistry, ETH Zurich</i>) Charge Transport in Nanocrystal Solids
Dyman S5.7 Chair: David Cahen Room: Mediterraneo DEF	
09:30 - 10:00 S5.7-O1	Christian Gehrmann, David Egger, <u>Robert Lovrincic</u> (<i>Institute for High Frequency Technology, TU Braunschweig</i>) Optical Phonons in Halide Perovskites and Implications for Charge Transport
10:00 - 10:30 S5.7-I1	<u>Thomas Kirchartz</u> (<i>IEK5-Photovoltaics, Forschungszentrum Jülich, 52425 Jülich, Germany</i>) Long Lifetimes and Small Phonon Energies in Metal-Halide Perovskite Solar Cells
10:30 - 11:00	Coffee Break
Dyman S5.8 Chair: Freddy Rabouw Room: Mediterraneo DEF	
11:00 - 11:30 S5.8-I1	<u>Artem Bakulin</u> (<i>Department of Chemistry, Imperial College London, South Kensington, London, SW7 2AZ, UK</i>) Ultrafast Intraband Spectroscopy of Hot-Carrier Cooling in Lead-Halide Perovskites
11:30 - 12:00 S5.8-O1	<u>Felix Deschler</u> (<i>Cavendish Laboratory, University of Cambridge, JJ Thomson Avenue, Cambridge CB3 0HE, United Kingdom</i>), Sascha Feldmann, Stuart MacPherson, Satyaprasad Senanayak, Jasmine Rivett, Mojtaba Abdi Jalebi, Guangjun Nan, David Beljonne, Sam Stranks, Michael Salia Origin of High Photoluminescence in Mixed-Cation Perovskites: Photodoping from energetic disorder
12:30 - 14:30	Lunch



Poster Contribution

315	<u>Gianluca Grimaldi</u> (<i>Opto-electronic materials section, Department of Chemical Engineering, Faculty of Applied Sciences, Delft University of Technology</i>), Ryan Crisp, Nicholas Kirkwood, Sachin Kinge, Laurens Siebbeles, Arjan Houtepen Ligand-Induced Control of Energy Level Alignment in QD Heterostructures
318	<u>Kaspars Malnieks</u> (<i>Research Laboratory of Functional Materials Technology, Faculty of Materials Science and Applied Chemistry, Riga Technical University, Paula Valdena 3/7, Riga, LV1048, Latvia</i>), Andris Sutka, Linards Lapcinskis Enhanced Performance of Triboelectric Nanogenerators Based on Ferroelectric Nanoparticles
322	<u>iaco geuchies</u> (<i>Optoelectronic Materials Section, Department of Chemical Engineering, Delft University of Technology, Julianalaan 136, 2628 BL Delft, The Netherlands.</i>), gianluca grimaldi, nicholas kirkwood, ward van der stam, arjan houtepen Measuring and Modelling the Build-up of Optical Gain in Semiconductor Quantum Dots
331	Sven-Hendrik Lohmann, <u>Christian Strelow</u> (<i>Institut für Physikalische Chemie, Universität Hamburg</i>), Alf Mews, Tobias Kipp Spectral Diffusion: A Monitor for the Electron and Hole Localization in Colloidal Semiconductor DotRod Nanocrystals

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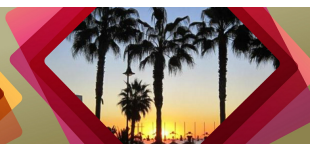
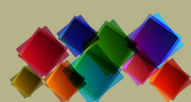
S7 Fundamental Aspects of Perovskite Solar Cells and Optoelectronics

Torremolinos, Spain, 2018 October 22nd - 24th

Conference Chairs: Laura Herz and Tze-Chien Sum

Conference Program

October 22nd - Day 1 (Monday)	
Plenary session 1 Chair: Mischa Bonn Room: Mediterraneo ABC	
09:00 - 09:30 1-K1	<u>Victor Klimov</u> (<i>Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA</i>) Colloidal Quantum Dot Lasing: Historical Perspective and Recent Progress
Plenary Session 2 Chair: Kevin Sivula Room: Torremolinos AB	
09:00 - 09:30 2-K1	<u>Yun Jeong Hwang</u> (<i>Korea Institute of Science and Technology (KIST)</i>), Byoun Koun Min, Hyeong-Suk Oh Electrochemical Conversion of CO ₂ toward Valuable Chemicals for Solar-to-Chemical Conversion Application
PerFun S7.1 Chair: Matthew C. Beard Room: Torremolinos DE	
09:30 - 10:00 S7.1-I1	<u>David Cahen</u> (<i>Weizmann Institute of Science & Bar Ilan University</i>) What Remains Special about Halide Perovskites?
10:00 - 10:30 S7.1-I2	<u>Robert Lovrincic</u> (<i>Institute for High Frequency Technology, TU Braunschweig</i>) Compositional Doping of Lead Halide Perovskites
10:30 - 11:00 Coffee Break	
PerFun S7.2 Chair: Xing Guichuan Room: Torremolinos DE	
11:00 - 11:15 S7.2-O1	<u>Timothy Crothers</u> (<i>Clarendon Laboratory, Department of Physics, University of Oxford, Parks Road, Oxford, OX1 3PU, United Kingdom</i>), Rebecca Milot, Jay Patel, Elizabeth Parrott, Johannes Schlipf, Peter Müller-Buschbaum, Michael Johnston, Laura Herz The Role of Photon Reabsorption in Masking Intrinsic Bimolecular Charge-Carrier Recombination in CH ₃ NH ₃ PbI ₃ Perovskite.
11:15 - 11:30 S7.2-O2	<u>Young-Kwang Jung</u> (<i>Yonsei University</i>), Keith T. Butler, Aron Walsh Bond Formation and Carrier Confinement at Epitaxial Interface between PbS and CsPbBr ₃
11:30 - 11:45 S7.2-O3	Adrián Francisco-López, Bethan Charles, Oliver J. Weber, María 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>) Pressure-Induced Locking of Methylammonium Cations Versus Amorphization in Hybrid Lead Iodide Perovskites
11:45 - 12:00 S7.2-O4	<u>Katarzyna Pydzinska</u> (<i>Faculty of Physics, Adam Mickiewicz University in Poznań, Umultowska 85, 61-614 Poznań, Poland</i>), Jerzy Karolczak, Janusz Szeremeta, Konrad Wojciechowski, Marcin Ziolk Transient Absorption of Perovskite Solar Cells. Differences in the Transient Features due to Synthesis Methods and Proper Determination of the Second Order Recombination Rate Constant
12:00 - 12:15 S7.2-O5	<u>Mingjie Li</u> (<i>School of Physical and Mathematical Sciences, Nanyang Technological University, 21 Nanyang Link, Singapore 637371</i>), Tze Chien Sum Slow Cooling and Highly Efficient Extraction of Hot-Carriers in Perovskite Nanocrystals: Towards Hot-Carrier Perovskite Solar Cell



12:15 - 12:30

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

PerFun S7.3

Chair: David Cahen
Room: Torremolinos DE

14:30 - 15:00 Matthew Beard (*National Renewable Energy Laboratory, Golden, Colorado, USA*)

S7.3-I1 Time-Resolved Optical Studies of Perovskite Polycrystalline Films, Single Crystals and their Surfaces

15:00 - 15:30 Guichuan Xing (*Institute of Applied Physics and Materials Engineering, University of Macau, Macau SAR, China 999078*)

S7.3-I2

Light Emission from Metal-Halide Perovskites

15:30 - 16:00 Laurent Pedesseau (*Fonctions Optiques pour les Technologies de l'Information (FOTON), Institut National des Sciences Appliquées (INSA) de Rennes, CNRS, UMR 6082, 35708 Rennes, France*), Arthur Marronnier, Guido Roma, Soline Boyer-Richard, Jean-Marc Jancu, Yvan Bonnassieux, Claudine Katan, Constantinos Stoumpos, Mercouri Kanatzidis, Jacky Even

S7.3-O1

Black Phases of CsPbI₃: Structural and Theoretical Studies

16:00 - 16:30 Tufan Ghosh, Sigalit Aharon, Lioz Etgar, Sanford Ruhman (*Institute of Chemistry, The Hebrew University, Jerusalem 91904, Israel*)

S7.3-I3

Gauging Photorefractive Effects on Transient Absorption in Lead Iodide Perovskite Thin Films by Comparison to Nanocrystals.

16:30 - 17:00 Mikael Kepenekian (*Univ Rennes, ENSCR, INSA Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes) - UMR6226, F-35000 RENNES*), Boubacar Traore, Jean-Christophe Blancon, Hsinhan Tsai, Wanyi Nie, Konstantinos Stoumpos, Laurent Pedesseau, Claudine Katan, Sergei Tretiak, Mercouri Kanatzidis, Jacky Even, Aditya Mohite

S7.3-O2

Making and breaking the exciton in layered halide hybrid perovskites

October 23rd - Day 2 (Tuesday)

PerFun S7.4

Chair: Robert Lovrincic
Room: Torremolinos DE

09:00 - 09:30

09:30 - 10:00 Selina Olthof (*University of Cologne, Institute for Physical Chemistry*)

S7.4-I1 Unravelling the Electronic Structure of Hybrid Perovskites and their Interfaces

10:00 - 10:30 Luis Pazos-Outon (*Electrical Engineering and Computer Sciences, University of California, Berkeley*), T. Patrick Xiao, Eli Yablonovitch

S7.4-O1

Fundamental Efficiency Limit of Lead Iodide Perovskite Solar Cells

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

PerFun S7.5

Chair: Robert Lovrincic
Room: Torremolinos DE

11:00 - 11:30 Juan Bisquert (*Institute of Advanced Materials (INAM), Universitat Jaume I*)

S7.5-O1 Ionic Transport, Defects and Electrooptical Response of Perovskite Solar Cells

11:30 - 12:00 Adam Pockett (*SPECIFIC, Swansea University*), Jenny Baker, Trystan Watson, Matt Carnie

S7.5-O2

Ion Migration in Triple Mesoporous 2D/3D Perovskite Solar Cells

12:00 - 12:30 Antonio Guerrero (*Institute of Advanced Materials (INAM), Universitat Jaume I*)

