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	Victor Klimov *(Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA)* Colloidal Quantum Dot Lasing: Historical Perspective and Recent Progress
	Plenary Session 2 Chair: Kevin Sivula Room: Torremolinos AB
09:00 - 09:30 2-K1	Yun Jeong Hwang *(Korea Institute of Science and Technology (KIST))*, Byoun Koun Min, Hyeong-Suk Oh Electrochemical Conversion of CO2 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	Alexis Grimaud *(Chimie du Solide et de l'Energie, FRE 3677, Collège de France, 75231 Paris Cedex 05, France)* 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, Bernhard Kaiser *(Institute of Material Science, Technische Universität Darmstadt, 64287 Darmstadt, Germany)* Nickeloxide Nanoparticles and Thin Films as Catalysts for (Photo)Electrochemical Water Splitting: A Surface Science Study
10:15 - 10:30 S1.1-O2	Laia Francas *(Imperial College London, Department of Chemistry, South Kensington Campus, London, SW7 2AZ)*, 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	Mariam Barawi Moran *(Institute IMDEA Energy)*, 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 TiO2 Nanocrystals and a New Nanostructured Conjugate Porous Polymer with Advanced Photoelectrochemical Properties
11:30 - 11:45 S1.2-O2	Sacha Corby *(Department of Chemistry, Imperial College London, South Kensington, London, SW7 2AZ, UK)*, 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	Annemarie Huijser *(MESA+ Institute for Nanotechnology, University of Twente)*, 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	Ernest Pastor *(Imperial College London, Department of Chemistry, South Kensington Campus, London, SW7 2AZ)*, 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	Vincent ARTERO *(Universite Grenoble Alpes)* Molecular-Based H2-Evolving Photocathodes
15:00 - 15:30 S1.3-O1	Menny Shalom *(Department of Chemistry, Ben Gurion University of the Negev, Beer Sheba, Israel)* Graphitic Carbon Nitride Layers as Light-Harvesting Semiconductors for Photoelectrochemical Cells
15:30 - 15:45 S1.3-O2	Michael Sachs *(Department of Chemistry, Imperial College London, South Kensington, London, SW7 2AZ, UK)*, Reiner Sebastian Sprick, Drew Pearce, Sam J. Hillman, Adriano Monti, Anne A. Y. Guilbert, Nick J. Brownbill, Stoichko Dimitrov, Frédéric Blanc, Martijn A. Zwijnenburg, Jenny Nelson, James R. Durrant, Andrew I. Cooper Understanding Hydrogen Evolution Activity of Linear Organic Photocatalysts
15:45 - 16:15 S1.3-O3	Ferdi Karadas *(Bilkent University, Ankara, Turkey)*, T. Gamze Ulusoy Ghobadi An Earth Abundant Dye-Sensitized Photoanode for Water Oxidation
16:15 - 16:30 S1.3-O4	Christos Trompoukis *(Ghent University, Photonics Research Group, iGent, Technologiepark Zwijnaarde 15, 9000 Ghent, Belgium)*, 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, Víctor Antonio de la Peña O'Shea *(1 Photoactivated Proceses Unit IMDEA Energy Institute)* 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	Alexander Cowan *(Department of Chemistry, University of Liverpool)* Sum-Frequency and Surface Sensitive Spectroscopy of Electrode and Photoelectrode Surfaces
09:30 - 10:00 S1.4-O1	Nestor Guijarro *(Laboratory for Molecular Engineering of Optoelectronic Nanomaterials, Ecole Polytechnique Fédérale de Lausanne, Station 6, CH-1015, Switzerland)*, 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	David E. Starr *(Institute for Solar Fuels, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany)*, 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 BiVO4 Photanodes

10:15 - 10:30 S1.4-O3	Farabi Bozheyev *(National Laboratory Astana, 53 Kabanbay Batyr St., 010000 Astana, Kazakhstan)*, Fanxing Xi, 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 S1.5-I1	Erwin Reisner *(University of Cambridge, UK)* Solar-Driven Fuel Synthesis with Hybrid Semiconductor Systems
11:30 - 11:45 S1.5-O1	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)* Efficient Hydrogen Photoproduction in Water with Hybrid Systems Composed of Quantum Dots and Molecular Catalysts
11:45 - 12:00 S1.5-O2	Elena Alfonso González *(IMDEA Energy Institute)*, Mengjiao Wang, Mariam Barawi, Luca De Trizio, Liberato Manna, Víctor A. de la Peña O'Shea Characterization of Cu2-xTe Nanocrystals for Photoelectrochemical Cells
12:00 - 12:30 S1.5-O3	Sixto Gimenez Julia *(Institute of Advanced Materials (INAM), Universitat Jaume I, 12071 Castelló, Spain)*, Drialys Cardenas Moscoso, Andrés F. Gualdrón-Reyes, Ana Beatriz Ferreira-Vitoreti, 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 S1.6-I1	Yogesh Surendranath *(Massachusetts Institute of Technology, Cambridge, MA 0213)* Bridging Molecular and Heterogeneous Electrocatalysis For Solar Fuels Production