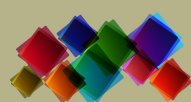
S7.5-O3

Ionic Diffusion Quantification in Lead Halide Perovskites

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

joint session S7/S8

Room: Torremolinos DE



nanoGe Fall Meeting

Torremolinos-Spain

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nanoGe

14:30 - 15:00 S7/S8-I1	<u>Filippo De Angelis</u> (<i>Computational Laboratory for Hybrid/Organic Photovoltaics (CLHYO), CNR-ISTM, Perugia, Italy</i>) Defect photophysics of metal-halide perovskites
15:00 - 15:30 S7/S8-I2	<u>Koichi Yamashita</u> (<i>Department of Chemical System Engineering, Graduate School of Engineering, The University of Tokyo</i>) Charge Separation and Charge Carrier Trapping of Lead Iodide Perovskites
15:30 - 16:00 S7/S8-I3	<u>Edoardo Mosconi</u> (<i>Computational Laboratory for Hybrid/Organic Photovoltaics (CLHYO), Istituto CNR di Scienze e Tecnologie Molecolari (ISTM-CNR), Via Elce di Sotto 8, 06123, Perugia, Italy.</i>), García Espejo García Espejo, Filippo De Angelis First Principles Modeling of Mixed 2D/3D Organohalide Perovskites
16:00 - 16:30 S7/S8-I4	<u>Claudine Katan</u> (<i>Univ Rennes, ENSCR, INSA Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes) - UMR6226, F-35000 RENNES</i>), Boubacar Traore, Mikaël Képénékian, Laurent Pedesseau, Jean-Christophe Blancon, Wanyi Nie, Hsinhan Tsai, Sergei Tretiak, Constantinos Stoumpos, Mercouri Kanatzidis, Aditya Mohite, Jacky Even Halide Perovskites: Recent Advances in Optoelectronic Properties from Atomic Scale Modelling

17:30 - 19:00 **Poster Session**

October 24th - Day 3 (Wednesday)

Plenary session 3 Chair: Shannon Boettcher Room: Mediterraneo ABC	
09:00 - 09:30 3-K1	<u>Francesca Maria Toma</u> (<i>Chemical Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, California 94720, United States</i>) A New Portrait of Functional Complex Interfaces for Solar Fuel Devices
Plenary Session 4 Chair: David Egger Room: Mediterraneo DEF	
09:00 - 09:30 4-K1	<u>Vanessa Wood</u> (<i>Laboratory for Interfacial Chemistry, ETH Zurich</i>) Charge Transport in Nanocrystal Solids
PerFun S7.7 Chair: Koichi Yamashita Room: Torremolinos DE	
09:30 - 10:00 S7.7-I1	<u>Felix Deschler</u> (<i>University of Cambridge, UK</i>) Investigation of Electronic and Structural Dynamics in Metal-Halide Perovskites with Ultrafast Spectroscopy
10:00 - 10:30 S7.7-I2	<u>Artem Bakulin</u> (<i>Department of Chemistry, Imperial College London, South Kensington, London, SW7 2AZ, UK</i>) Organic Cation in Hybrid Perovskite Materials and Interfaces
10:30 - 11:00	Coffee Break
PerFun S7.8 Chair: Koichi Yamashita Room: Torremolinos DE	
11:00 - 11:30	
11:30 - 12:00 S7.8-O1	<u>Holger Röhme</u> (<i>Light Technology Institute, Karlsruhe Institute of Technology, Karlsruhe, 76131, Germany</i>), Tobias Leonhard, Michael J. Hoffmann, Alexander Colmann Ferroelectric domains in methylammonium lead iodide perovskite solar cells
12:00 - 12:30 S7.8-O2	<u>Vladimir Chirvony</u> (<i>Instituto de Ciencia de los Materiales, Universidad de Valencia, c/Catedrático J. Beltrán, 2, Paterna 46980, Spain</i>), Juan Martínez-Pastor, Henk Bolink Long-Lived Luminescence and Slow Carrier Diffusion in Metal Halide Perovskites as a result of Multiple Trapping and De-Trapping by Shallow Non-Quenching Traps
12:30 - 14:30	Lunch

Poster Contribution

128	<u>Bora Kim</u> (<i>Department of Energy Science, Sungkyunkwan University, Suwon 16419, Republic of Korea</i>), Duc Anh Nguyen, Hyojung Kim, Dae Young Park, Jung Yup Yang, Mun Seok Jeong Inorganic 2-D Transition Metal Dichalcogenides Charge Transport Layers for Perovskite Solar Cells
130	<u>Hyojung Kim</u> (<i>Department of Energy Science, Sungkyunkwan University, Suwon, 16419, Republic of Korea</i>), Hye Ryung Byun, Mun Seok Jeong Synthesis and Characterization of Rb(MAFA) Perovskite Single Crystals
174	Boubacar Traore, <u>Laurent Pedesseau</u> (<i>Univ Rennes, INSA Rennes, CNRS, Institut FOTON - UMR6082, F-35000 RENNES</i>), Linda Assam, Xiaoyang Che, Jean-Christophe Blancon, Hsinhan Tsai, Wanyi Nie, Constantinos Stoumpos, Mercouri Kanatzidis, Sergei Tretiak, Aditya Mohite, Jacky Even, <u>Mikaël Képénékian</u> (<i>Univ Rennes, ENSCR, INSA Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes) - UMR6226, F-35000 RENNES</i>), <u>Claudine Katan</u> (<i>Univ Rennes, ENSCR, INSA Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes) - UMR6226, F-35000 RENNES</i>) Composite Approach for Layered Hybrid Perovskites: Band Alignment, Quantum and Dielectric Confinements
222	<u>Thi Tuyen Ngo</u> (<i>Institute of Advanced Materials (INAM), Universitat Jaume I, 12006 Castelló, Spain</i>), Miri Kazes, Dan Oron, Ivan Mora-Sero Perovskite Films with Embedded Quantum Dots for Photovoltaic Applications
285	<u>Franco Decker</u> (<i>Università La Sapienza</i>), Danilo Dini, Diego Di Girolamo, Fabio Matteocci, Aldo Di Carlo Perovskite Solar Cells (PSCs) with Inverted Architecture: Optimization of the Conditions of Deposition for the Improvement of Photoconversion Efficiency
289	<u>Xiaoping Chen</u> (<i>Global Research Center for Environment and Energy based on Nanomaterials Science (GREEN), National Institute for Materials Science (NIMS)</i>), Yasuhiro Shirai, Masatoshi Yanagida, Kenjiro Miyano Recombination between Free Carriers and Mobile Ions in Perovskite Solar Cells, an Impedance Study
299	<u>Eui Jin Lee</u> (<i>DGIST</i>), Dae-Hwan Kim, Dae-Kue Hwang Enhanced Performance of Inorganic Perovskite Solar Cells by Incorporating of Chalcogenide Quantum Dots
300	<u>Wook Hyun Kim</u> (<i>DGIST</i>), Dae-Hwan Kim, Sungho Woo MgO Coated Mesoporous TiO ₂ for Highly Efficient All-Inorganic CsPbI ₃ Perovskite Solar Cells

nanoGe Fall Meeting 2018 (FallMeeting18)

S8 Modelling Perovskite Solar Cells from the Microscale to the Macroscale

Torremolinos, Spain, 2018 October 22nd - 23rd

Conference Chairs: Alison Walker and Claudio Quarti

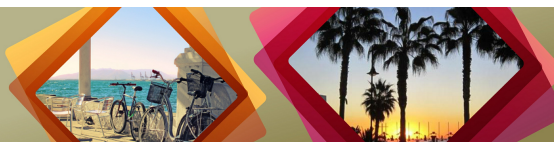
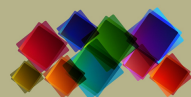
Conference Program

October 22nd - Day 1 (Monday)	
Plenary session 1 Chair: Mischa Bonn Room: Mediterraneo ABC	
09:00 - 09:30 1-K1	<u>Victor Klimov</u> (<i>Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA</i>) Colloidal Quantum Dot Lasing: Historical Perspective and Recent Progress
Plenary Session 2 Chair: Kevin Sivula Room: Torremolinos AB	
09:00 - 09:30 2-K1	<u>Yun Jeong Hwang</u> (<i>Korea Institute of Science and Technology (KIST)</i>), Byoun Koun Min, Hyeong-Suk Oh Electrochemical Conversion of CO ₂ toward Valuable Chemicals for Solar-to-Chemical Conversion Application
PerMod S8.1 Chair: Alessio Gagliardi Room: Torremolinos C	
09:30 - 10:00 S8.1-I1	<u>Beat Ruhstaller</u> (<i>Zurich Univ. of Appl. Sciences (ZHAW), Inst. of Computational Physics</i>), Evelyne Knapp, Martin Neukom, Andreas Schiller, Stéphane Altazin Electronic, Ionic and Optical Perovskite Solar Cell Modeling and Experimental Validation
10:00 - 10:30 S8.1-I2	<u>Juan A. Anta</u> (<i>Área de Química Física, Universidad Pablo de Olavide, E-41013 Sevilla, Spain</i>) Modeling and Interpretation of Small Perturbation Measurements in Perovskite Solar Cells
10:30 - 11:00	Coffee Break
PerMod S8.2 Chair: Amanda Neukirch Room: Torremolinos C	
11:00 - 11:30 S8.2-O3	<u>Uli Würfel</u> (<i>Fraunhofer Institute for Solar Energy Systems (ISE), Heidenhofstraße 2, 79110 Freiburg, Germany</i>), Moritz Unmüssig Why Do Perovskite Solar Cells that Have a Reduced Open-Circuit Voltage due to Surface Recombination Not Show Hysteresis?
11:30 - 12:00 S8.2-O1	<u>Marten Koopmans</u> (<i>Photophysics and Optoelectronics, Zernike Institute for Advanced Materials, University of Groningen, Nijenborgh 4, 9747 AG, The Netherlands</i>), Jan Anton Koster A comprehensive numerical study of the implications of s-shaped JV characteristics in perovskite solar cells
12:00 - 12:30 S8.2-O2	<u>Nadège Marchal</u> (<i>University of Mons (UMONS), Laboratory for Chemistry of Novel Materials, Center for Innovation and Research in Materials and Polymers (CIRMAP), Mons (Belgium)</i>), Claudio Quarti, David Beljonne Effect of Electronically Inert Organic Spacers on the Optoelectronic Properties of 2D Hybrid Perovskites
12:30 - 14:30	Lunch
PerMod S8.3 Chair: Edoardo Mosconi Room: Torremolinos C	
14:30 - 14:45 S8.3-O4	Elnaz Ghahremanirad, <u>Agustín Bou</u> (<i>Institute of Advanced Materials (INAM), Universitat Jaume I, 12006 Castelló, Spain</i>), Saeed Olyaei, Juan Bisquert Inductive Loop in the Impedance Response of Perovskite Solar Cells Explained by Surface Polarization Model

14:45 - 15:00 S8.3-O5	<u>Azimatu Seidu</u> (<i>Department of Applied Physics, Aalto University, P.O.Box 11100, FI-00076 Aalto, Finland</i>), Lauri Himanen, Jingrui Li, Patrick Rinke Database-driven study for hybrid perovskite coating materials
15:00 - 15:30 S8.3-I1	<u>Amanda Neukirch</u> (<i>Los Alamos National Laboratory, Los Alamos, New Mexico 87545, United States</i>), Jacky Even, Claudine Katan, Sergei Tretiak Geometry Distortion and Small Polaron Binding Energy Changes with Ionic Replacement in Halide Perovskites
15:30 - 16:00 S8.3-O1	<u>Juan Bisquert</u> (<i>Institute of Advanced Materials (INAM), UniversitatJaume I, 12006 Castelló, Spain</i>), Agustín Bou, Sandheep Ravishankar Theory of Frequency Perturbation Techniques for Perovskite Solar Cells
16:00 - 16:30 S8.3-O2	<u>Matthew Wolf</u> (<i>Department of Physics, University of Bath, Claverton Down, Bath BA2 7AY, United Kingdom</i>), Lewis Irvine, Ian Thompson, Alison Walker Meso-Scale Modelling of Charge Transport in Halide Perovskites
16:30 - 17:00 S8.3-O3	<u>Vanessa Wood</u> (<i>ETH Zurich, Department of Information Technology and Electrical Engineering</i>) Vibrations and Electron-Phonon Coupling in Lead Halide Perovskite Nanocrystals

October 23rd - Day 2 (Tuesday)

	PerMod S8.4 Chair: Beat Ruhstaller Room: Torremolinos C
09:00 - 09:30 S8.4-I1	<u>Giles Richardson</u> (<i>University of Southampton</i>) How Transport Layer Properties affect Perovskite Solar Cell Performance: Insights from a Coupled Charge Transport/ion Migration Model
09:30 - 10:00 S8.4-I2	<u>Alessio Gagliardi</u> (<i>Technische Universität München</i>) Simulation of Perovskite Solar Cells: the Role of Internal Interfaces
10:00 - 10:30 S8.4-O1	<u>Daniele Meggiolaro</u> (<i>D3-Computation, Istituto Italiano di Tecnologia</i>), Edoardo Mosconi, Filippo De Angelis Defects in Lead Halide Perovskites: a Computational Perspective
10:30 - 11:00	Coffee Break
	PerMod S8.5 Chair: Juan A. Anta Room: Torremolinos C
11:00 - 11:30 S8.5-O1	<u>Vincent Le Corre</u> (<i>Photophysics and OptoElectronics, Zernike Institute for Advanced Materials, University of Groningen, Nijenborgh 4, 9747 AG, The Netherlands</i>), Lorena Perdigón Toro, Markus Feuerstein, Martin Stolterfoht, Dieter Neher, L. Jan Anton Koster Transport Layers Limit the Efficiency of Perovskite Solar Cells: an Experimental and Theoretical Study.
11:30 - 12:00 S8.5-O2	<u>Manuel García-Rosell</u> (<i>Departamento de Electrónica y Tecnología de Computadores, CITIC-UGR, Universidad de Granada, 18071 Granada, Spain</i>), Agustín Bou, Juan A. Jiménez-Tejada, Juan Bisquert, Pilar Lopez-Varo Influence of Ion Migration on the performance of the Selective Contact Heterojunctions in Perovskite Solar Cells
12:00 - 12:30 S8.5-O3	<u>Juan Jesus Gallardo</u> (<i>University of Cádiz</i>), Javier Navas, Fran Reyes-Perez, Teresa Aguilar, Rodrigo Alcántara, Concha Fernández-Lorenzo CsSnBr ₃ , a Lead-Free Perovskite with Photocatalytic Activity
12:30 - 14:30	Lunch
	joint session S7/S8 Room: Torremolinos DE
14:30 - 15:00 S7/S8-I1	<u>Filippo De Angelis</u> (<i>Computational Laboratory for Hybrid/Organic Photovoltaics (CLHYO), CNR-ISTM, Perugia, Italy</i>) Defect photophysics of metal-halide pero
15:00 - 15:30 S7/S8-I2	<u>Koichi Yamashita</u> (<i>Department of Chemical System Engineering, Graduate School of Engineering, The University of Tokyo</i>) Charge Separation and Charge Carrier Trapping of Lead Iodide Perovskites



15:30 - 16:00 S7/S8-I3	<u>Edoardo Mosconi</u> (<i>Computational Laboratory for Hybrid/Organic Photovoltaics (CLHYO), Istituto CNR di ScienzeTecnologie Molecolari (ISTM-CNR), Via Elce di Sotto 8, 06123, Perugia, Italy.</i>), García Espejo García Espejo, Filippo De Angelis First Principles Modeling of Mixed 2D/3D Organohalide Perovskites
16:00 - 16:30 S7/S8-I4	<u>Claudine Katan</u> (<i>Univ Rennes, ENSCR, INSA Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes) - UMR6226, F-35000 RENNES</i>), Boubacar Traore, Mikaël Képénékian, Laurent Pedesseau, Jean-Christophe Blancon, Wanyi Nie, Hsinhan Tsai, Sergei Tretiak, Constantinos Stoumpos, Mercouri Kanatzidis, Aditya Mohite, Jacky Even Halide Perovskites: Recent Advances in Optoelectronic Properties from Atomic Scale Modelling
PerMod S8.6 Chair: Claudio Quarti Room: Torremolinos C	
16:30 - 17:00 S8.6-I1	<u>Ursula Roethlisberger</u> (<i>Swiss Federal Institute of Technology, EPFL, ISIC, LCBC, CH-1015, Lausanne, Switzerland</i>), Paramvir Ahlawat, Michele Parrinello Modelling Nucleation and Growth of Lead Halide Perovskites
17:30 - 19:00	Poster Session

Poster Contribution

290	<u>Azimatu Seidu</u> (<i>Department of Applied Physics, Aalto University School of Science</i>), Lauri Himanen Coating Hybrid Perovskites: A Database-Driven Study
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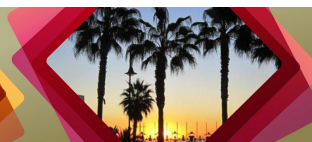
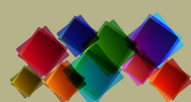
S9 Advanced PV Technologies and Concepts with New Functionalities

Torremolinos, Spain, 2018 October 22nd - 23rd

Conference Chairs: Joaquim Puigdollers and Alejandro Perez-Rodriguez

Conference Program

October 22nd - Day 1 (Monday)	
Plenary session 1 Chair: Mischa Bonn Room: Mediterraneo ABC	
09:00 - 09:30 1-K1	<u>Victor Klimov</u> (<i>Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA</i>) Colloidal Quantum Dot Lasing: Historical Perspective and Recent Progress
Plenary Session 2 Chair: Kevin Sivula Room: Torremolinos AB	
09:00 - 09:30 2-K1	<u>Yun Jeong Hwang</u> (<i>Korea Institute of Science and Technology (KIST)</i>), Byoun Koun Min, Hyeong-Suk Oh Electrochemical Conversion of CO ₂ toward Valuable Chemicals for Solar-to-Chemical Conversion Application
PVCon S9.1 Chair: Joaquim Puigdollers Room: Mediterraneo D	
09:30 - 10:00 S9.1-I1	<u>Jordi Martorell</u> (<i>ICFO-Institut de Ciències Fòniques, The Barcelona Institute of Science and Technology</i>) Novel Photonic Approaches to Enhance the Current or Voltage in Organic and Perovskite Solar Cells
10:00 - 10:30 S9.1-O1	<u>NEHA CHATURVEDI</u> (<i>King Abdullah University of Science and Technology (KAUST), Division of Physical Sciences and Engineering, Thuwal 23955-6900, Kingdom of Saudi Arabia</i>), Hanlin Hu, Nicola gasparini, Derya Baran, Aram Amassian, Iain MuCulloch High Speed Coating Method for Fabricating Organic Solar Cells with PCE>10%
10:30 - 11:00	Coffee Break
PVCon S9.2 Chair: Jordi Martorell Room: Mediterraneo D	
11:00 - 11:30 S9.2-I1	<u>Manfred Eich</u> (<i>Institute of Optical and Electronic Materials, Hamburg University of Technology, Eissendorfer Strasse 38, 21073 Hamburg, Germany</i>), P. Dyachenko, S. Lang, G. Shang, Q.Y. Nguyen, M. Chirumamilla, K. Knopp, G. Vaidhyanathan, S. Molesky, H. Renner, A. Yu Petrov, Z. Jacob, M. Störmer, T. Krekeler, M. Ritter, G. Schneider Nanomaterials for High Temperature Photonics
11:30 - 11:45	
11:45 - 12:00 S9.2-O1	<u>Moisés Garín</u> (<i>Universitat Politècnica de Catalunya</i>), Chen Jin, Trifon Trifonov, Ramón Alcubilla Silicon Millefeuille: Multiplying Silicon Wafers for Ultrathin Photovoltaics.
12:00 - 12:30 S9.2-I2	Gregg Scranton, Zunaid Omaid, <u>Luis Pazos-Outón</u> (<i>Electrical Engineering and Computer Sciences, University of California, Berkeley</i>), T. Patrick Xiao, Vidya Ganapati, Myles Steiner, Per Peterson, John Holzrichter, Eli Yablonovitch Reaching 28% Efficiency in Thermo-Photovoltaics
12:30 - 14:30	Lunch
PVCon S9.3 Chair: Luis Pazos Outon Room: Mediterraneo D	



14:30 - 15:00 S9.3-I1	<u>Seigo Ito</u> (<i>Department of Materials and Synchrotron Radiation Engineering, Graduate School of Engineering, University of Hyogo</i>) Studies of Tandem Solar Cells and Stability Issue of Perovskite Solar Cells
15:00 - 15:30 S9.3-O1	<u>Christian Jooss</u> (<i>Institute for Material Physics, University of Goettingen, Friedrich-Hund-Platz 1, D-37077 Goettingen, Germany</i>), Dirk Raiser, Benedikt Iffland, Mohsen Sotoudeh, Peter Blöchl, Michael Seibt, Tobias Meyer, Simone Techert, Birte Kressdorf, Patrick Peretzki Hot Polaron States with Nanosecond Lifetime in Manganite Perovskite Photovoltaic Junctions
15:30 - 16:00 S9.3-O2	<u>Nasim Tavakoli</u> (<i>Center for Nanophotonics, AMOLF, Science Park 104, 1098 XG Amsterdam, The Netherlands</i>), Esther Alarcon Llado Combining 1D and 2D waveguiding properties for ultrathin tandem solar cells
16:00 - 16:30 S9.3-O3	<u>Isaac Suárez</u> (<i>University of Valencia</i>) Wearable Amplifier-Photodetector System Based on PMMA/Perovskite Waveguides Integrated on a Wearable Nanocellulose Substrate
16:30 - 17:00 S9.3-O4	<u>Sebastián Murcia-López</u> (<i>Catalonia Institute for Energy Research, IREC. Jardins de les Dones de Negre 1, 08930 Sant Adrià de Besòs (Barcelona), Spain.</i>), Nina Carretero, Cristina Flox, Félix Urbain, Joan R. Morante, Teresa Andreu Integration of Adapted Thin-film Photovoltaics into Solar Vanadium Redox Flow Batteries for Energy Storage

October 23rd - Day 2 (Tuesday)

PVCon S9.4

Chair: Alejandro Perez-Rodriguez
Room: Mediterraneo D

09:00 - 09:30 S9.4-I1	<u>Guy Brammertz</u> (<i>Imec division IMOMEC (partner in Solliance & EnergyVille), Wetenschapspark 1, 3590 Diepenbeek, Belgium.</i>), Leo Choubrac, Thierry Kohl, Jessica deWild, Marc Meuris, Jef Poortmans, Bart Vermang Wide Band Gap Kesterite Absorbers for Tandem or Semi-transparent Solar Cells
09:30 - 10:00 S9.4-O1	Ignacio Becerril-Romero, Simón Lopez-Marino, Marcel Placidi, Moisés Espíndola-Rodríguez, Florian Oliva, Victor Izquierdo-Roca, Yudania Sánchez, <u>Xavier Alcobe</u> (<i>Centres Científics i Tecnològics (CCiTUB) de la Universitat de Barcelona, C/ Lluís Solé i Sabaris 1-3, 08028 Barcelona, Spain</i>), Edgardo Saucedo, Paul Pistor CZTSe Solar Cells Developed On Alternative Substrates for Advanced Applications
10:00 - 10:30 S9.4-I2	<u>Uli Würfel</u> (<i>Fraunhofer Institute for Solar Energy Systems (ISE), Heidenhofstraße 2, 79110 Freiburg, Germany</i>) Factors Determining the Electrode Selectivity in Solar Cells and their Impact on Device Performance

10:30 - 11:00 Coffee Break

PVCon S9.5

Chair: Guy Brammertz
Room: Mediterraneo D

11:00 - 11:30 S9.5-I1	<u>Marcel Placidi</u> (<i>Catalonia Institute for Energy Research (IREC), Jardins de les Dones de Negre 1, Sant Adrià del Besòs, 08930 Barcelona</i>) TCMs for Next Generation Thin Film Photovoltaics
11:30 - 11:45	
11:45 - 12:00 S9.5-O2	<u>EDUARD BAILO BOBÍ</u> (<i>Francisco Albero - FAE</i>), BEATRIZ MEDINA-RODRIGUEZ, MONICA COLINA, MIREIA BLANES, MARCEL PLACIDI, FRANCISCO RAMOS, EDGARDO SAUCEDO, ALBERT CIRERA, ALEJANDRO PEREZ Printing Based Processes for Low Cost CRM Free Sustainable Technologies on Ceramic Ecofriendly Substrates for BIPV Applications.
12:00 - 12:15 S9.5-O1	Pedro Vidal, Victor Izquierdo-Roca, Markus Neuschitzer, Edgardo Saucedo, Lorenzo Calvo-Barrio, <u>Tarig Jawhari</u> (<i>Centres Científics i Tecnològics (CCiTUB) de la Universitat de Barcelona, C/ Lluís Solé i Sabaris 1-3, 08028 Barcelona, Spain</i>), Alejandro Perez-Rodriguez Thin Film Sb ₂ (S,Se) ₃ Based Solar Cell: Emergent Technology Compatible with Ubiquitous Applications
12:30 - 14:30	Lunch

nanoGe Fall Meeting 2018 (FallMeeting18)

S4 Nanophotonics by Nanocrystals

Torremolinos, Spain, 2018 October 24th - 26th

Conference Chairs: Daniel Vanmaekelbergh and Zeger Hens

Conference Program

October 24th - Day 3 (Wednesday)	
Plenary session 3 Chair: Shannon Boettcher Room: Mediterraneo ABC	
09:00 - 09:30 3-K1	<u>Francesca Maria Toma</u> (<i>Chemical Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, California 94720, United States</i>) A New Portrait of Functional Complex Interfaces for Solar Fuel Devices
Plenary Session 4 Chair: David Egger Room: Mediterraneo DEF	
09:00 - 09:30 4-K1	<u>Vanessa Wood</u> (<i>Laboratory for Interfacial Chemistry, ETH Zurich</i>) Charge Transport in Nanocrystal Solids
NCPHOT S4.1 Chair: Daniel Vanmaekelbergh Room: Torremolinos AB	
09:30 - 10:00 S4.1-O1	<u>Darius Urbonas</u> (<i>IBM Research-Zurich, Säumerstrasse 4, 8803 Rüschlikon, Switzerland</i>), Thilo Stöferle, Fabio Scafirimuto, Rainer F. Mahrt Tunable Nanoscale defect Cavities for Exciton-Polariton Condensates at Room Temperature
10:00 - 10:30 S4.1-O2	<u>Vigneshwaran Chandrasekaran</u> (<i>Physics and Chemistry of Nanostructures, Ghent University, 9000 Ghent, Belgium</i>), Lorenzo Scarpelli, Francesco Masia, Dorian Dupont, Mickael D. Tessier, Pieter Geiregat, Iwan Moreels, Wolfgang Langbein, Zeger Hens Spectral Dynamics of Linearly Polarized Bright Exciton in InP/ZnSe Colloidal Quantum Dots
10:30 - 11:00	Coffee Break
NCPHOT S4.2 Chair: Marcus Scheele Room: Torremolinos AB	
11:00 - 11:30 S4.2-O1	<u>Efrat Lifshitz</u> (<i>Schulich Faculty of Chemistry, Russell Berrie Nanotechnology Institute, Solid State Institute, Technion, Haifa 32000</i>), Joanna Dehnel, Alyssa Kostadinov, Yahel Barak Spin Properties in II-VI and Perovskites Colloidal Quantum Dots
11:30 - 12:00 S4.2-I1	Gabriele Rainò, Michael Becker, Maryna Bodnarchuk, Rainer Mahrt, Maksym Kovalenko, <u>Thilo Stöferle</u> (<i>IBM Research – Zurich, Säumerstrasse 4, 8803 Rüschlikon, Switzerland</i>) Superfluorescence from Lead Halide Perovskite Quantum Dot Superlattices
12:00 - 12:30 S4.2-I2	<u>Wolfgang Langbein</u> (<i>Cardiff University, School of Physics and Astronomy</i>) Coherent Exciton Dynamics in Colloidal Quantum Dots
12:30 - 14:30	Lunch
NCPHOT S4.3 Chair: Efrat Lifshitz Room: Torremolinos AB	
14:30 - 15:00 S4.3-I1	Athmane Tadjine, <u>Delerue Christophe</u> (<i>IEMN, UMR-CNRS 8520, Villeneuve d'Ascq, France</i>) Theory of Optical Properties of 2D Semiconductor Nanocrystal Lattices

15:00 - 15:30 **Adam K. Budniak** (*Technion – Israel Institute of Technology*), Niall A. Killilea, Amir Abbas Yousefi Amin, Szymon S4.3-O1 J. Zelewski, Jan Kopaczek, Esty Ritov, Yaron Amouyal, Wolfgang Heiss, Robert Kudrawiec, Efrat Lifshitz
Investigation of CrPS4 in Bulk and Few-Layers Form

October 25th - Day 4 (Thursday)

NCPHOT S4.4

Chair: Zeger Hens

Room: Torremolinos AB

09:00 - 09:30

09:30 - 10:00

S4.4-O1

Michael A. Becker (*IBM Research – Zurich Research Laboratory, Säumerstrasse 4, 8803 Rüschlikon, Switzerland*), Roman Vaxenburg, Georgian Nedelcu, Loredana Protesescu, Andrew Shabaev, Peter Sercel, Michael J. Mehl, John G. Michopoulos, Samuel G. Lambrakos, Noam Bernstein, John L. Lyons, Maryna I. Bodnarchuk, Rainer F. Mahrt, Thilo Stoeferle, Maksym V. Kovalenko, David J. Norris, Gabriele Raino, Alexander L. Efros

Bright Triplet Emission from Lead Halide Perovskite Nanocrystals

10:00 - 10:30

S4.4-O2

RENU TOMAR (*Ghent university*), ADITYA KULKARNI, KAI CHEN, SHALINI SINGH, LAURENS SIEBBELES, JUSTIN HODGKISS, PIETER GEIREGAT, ZEGER HENS

A Quantitative Study of Optical Gain Mechanisms in Quasi-2D Solution Processable Materials

Plenary Session 5

Chair: Daniel Vanmaekelbergh

Room: Torremolinos AB

09:00 - 09:30

5-K1

Maksym Kovalenko (*Institute of Inorganic Chemistry, Department of Chemistry and Applied Bioscience, ETH Zurich, 8093 Zurich, Switzerland*)

Colloidal Nanocrystals of APbX₃ Perovskites [A=Cs⁺, CH₃NH₂⁺, X=Cl⁻, Br⁻, I⁻]: Surface Chemistry, Self-Assembly and Potential Applications

10:30 - 11:00

Coffee Break

NCPHOT S4.5

Chair: David Cheyns

Room: Torremolinos AB

11:00 - 11:30

S4.5-O1

Freddy Rabouw (*ETH Zürich*), Raphael Brechbühler, Patrik Rohner, Boris le Feber, Tim Prins, Dimos Poulikakos, David Norris

Probing Electromagnetic Modes at Optical Frequencies with Eu³⁺-Doped Nanocrystals

11:30 - 12:00

S4.5-O2

Bogdan Benin (*Institute of Inorganic Chemistry, Department of Chemistry and Applied Bioscience, ETH Zurich, 8093 Zurich, Switzerland*), Dmitry Dirin, Maksym Kovalenko

Highly Emissive Self-Trapped Excitons in Fully Inorganic Zero-Dimensional Tin Halides

12:00 - 12:30

S4.5-O3

Sotirios Christodoulou (*ICFO – The Institute of Photonic Sciences, Mediterranean Technology Park*), Francesco Di Stasio, Santanu Pradhan, Inigo Ramiro, Yu Bi, Aleksandros Stavrinas, Gerasimos Konstantatos

High Performance Optoelectronic Devices Based on Bright Perovskite Nanocrystals Synthesized at Room Temperature

12:30 - 14:30

Lunch

NCPHOT S4.6

Chair: Maksym Kovalenko

Room: Torremolinos AB

14:30 - 15:00

S4.6-O1

Shuchi Gupta (*The institute of photonic sciences, The Barcelona institute of science and technology, Av. Carl Friedrich Gauss 3, Castelldefels (Barcelona), Spain*), Stijn Goossens, Gabriele Navickaite, Carles Monasterio, Juan José Piqueras, Raúl Pérez, Gregory Burwell, Ivan Nikitskiy, Tania Lasanta, Teresa Galán, Eric Puma, Alba Centeno, Amaia Pesquera, Amaia Zurutuza, Frank Koppens, Gerasimos Konstantatos

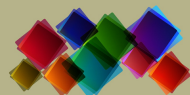
Colloidal Quantum Dots-Graphene based Broadband Photodetector

15:00 - 15:30

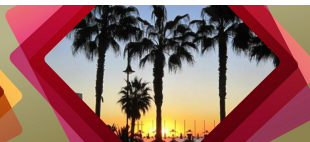
S4.6-O2

Marcus Scheele (*University of Tuebingen*)

Coupled Organic-Inorganic Nanostructures for Optical Switches



nanoGe Fall Meeting
Torremolinos-Spain
October 22-26, 2018



nanoGe

15:30 - 16:00 S4.6-O3	Santanu Pradhan (<i>1ICFO-Institut de Ciències Fòniques, The Barcelona Institute of Science and Technology, 08860 Castelldefels (Barcelona), Spain</i>), Francesco DiStasio, Yu Bi, Shuchi Gupta, Sotirios Christodoulou, Alexandros Stavrinadis, Gerasimos Konstantatos Highly Efficient PbS Colloidal Quantum Dot Based Infrared Light Emitting Diodes through Suprananocrystalline Matrix Engineering
16:00 - 16:30 S4.6-I2	Emmanuel Ihuillier (<i>Sorbonne Universités, UPMC Univ. Paris 06, CNRS-UMR 7588, Institut des NanoSciences de Paris, 4 place Jussieu, 75005 Paris, France</i>), Adrien Robin, Clement Livache, Bertille Martinez, Nicolas goubet Intraband transition in narrow band gap nanocrystals
16:30 - 17:00 S4.6-I1	David Cheyns (<i>Imec vzw</i>), Epimitheas Georgitzikis, Pawel Malinowski Quantum Dot Based Imagers: the Route to Wafer Scale Production

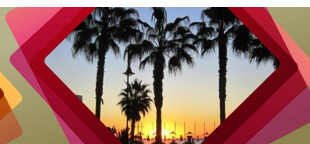
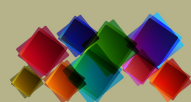
17:30 - 19:00 **Poster session**

October 26th - Day 5 (Friday)

Plenary session 6

Chair: Sascha Sadewasser
Room: Torremolinos AB

09:00 - 09:30 6-K1	Marina Leite (<i>University of Maryland</i>) Probing Solar Cells at the Nanoscale through Real-Time Functional Imaging
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Poster Contribution

213	<u>Federico Montanarella</u> (<i>Universiteit Utrecht</i>), Darius Urbonas, Luke Chadwick, Thilo Stoferle, Patrick Baesjou, Rainer Mahrt, Alfons van Blaaderen, Daniel Vanmaekelbergh Room Temperature Whispering Gallery Modes Lasing in Self-Assembled Nanocrystal Supraparticles
288	<u>Rasmus Himstedt</u> (<i>Institute of Physical Chemistry and Electrochemistry, Leibniz Universität Hannover, Germany</i>), Dominik Hinrichs, Dirk Dorfs Light Extinction Properties of Plasmonic Nickel Sulfide Nanostructures
296	<u>Lukas Elsinger</u> (<i>Photonics Research Group, Ghent University – imec, 9052 Ghent, Belgium</i>), Ronan Gourgues, Iman E. Zadeh, Jorick Maes, Vigneshwaran Chandrasekaran, Pieter Geiregat, Gabriele Bulgarini, Val Zwiller, Zeger Hens, Dries Van Thourhout On-chip Spectroscopy of PbS/CdS Colloidal QDs Integrated into Plasmonic Gap Antennas using superconducting Nanowire Detectors on a Silicon Nitride Photonic Platform
298	<u>Annalisa Brodu</u> (<i>Debye Institute for Nanomaterials Science, Utrecht University, The Netherlands</i>), Mariana V. Ballottin, Jonathan Buhot, Dorian Dupont, Zeger Hens, Freddy T. Rabouw, Peter C. M. Christianen, Celso de Mello Donega, Daniel Vanmaekelbergh Exciton Fine-Structure of InP (core)/Cd, Zn, S, Se (shell) QDs: Bright and Dark States and the Role of Phonons
302	Oleksandr Mashkov, Mykhailo Sytnyk, <u>Wolfgang Heiss</u> (<i>Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)</i>) Organic Pigments Nanoarchitectures for Heavy Metal Removal from Water
303	<u>Niall Killilea</u> (<i>Institute of Materials for Electronics and Energy Technology (i-MEET), Friedrich-Alexander Universität Erlangen-Nürnberg, Martensstr. 7, 91058 Erlangen, Germany</i>), Mingjian Wu, Mykhailo Sytnyk, Amir Amin, Erdmann Spieker, Wolfgang Heiss Bulk-like PbS Nanocrystals with Epitaxial Ligands Providing Photodetection Beyond 3000nm
307	<u>Ivo Tanghe</u> (<i>Photonics Research Group, Ghent University – imec, 9052 Ghent, Belgium</i>), Lukas Elsinger, Suzanne Bisschop, Zeger Hens, Pieter Geiregat, Dries Van Thourhout Continuous Wave On-Chip Lasers Enabled by Colloidal Quantum Dots
310	<u>Joanna Dehnel</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>), Yahel Barak, Efrat Lifshitz Optically Detected Magnetic Resonance of Mn ²⁺ doped CdSe/CdS Core-Shell Seeded Nanorods
324	<u>Nayyera Mahmoud</u> (<i>Photonics Research Group, Ghent University, Ghent, Belgium</i>), Willem Walravens, Jakob Kuhs, Christophe Detavernier, Zeger Hens, Gunther Roelkens Microtransfer Printing Of Al ₂ O ₃ -Passivated SWIR-PbS QDs Photoconductors

nanoGe Fall Meeting 2018 (FallMeeting18)

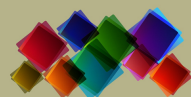
S2 Light Driven Water Splitting

Torremolinos, Spain, 2018 October 24th - 26th

Conference Chairs: Wolfram Jaegermann and Bernhard Kaiser

Conference Program

October 24th - Day 3 (Wednesday)	
WatSpl S2.1 Chair: Christina Scheu Room: Mediterraneo ABC	
14:30 - 15:00 S2.1-I1	Martin Rohloff, Björn Anke, Spark Zhang, Christina Scheu, Martin Lerch, <u>Anna Fischer</u> (<i>University Freiburg, IAAC, Germany</i>) Improving BiVO ₄ thin Film Photoanodes for Light-Induced Water Oxidation
15:00 - 15:15 S2.1-O1	<u>Luis I. Granone</u> (<i>Institute of Technical Chemistry, Gottfried Wilhelm Leibniz University Hannover, Callinstrasse 3, D-30167 Hannover, Germany</i>), Ralf Dillert, Detlef W. Bahnemann Effect of the Degree of Inversion on the Photocatalytic Activity of Spinel ZnFe ₂ O ₄
15:15 - 15:30 S2.1-O2	<u>Hamidreza Hajiyani</u> (<i>Department of Physics, Theoretical Physics and Center of Nanointegration (CENIDE), Universität Duisburg-Essen, Lotharstraße 1, 47057 Duisburg, Germany</i>), Alexander G. Hufnagel, Siyuan Zhang, Thomas Bein, Dina Fattakhova-Rohlfing, Christina Scheu, Rossitza Pentcheva Origin of Enhanced Efficiency of Tin-doped Ultrathin Hematite Photoanodes for Water-Splitting
15:30 - 15:45 S2.1-O3	<u>Sönke Müller</u> (<i>Institute for Solar Fuels, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany</i>), James Hirst, Hannes Hempel, Daniel Peeters, Alexander Sadlo, Oliver Mendoza, Dariusz Mitoraj, Dennis Friedrich, Anjana Devi, Radim Beranek, Rainer Eichberger The Transport Pathways of Charge Carriers in CuWO ₄ for Photocatalysis
15:45 - 16:00	Discussion
16:00 - 16:30 S2.1-I2	<u>Vladimir Smirnov</u> (<i>IEK5-Photovoltaics, Forschungszentrum Jülich, 52425 Jülich, Germany</i>), Katharina Welter Multijunction Si Solar Cells for Integrated Photo-Electrochemical Devices
16:30 - 16:45 S2.1-O4	<u>Jens Melder</u> (<i>Institut für Anorganische und Analytische Chemie und Freiburger Materialforschungszentrum (FMF), Albert-Ludwigs-Universität Freiburg, Albertstraße 21, 79104 Freiburg</i>), Stefan Mebs, Philipp Heizmann, Holger Dau, Philipp Kurz Electrochemical Water Oxidation by MnOx/CFP – pH Dependence of the Catalytic Activity
16:45 - 17:00 S2.1-O5	<u>Alfred Ludwig</u> (<i>Institute for Materials, Ruhr-Universität Bochum, D-44801 Bochum, Germany</i>), Mona Nowak, Swati Kumari, Helge S. Stein, Ramona Gutkowski, Joao Junqueira, Wolfgang Schuhmann Combinatorial Fabrication and High-Throughput Characterization of Thin Film Metal Oxide Libraries for Solar water Splitting
October 25th - Day 4 (Thursday)	
Plenary Session 5 Chair: Daniel Vanmaekelbergh Room: Torremolinos AB	
09:00 - 09:30 5-K1	<u>Maksym Kovalenko</u> (<i>Institute of Inorganic Chemistry, Department of Chemistry and Applied Bioscience, ETH Zurich, 8093 Zurich, Switzerland</i>) Colloidal Nanocrystals of APbX ₃ Perovskites [A=Cs ⁺ , CH ₃ NH ₂) ₂ ⁺ , X=Cl ⁻ , Br ⁻ , I ⁻]: Surface Chemistry, Self-Assembly and Potential Applications
WatSpl S2.2 Chair: Laurence Peter Room: Mediterraneo ABC	



nanoGe Fall Meeting

Torremolinos-Spain

October 22-26, 2018



nanoGe

09:00 - 09:30 S2.2-I1	Sophia Betzler, Thomas Gänsler, Katharina Hengge, Anna Frank, Siyuan Zhang, <u>Christina Scheu</u> (<i>Max-Planck-Institut für Eisenforschung Düsseldorf</i>) Nb ₃ O ₇ OH Nanoarrays for Photocatalytic Water Splitting: Defects, Dopants, and Stability of co-Catalysts
09:30 - 09:45 S2.2-O3	<u>Emanuel Ronge</u> (<i>University of Goettingen</i>), Vladimir Roddatis, Jonas Ohms, Philipp Kurz, Christian Jooss In-Situ Transmission Electron Microscopy Analysis of a Calcium-Birnessite Water-Oxidation Catalyst
09:45 - 10:00 S2.2-O4	<u>Thorben Petersen</u> (<i>Carl von Ossietzky University Oldenburg</i>), Thorsten Klüner Quantum Chemical Investigation of Water Splitting on ideal TiO ₂ -Anatase(101)
10:00 - 10:15 S2.2-O1	Sanjay Mathur, Lasse Jürgensen, Yakup Gönüllü, Jennifer Leduc, <u>Thomas Fischer</u> (<i>Department of Chemistry, Inorganic Chemistry, University of Cologne</i>) Oxide Bilayers as High Efficiency Water Oxidation Catalysts through Electronically Coupled Phase Boundaries
10:15 - 10:30 S2.2-O2	<u>Sasa Lukic</u> (<i>Nanoparticle Process Technology (NPPT), Institute for Combustion and Gas Dynamics, University of Duisburg-Essen, 47057 Duisburg, Germany</i>), Jasper Menze, Martin Muhler, Markus Winterer Generation of Zinc-Gallium-Oxynitride Nanoparticles from CVS Powders for Photocatalytic Water Splitting
10:30 - 11:00	Coffee Break
	WatSpl S2.3 Chair: Bruce Parkinson Room: Mediterraneo ABC
11:00 - 11:30 S2.3-I1	Kristin Kirchberg, <u>Roland Marschall</u> (<i>Justus Liebig University Giessen</i>) Nanostructured Spinel Ferrite Materials for Photoelectrochemical Water Splitting
11:30 - 11:45 S2.3-O1	<u>Hyo-Jin Ahn</u> (<i>University of Erlangen-Nürnberg</i>), Anandarup Goswami, Francesca Riboni, Stepan Kment, Alberto Naldoni, Radek Zboril, Patrik Schmuki A Strategy to Decrease the High Onset Potential of Hematite Photoanodes by Gradient Doping and Decoration with Zn-Co Layered Double Hydroxide
11:45 - 12:00 S2.3-O2	<u>Hong Nhan Nong</u> (<i>Dept. of Chemistry, Technical University Berlin, Strasse des 17. Juni 124, TC 03, 10623 Berlin, Germany</i>), Tobias Reier, Paul Paciok, Detre Teschner, Marc Heggen, Valeri Petkov, Robert Schlögl, Travis Jones, Peter Strasser Operando Studies of Hole-Doped IrNiOx core-shell electrocatalysts for Water Oxidation in acidic Environment
12:00 - 12:15 S2.3-O3	<u>Maria Eugenia Toimil-Molares</u> (<i>GSI Helmholtz Centre for Heavy Ion Research</i>), Florent Yang, Dimitri Korjakin, Christina Trautmann, Christopher Schröck Photoelectrochemical Performance of Arrays of Cu ₂ O/TiO ₂ and Au/Cu ₂ O/TiO ₂ Nanowires Fabricated by Electrodeposition
12:15 - 12:30 S2.3-O4	<u>Cora Bubeck</u> (<i>University of Stuttgart, Institute for Material Science, Heisenbergstraße 3, 70569 Stuttgart, Germany</i>), Marc Widenmeyer, Gunther Richter, Mauro Coduri, Eduardo Salas Colera, Songhak Yoon, Frank Osterloh, Anke Weidenkaff Perovskite-type Oxynitrides LaTaO ₂ N and LaTaON ₂ – Synthetic Strategies
12:30 - 14:30	Lunch
14:30 - 16:00	Internal Project Meeting
	WatSpl S2.4 Chair: Krishnan Rajeshwar Room: Mediterraneo ABC
16:00 - 16:30 S2.4-I1	<u>Matthias M. May</u> (<i>University of Heidelberg</i>) Challenges and Opportunities of Water Splitting with Multi-Junction Solar Absorbers
16:30 - 16:45 S2.4-O1	<u>Laurent Pedesseau</u> (<i>Univ Rennes, INSA Rennes, CNRS, Institut FOTON - UMR6082, F-35000 RENNES</i>), Ida Lucci, Simon Charbonnier, Maxime Vallet, Pascal Turban, Yoan Leger, Tony Rohel, Nicolas Bertru, Antoine Létoublon, Jean-Baptiste Rodriguez, Laurent Cerutti, Eric Tournié, Anne Ponchet, Gilles Patriarche, Charles Cornet GaP Template on Si for Solar Water Splitting: Surface Energy Engineering

16:45 - 17:00 **Peter Cendula** (*University of Zilina*), Matthew T. Mayer, Jingshan Luo, Linfeng Pan, Michael Grätzel
 S2.4-O2 Elucidation of Photovoltage Enhancements and Charge Transport in Multijunction Cu₂O Photocathode through Semiconductor Simulations

17:30 - 19:00 **Poster session**

October 26th - Day 5 (Friday)

Plenary session 6

Chair: Sascha Sadewasser
 Room: Torremolinos AB

09:00 - 09:30 **Marina Leite** (*University of Maryland*)
 6-K1 Probing Solar Cells at the Nanoscale through Real-Time Functional Imaging

WatSpl S2.5

Chair: Roland Marschall
 Room: Mediterraneo ABC

09:30 - 10:00 **Laurence Peter** (*Department of Chemistry, University of Bath*), - Gurudayal, Lydia Helena Wong, Fatwa Abdi
 S2.5-O1 Understanding the Role of Nanostructuring in Photoelectrode Performance for Light-Driven Water Splitting

10:00 - 10:15 **Shababa Selim** (*Imperial College London, Department of Chemistry, South Kensington Campus, London, SW7*
 S2.5-O2 2AZ), Laia Francas, Camilo Mesa, Andreas Kafizas, Dongho Lee, Kyoung-Shin Choi, James R. Durrant
 Investigating the Influence of Nanostructuring on Photoanode Performance

10:15 - 10:30 **Fanxing Xi** (*Helmholtz Zentrum Berlin für Materialien und Energie GmbH*), Peter Bogdanoff, Sebastian Fiechter
 S2.5-O3 Activation of amorphous MoS_x as a hydrogen evolving catalyst in aqueous electrolysis

WatSpl S2.6

Chair: Matthias May
 Room: Mediterraneo ABC

11:00 - 11:30 **Krishnan Rajeshwar** (*The University of Texas at Arlington*)
 S2.6-O1 New Families of Ternary Rare Earth Chalcogenides for Photoelectrochemical Applications

11:30 - 11:45 **Wolfgang Schuhmann** (*Analytical Chemistry-Center for Electrochemical Sciences (CES), Ruhr-Universität*
 S2.6-O2 *Bochum, D-44801 Bochum, Germany*), Ramona Gutkowski, Joao Junqueira, Tim Bobrowski, Olga Krysiak
 Improving the Photoelectrocatalytic Activity of Metal-Doped BiVO₄-Based Photoabsorbers by Means of Oxygen Evolution Co-Catalysts

11:45 - 12:00 **Sixto Gimenez Julia** (*Institute of Advanced Materials (INAM), Universitat Jaume I, 12071 Castelló, Spain*), Miguel
 S2.6-O3 García-Tecedor, Drialy Cardenas-Moscoso, Roser Fernández-Climent
 Water oxidation with metal oxide semiconductor materials

12:00 - 12:30 **Bruce Parkinson** (*Department of Chemistry, University of Wyoming, Laramie, WY, USA*)
 S2.6-O4 The Past, Present and Future of Solar Fuels

Poster Contribution

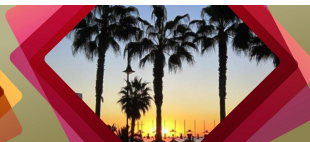
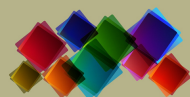
032 **Jonathan Kampmann** (*Ludwig-Maximilians-Universität (LMU) München*), Torben Sick, Alexander Hufnagel, Ilina
 Kondofersky, Markus Döblinger, Kristina Peters, Daniel Böhm, Dina Fattakhova-Rohlfing, Thomas Bein
 Conjugated 2D Covalent Organic Framework Thin Films as novel Absorber Material for Photoelectrochemical Hydrogen Evolution

037 **Dennis Zywitzki** (*Inorganic Materials Chemistry, Ruhr-University Bochum, 44801 Bochum, Germany*), Dereje Taffa, Jiyeon
 Kim, Michael Wark, Radim Beranek, Anjana Devi
 Vapor Phase Deposited Cobalt Oxide: A Highly Versatile Material System for Photoelectrochemical Water Splitting

045 **Katharina Welter** (*Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research – 5 Photovoltaics, 52425*
Jülich (Germany)), Niloofar Hamzelui, Vladimir Smirnov, Jan-Philipp Becker, Wolfram Jaegermann, Friedhelm Finger
 Catalysts from Earth Abundant Materials in a Scalable, Stand-Alone Photovoltaic-Electrochemical Module for Solar Water Splitting

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| 048 | <p><u>Ting Zhang</u> (<i>Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, Campus UAB, Bellaterra, 08193 Barcelona, Spain</i>), PengYi Tang, JunShan Li, ZhiShan Luo, Yong Zuo, JunFeng Liu, Jordi Llorca, Andreu Cabot, Jordi Arbiol</p> <p>NiSn Bimetallic Nanoparticles as Stable Electrocatalysts for Methanol Oxidation Reaction</p> |
| 053 | <p><u>Thomas Teusch</u> (<i>Carl von Ossietzky University Oldenburg</i>), Thorsten Klüner</p> <p>Adsorption and Dissociation of Water on Tungsten Trioxide (001)</p> |
| 057 | <p><u>Dereje Taffa</u> (<i>Institute of Chemistry, Chemical Technology 1, Carl von Ossietzky University Oldenburg, Carl-von-Ossietzky-Str. 9-11, 26129 Oldenburg, Germany</i>), Sven Warfsmann, Michael Wark</p> <p>Stoichiometrically Varied Electrodeposited Ferrite Films for Photoelectrocatalytic Oxidation of Water</p> |
| 063 | <p><u>Swati Kumari</u> (<i>Chair for MEMS Materials, Institute for Materials, Ruhr-Universität Bochum</i>), João R. C. Junqueira, Ramona Gutkowski, Aleksander Kostka, Katharina Hengge, Mona Nowak, Christina Scheu, Wolfgang Schuhmann, Alfred Ludwig</p> <p>Investigation of Vanadate-Metal-Oxide Thin Film Systems for Solar Water Splitting</p> |
| 072 | <p>Hamidreza Hajiyani, <u>Rossitza Pentcheva</u> (<i>Department of Physics, University of Duisburg-Essen, Germany</i>)</p> <p>Role of surface orientation, termination and composition on the activity of $\text{Co}_x\text{Ni}_{1-x}\text{Fe}_2\text{O}_4$ as an anode material for OER: insights from DFT+U calculations</p> |
| 101 | <p><u>João Ricardo Coelho Junqueira</u> (<i>Analytical Chemistry – Center for Electrochemical Sciences (CES), Ruhr-Universität Bochum, Universitätsstr. 150, D-44780 Bochum, Germany</i>), Tim Bobrowski, Olga Anna Krysiak, Ramona Gutkowski, Wolfgang Schuhmann</p> <p>A Simple Method for Preparation and Optimisation of Mo-Modified BiVO_4 Photoabsorbers and the Influence of Oxygen Evolution Catalyst Addition on the PEC Performance</p> |
| 102 | <p><u>Iwona Grądzka</u> (<i>Faculty of Physics, Adam Mickiewicz University in Poznań, Umultowska 85, 61-614 Poznań, Poland</i>), Mateusz Gierszewski, Marcin Ziólek</p> <p>Studies of Charge Transfers on TiO_2 Surface Sensitized with Ruthenium Complexes in Light-Driven Water Splitting Systems</p> |
| 113 | <p><u>Prince Bassi</u> (<i>Institute for Solar Fuels, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany</i>), Sebastian Fiechter</p> <p>Accessing the Performance of Fe_2TiO_5 Based Photoelectrocatalyst Films Deposited through Different Synthesis Routes</p> |
| 121 | <p><u>Siyuan Zhang</u> (<i>Max-Planck-Institut für Eisenforschung GmbH, Max-Planck-Straße 1, 40237 Düsseldorf, Germany</i>), Leo Diehl, Bettina Lotsch, Christina Scheu</p> <p>NiOx Cocatalysts on Nanosheets for Photocatalytic Water Splitting</p> |
| 216 | <p><u>Martin Rohloff</u> (<i>Institut für Anorganische und Analytische Chemie und Freiburger Materialforschungszentrum (FMF), Albert-Ludwigs-Universität Freiburg, Albertstraße 21, 79104 Freiburg</i>), Björn Anke, Anna C. Ulpe, Thomas Bredow, Martin Lerch, Anna Fischer</p> <p>Fluorinated BiVO_4 Powder and BiVO_4 Thin Films – Fluorine Incorporation Yields Improved Light-Induced Water Oxidation Performance</p> |
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| 244 | <p><u>Katarzyna Skorupska</u> (<i>Department of Inorganic Chemistry, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Faradayweg 4-6, Berlin, 14195, Germany</i>), Travis E. Jones, Rik Mom, Detre Teschner, Michael Hävecker, Thomas Lunkenbein, Jens Melder, Philipp Kurz, Cheng-Hao Chuang, Axel Knop-Gericke, Robert Robert Schlögl</p> <p>Approaches to In-Situ Measurements of Manganese Oxides Under OER</p> |
| 253 | <p><u>Francesca Maria Toma</u> (<i>Joint Center for Artificial Photosynthesis and Chemical Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA</i>), Guiji Liu</p> <p>Accelerated Discovery of Functional Light Absorber/Catalyst Interfaces</p> |
| 269 | <p><u>Hoang Phi Tran</u> (<i>AK Strasser, TU Berlin</i>)</p> <p>Influence of Doped Tin Oxide Support on the Formation, Stability and Activity of Core – Shell Nanoparticles $\text{IrCo}@\text{IrO}_x$ Catalyst for Water Splitting.</p> |

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| 276 | <p><u>Moritz Kölbach</u> (<i>Electrochemistry, Electrocatalysts, Water oxidation, Manganese oxide, Cobalt oxide, Electrodeposition, Solar fuels</i>), Sebastian Fiechter, Peter Bogdanoff
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| 280 | <p><u>natav yatom</u> (<i>Department of Materials Science and Engineering, Technion – Israel Institute of Technology, Haifa 3200003, Israel</i>), Maytal Caspary Toroker
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| 282 | <p><u>Céline Steinert</u> (<i>Institute of Material Science, Technische Universität Darmstadt, 64287 Darmstadt, Germany</i>), Sven Tengeler, Bernhard Kaiser, Wolfram Jaegermann
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| 283 | <p><u>Thorsten Cottre</u> (<i>Institute of Material Science, Technische Universität Darmstadt, 64287 Darmstadt, Germany</i>), Melanie Kranz, Katharina Welter, Emanuel Ronge, Vladimir Smirnov, Friedhelm Finger, Christian Jooss, Bernhard Kaiser, Wolfram Jaegermann
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| 284 | <p><u>Marc Widenmeyer</u> (<i>University of Stuttgart, Institute for Material Science, Heisenbergstraße 3, 70569 Stuttgart, Germany</i>), Cora Bubeck, Alexandra T. De Denko, Frank Osterloh, Songhak Yoon, Anke Weidenkaff
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| 286 | <p><u>Daniel Böhm</u> (<i>Department of Chemistry and Center for NanoScience (CeNS), University of Munich (LMU), Butenandtstraße 5-13 (E), 81377 Munich, Germany</i>), Michael Beetz, Christopher Kutz, Dina Fattakhova-Rohlfing, Thomas Bein
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| 293 | <p>Kristin Kirchberg, <u>Roland Marschall</u> (<i>Justus Liebig University Giessen</i>)
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| 306 | <p><u>Emanuel Ronge</u> (<i>Institute for Material Physics, University of Goettingen, Friedrich-Hund-Platz 1, D-37077 Goettingen, Germany</i>), Natalie Ottinger, Thorsten Cottre, Katharina Welter, Vladimir Roddatis, Vladimir Smirnov, Friedhelm Finger, Bernhard Kaiser, Wolfram Jaegermann, Christian Jooss
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| 311 | <p><u>Prince Saurabh Bassi</u> (<i>Institute for Solar Fuels, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany</i>), Bennet Wildenauer, Sebastian Fiechter
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| 319 | <p><u>Young Been Kim</u> (<i>School of Advanced Materials Science and Engineering, Sungkyunkwan University, Republic of Korea</i>), Joo Sung Kim, Dong Su Kim, Young Dae Yun, Hyung Koun Cho
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| 321 | <u>Dong Su Kim</u> (<i>School of Advanced Materials Science and Engineering, Sungkyunkwan University</i>), Young Dae Yun, Joo Sung Kim, Young Been Kim, Hyung Koun Cho
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| 327 | <u>Luis Granone</u> (<i>Institute of Technical Chemistry, Gottfried Wilhelm Leibniz University Hannover, Callinstrasse 3, D-30167 Hannover, Germany</i>), Ralf Dillert, Detlef Bahnemann
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| 329 | <u>Florian Neuberger</u> (<i>Eduard-Zintl-Institut für Anorganische und Physikalische Chemie, Technische Universität Darmstadt, Alarich-Weiss-Straße 8, 64287 Darmstadt, Germany</i>), Thorsten Cottre, Bernhard Kaiser, Wolfram Jaegermann, Rolf Schäfer
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| 333 | Radim Beranek, <u>Dariusz Mitoraj</u> (<i>Institute of Electrochemistry, Ulm University, Albert-Einstein-Allee 47, 89069 Ulm, Germany</i>)
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| 336 | <u>Lasse Jürgensen</u> (<i>Department of Chemistry, Inorganic Chemistry, University of Cologne</i>), Jennifer Leduc, Alexander Möllmann, Thomas Fischer, Sanjay Mathur
Single-Source Precursors for Gas Phase Deposition of Catalytic Coatings for Water Splitting Applications |
| 345 | <u>Thomas Schedel-Niedrig</u> (<i>Institut für Nanospektroskopie/Nanospectroscopy Albert-Einstein-Str. 15</i>), Anahita Azarpira, Michael Lublow, Hans-Joachim Lewerenz
Sustained Water Oxidation by Direct Electrosynthesis of Ultrathin Organic Protection Films on Silicon |

nanoGe Fall Meeting 2018 (FallMeeting18)

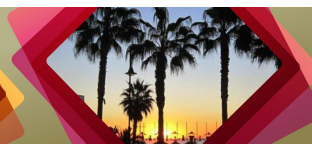
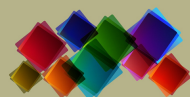
S6 Solution-based Two-dimensional Nanomaterials Sol2D

Torremolinos, Spain, 2018 October 24th - 26th

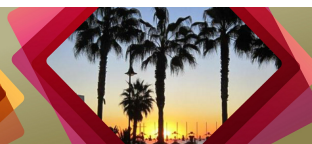
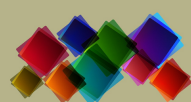
Conference Chairs: Christophe Delerue, Sandrine Ithurria and Christian Klinke

Conference Program

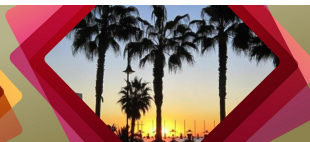
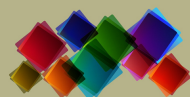
October 24th - Day 3 (Wednesday)	
Sol2D S6.1 Chair: Christian Klinke Room: Torremolinos DE	
14:30 - 15:00 S6.1-I1	<u>David Norris</u> (<i>Optical Materials Engineering Laboratory, ETH Zürich, Swiss</i>) The Growth Mechanism of Semiconductor Nanoplatelets
15:00 - 15:30 S6.1-I2	<u>Efrat Lifshitz</u> (<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>) Magneto-Optical Properties of Two-Dimensional Semiconductors: Transition Metal Phosphorous Trichalcogenides, Indium Chalcogenides and Magnetically Doped Colloidal Nanoplatelets
15:30 - 16:00 S6.1-I3	<u>Alexander Achtstein</u> (<i>Technical University of Berlin</i>), Riccardo Scott, Jan Heckmann, Anatol Prudnikau, Artsiom Antanovich, Nina Owschmikow, Nicolai Grosse, Mikhail Artemyev, Ulrike Woggon, Juan Climente Tuning the Photonic Properties of Colloidal Quantum Wells
16:00 - 16:30 S6.1-I4	<u>Hilmi Volkan Demir</u> (<i>Nanyang Technological University (NTU), Singapore</i>) Colloidal Photonics of Atomically Flat 2D Nanocrystals
16:30 - 17:00 S6.1-I5	<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 Synthesis and Optical Spectroscopy of Colloidal PbS Nanosheets
October 25th - Day 4 (Thursday)	
Plenary Session 5 Chair: Daniel Vanmaekelbergh Room: Torremolinos AB	
09:00 - 09:30 5-K1	<u>Maksym Kovalenko</u> (<i>Institute of Inorganic Chemistry, Department of Chemistry and Applied Bioscience, ETH Zurich, 8093 Zurich, Switzerland</i>) 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 Room: Torremolinos DE	
09:30 - 10:00 S6.2-O1	<u>Alf Mews</u> (<i>Institute of Physical Chemistry, University of Hamburg</i>), Monika Kobylinski, Charlotte Ruhmlieb, Vi Pham, Jan Siebels, Andreas Kolditz Synthesis and Electrical Properties of Photoactive Two Dimensional SnS Nanosheets
10:00 - 10:30 S6.2-I1	<u>William Buhro</u> (<i>Department of Chemistry, Washington University, St. Louis, MO 63119, USA</i>) 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 Room: Torremolinos DE
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 Lübckemann, 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>4Optical 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 Room: Torremolinos AB
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 Room: Torremolinos DE
09:00 - 09:15	<u>Philip Schäfer</u> (<i>neaspec GmbH</i>)
S6.5-O3	Scanning near-field optical microscopy and spectroscopy elucidates growth characteristics and free charge carrier distributions in nano-platelets with 10 nm spatial resolution
09:15 - 09:30	<u>Fu Li</u> (<i>Institute of Physical Chemistry, University of Hamburg, 20146 Hamburg, Germany</i>), Mohammad Mehdi
S6.5-O4	Ramin Moayed, Christian Klinke
	Shape and Size Control of the Synthesis of 2D Tin Sulfide (SnS) Nanosheets and Electronic Application
09:30 - 10:00	<u>Laurens Siebbeles</u> (<i>Opto-electronic materials section, Department of Chemical Engineering, Faculty of Applied</i>
S6.5-I1	<i>Sciences, Delft University of Technology</i>)
	Ultrafast Dynamics of Charge Carriers and Excitons in 2D Metal Chalcogenide Materials



10:00 - 10:15	Bas Salzmann (<i>Universiteit Utrecht</i>), Christiaan Post, Daniel Vanmaekelbergh
S6.5-O1	CdSe Nanorings: Synthesis and Opto-Electronic Properties
10:15 - 10:30	Joep peters (<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 Room: Torremolinos DE	
11:00 - 11:30	Benoit Mahler (<i>ILM - Institut Lumière Matière, CNRS</i>)
S6.6-I1	Colloidal Synthesis of WS ₂ Nanosheets: Chemical Control of Morphology and Crystal Structure.
11:30 - 11:45	Pengshang Zhou (<i>Physics and Chemistry of Nanostructures, Ghent University, 9000 Ghent, Belgium</i>), Shalini
S6.6-O1	Singh, Pieter Schiettecatte, Zeger Hens Synthesis of Colloidal Tungsten Diselenide (WSe ₂) Nanocrystals by Hot Injection Method
11:45 - 12:00	Bruce Parkinson (<i>Department of Chemistry, University of Wyoming, Laramie, WY, USA</i>), John Hoberg
S6.6-O2	New 2D Nanoporous Covalent Organic Framework Materials with Functionalized
12:00 - 12:30	Prabhuraj Balakrishnan, Matthew J Fong (<i>Lancaster University, UK</i>), Christopher S woodhead, Ramon Bernardo
S6.6-O3	Gavito, Robert J Young Efficient Light Emission from MoS ₂ Flakes by in-solution Superacid Treatment
12:30 - 14:30	Lunch
Sol2D S6.7 Chair: Sandrine Ithurria Room: Torremolinos DE	
14:30 - 15:00	Marion Dufour (<i>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</i>), Violette Steinmetz, Eva
S6.7-O1	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	Jannika Lauth (<i>Carl von Ossietzky University Oldenburg</i>), Michele Failla, Francisco Manteiga Vázquez, Qianli
S6.7-O2	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	Celso de Mello Donega (<i>Universiteit Utrecht</i>), Anne Berends, Ward van der Stam
S6.7-I1	Ultrathin Colloidal Binary and Ternary Copper Chalcogenide Nanosheets
16:00 - 16:15	Alejandro Molina-Sánchez (<i>Institute of Materials Science of the University of Valencia (ICMUV)</i>)
S6.7-O3	Excitonic States in Semiconducting Two-Dimensional Perovskites
16:15 - 16:30	Aniket S. Mule (<i>Optical Materials Engineering Laboratory, ETH Zurich, 8092 Zurich, Switzerland</i>), Simon F.
S6.7-O4	Solari, Aurelio A. Rossinelli, Philippe N. Knüsel, Sergio Mazzotti, Marianne Aellen, David J. Norris Synthesis and Isolation of Discrete-Growing CdSe Nanocrystals



Poster Contribution

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 Salzmänn, Daphne Dekker, Matt Peerlings, Andries Meijerink Spectral Line

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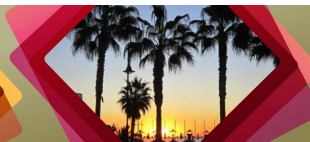
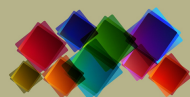
S10 Scanning Probe Microscopy for Energy Applications

Torremolinos, Spain, 2018 October 25th - 26th

Conference Chairs: Sascha Sadewasser and Rüdiger Berger

Conference Program

October 25th - Day 4 (Thursday)	
Plenary Session 5 Chair: Daniel Vanmaekelbergh Room: Torremolinos AB	
09:00 - 09:30 5-K1	<u>Maksym Kovalenko</u> (<i>Institute of Inorganic Chemistry, Department of Chemistry and Applied Bioscience, ETH Zurich, 8093 Zurich, Switzerland</i>) Colloidal Nanocrystals of APbX ₃ Perovskites [A=Cs ⁺ , CH(NH ₂) ₂ ⁺ , X=Cl ⁻ , Br ⁻ , I ⁻]: Surface Chemistry, Self-Assembly and Potential Applications
SPMEn S10.1 Chair: Sascha Sadewasser Room: Torremolinos C	
09:00 - 09:15 S10.1-O1	<u>Nicoleta Nicoara</u> (<i>International Iberian Nanotechnology Laboratory, 4715-330 Braga, Portugal</i>), Roby Manaligod, Philip Jackson, Dimitrios Hariskos, Wolfram Witte, Sascha Sadewasser Impact of Alkali post Deposition Treatments on the Grain Boundary Properties in Cu(In,Ga)Se ₂
09:15 - 09:45 S10.1-I1	<u>Stefan A.L. Weber</u> (<i>Max Planck Institute For Polymer Research</i>), Ilka Hermes, Anders Hagfeldt, Michael Graetzel, Wolfgang Tress, Rüdiger Berger Watching Ions Move: Scanning Probe Microscopy on Perovskite Solar Cells
09:45 - 10:00 S10.1-O2	<u>Rüdiger Berger</u> (<i>MPI for Polymer Research, Ackermannweg 10, 55128 Mainz, Germany</i>), Alexander Klasen, Stefan Weber, Ilka Hermes, Wolfgang Tremel, Ewald Johannes, Amelie Axt, Phillip Baumli Local Current Imaging through TiO ₂ Thin Films
10:00 - 10:30 S10.1-I2	<u>Philippe LECLERE</u> (<i>University of Mons (UMONS), Laboratory for Chemistry of Novel Materials, Center for Innovation and Research in Materials and Polymers (CIRMAP), Mons (Belgium)</i>) Light on Organic and Hybrid Photovoltaic Devices : The Key Role of Scanning Probe Microscopy
10:30 - 11:00	Coffee Break
SPMEn S10.2 Chair: Rüdiger Berger Room: Torremolinos C	
11:00 - 11:30 S10.2-I1	<u>Benjamin GREVIN</u> (<i>UMR5819 SyMMES CEA-CNRS-UGA CEA-Grenoble INAC/SyMMES 17 rue des Martyrs 38054 GRENOBLE CEDEX 9 FRANCE</i>) Imaging the Photocarrier Dynamics in Organic, Hybrid and Two-Dimensional Photovoltaic Materials by Time-Resolved Kelvin Probe Force Microscopy
11:30 - 11:45 S10.2-O1	<u>Jan-Frederik Heger</u> (<i>University of Applied Sciences Esslingen, Kanalstrasse 33, 73728 Esslingen, Germany</i>), Matthias Simolka, Arnulf Latz, Volker Schmidt, Renate Hiesgen AFM Based 3D-Modeling of a Fuel Cell Electrode
11:45 - 12:00 S10.2-O2	<u>Johanna Eichhorn, Francesca Maria Toma</u> (<i>Chemical Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, California 94720, United States</i>) Nanoscale Imaging of Charge Carrier Transport in Water Splitting Photoanodes
12:00 - 12:30	
12:30 - 14:30	Lunch



SPMEn S10.3

Room: Torremolinos C

14:30 - 15:00	<u>Christian Teichert</u> (<i>Montanuniversitaet Leoben</i>)
S10.3-I1	Advanced AFM Techniques to Study Photoconductivity of Inorganic and Organic Semiconductor Nanostructures
15:00 - 15:15	<u>Matthias Simolka</u> (<i>University of Applied Sciences Esslingen, Kanalstrasse 33, 73728 Esslingen, Germany</i>),
S10.3-O1	Christopher Heim, K. Andreas Friedrich, Renate Hiesgen
	Local Analysis of Li-ion Concentration and Diffusion-Migration Coefficients in Lithium-Silicon Electrodes
15:15 - 15:45	Sara Freund, Antoine Hinaut, Edwin C. Constable, Ernst Meyer, Catherine Housecroft, <u>Thilo Glatzel</u> (<i>Department</i>
S10.3-I2	<i>of Physics, University of Basel, Switzerland</i>)
	Dye Precursor Molecules on NiO(001) Studied by Non-Contact Atomic Force Microscopy
15:45 - 16:15	<u>Gunther Wittstock</u> (<i>Carl von Ossietzky University of Oldenburg</i>)
S10.3-I3	Scanning Electrochemical Microscopy of Energy Materials
16:15 - 16:30	<u>Elisa Palacios-Lidón</u> (<i>Universidad de Murcia</i>), Emin Istif, Ana Benito, Wolfgang K. Maser, Jaime Colchero
S10.3-O2	Nanoscale Photogenerated Charge-Transfer Study of P3HT Nanoparticles /Graphene Oxide Complexes.
16:30 - 17:00	<u>Anders Mikkelsen</u> (<i>Lund University, Department of Physics & NanoLund, Lund, Sweden</i>)
S10.3-I4	Atomic Scale Surface and Crystal Phase Control in Nanowires for Novel Electronics and Photonics.

17:30 - 19:00 **Poster session**

October 26th - Day 5 (Friday)

Plenary session 6

Chair: Sascha Sadewasser
Room: Torremolinos AB

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