15:00 - 15:30 S1.6-O1	Antonio Guerrero *(Institute of Advanced Materials (INAM), Universitat Jaume I)* Synthesis of Dimensionally Stable and Porous Electrodes for Photoelectrochemical Applications
15:30 - 15:45 S1.6-O3	Silvan Suter *(Laboratory of Renewable Energy Science and Engineering, École Polytechnique Fédérale de Lausanne, Switzerland)*, Sophia Haussener Linking Morphology and Multi-Physical Transport in Porous Copper Electrodes
15:45 - 16:15 S1.6-O2	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 Bi-Metallic Sn-Pd Catalysts for CO2 Electroreduction to Formic Acid: Modulation of Overpotential and Stability
16:15 - 16:30 S1.6-O4	magnan helene *(Service de Physique de l'Etat Condensé CEA, CNRS, Universite Paris Saclay CEA Saclay , l'orme des merisiers bat 772, 91191 Gif sur Yvette Cedex FRANCE)*, stanescu dana, brehin julien, barbier antoine Unraveling the Role of Ferroelectricity in Solar Water Splitting Improvement
16:30 - 16:45 S1.6-O5	Félix Urbain *(Institut de Recerca en Energia de Catalunya (IREC), Barcelona, Spain)*, Nina M. Carretero, Teresa 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 3-K1	Francesca Maria Toma *(Chemical Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, California 94720, United States)* 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	Vanessa Wood *(Laboratory for Interfacial Chemistry, ETH Zurich)* Charge Transport in Nanocrystal Solids
	SolFuel S1.7 Chair: Shannon Boettcher Room: Mediterraneo ABC
09:30 - 10:00 S1.7-I1	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)* A-LEAF: A European-Wide Approach Towards Solar Fuels
10:00 - 10:30 S1.7-O1	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)* 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 S1.8-O1	Frank Osterloh *(University of California at Davis)*, Zeqiong Zhao, Renato Gonçalves, Muhammad Huda, Sajib Barman, Emma Willard, Russell Perry, Edaan Byle Electronic Structure Basis for Enhanced Overall Water Splitting Photocatalysis of Doped Strontium Titanate in Direct Sunlight
11:30 - 11:45 S1.8-O2	Chang-Ming Jiang *(Joint Center for Artificial Photosynthesis and Chemical Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA)*, Ian Sharp, Jason Cooper Electronic Structure of CuFeO2 Photocathode Studied by Resonant Inelastic X-ray Scattering
11:45 - 12:00 S1.8-O3	Teresa Andreu *(Department of Advanced Materials for Energy, Catalonia Institute for Energy Research (IREC), Catalonia, Spain)*, Sebastian Murcia-López, Qin Shi Surface states in BiVO4 photoanodes for water oxidation: tuning the electron trapping process
12:00 - 12:15 S1.8-O4	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 α-SnWO4: A New Promising Photoanode Material for Solar Water Splitting
12:15 - 12:30 S1.8-O5	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 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	Katsushi Fujii *(RIKEN, Center for Advand\ced Photonics)*, Daiji Yamashita, Kayo Koike, Katsuhiko Tsuno, Masakazu Sugiyama, Takayo Ogawa, Satohi Wada Concepts and Preliminary Operation of kW-size Power Supply System with Energy Storage by Water Split Hydrogen Generation
127	Yongpeng Liu *(Laboratory for Molecular Engineering of Optoelectronic Nanomaterials (LIMNO), École Polytechnique Fédérale de Lausanne (EPFL), Station 6, 1015 Lausanne, Switzerland)*, Florian Le Formal, Florent Boudoire, Kevin Sivula, Nestor Guijarro Uncovering the Interfacial Carrier Dynamics in CuInGaS2 Photocathodes during Hydrogen Production
272	Chiara Pasquini *(Freie Universität Berlin)*, Holger Dau Water Oxidation in Neutral Versus Alkaline Electrolyte, Combining Electrochemistry with in-situ X-Ray Absorption and Raman Spectroscopy
275	Miguel García-Tecedor *(Institute of Advanced Materials (INAM), Universitat Jaume I, 12006 Castelló, Spain)*, Roser Fernández, Felipe Garcés, José Ramón Galán-Mascarós, Sixto Giménez Understanding of the Origin of Performance of NiZnFeOx Catalysts for OER
277	Byung-Ki Na *(Chungbuk National University)*, Gwang-Yong Baek Electrochemical Energy Storage by Carbon-coated SiO2/ZnO Composite of Lithium Ion Battery
278	Rowshanak Irani *(Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, 12489 Berlin, Germany)*, Paul Plate, Roel Van de Krol, Fatwa Firdaus Abdi Understanding the Performance Enhancement of BiVO4 Photoanodes Decorated with Ultra-Thin MnOx
281	Kayo Koike *(RIKEN Center for Advanced Photonics)*, Kazuhiro Yamamoto, Satoshi Ohara, Satoshi Wada, Katsushi Fujii Relationship between NiO Catalytic Effect and n-type GaN Surface Roughness for Photoelectrochemical Water Splitting
292	Sebastian Z. Oener *(Department of Chemistry, University of Oregon)*, Forrest A.L. Laskowski, Jessica L. Fehrs, David Bain, Shannon W. Boettcher Surface-gated Charge Carrier-Selective Nanocontacts in Photoelectrochemical Water Electrolysis
295	Shan Jiang *(Freie Universität Berlin, Department of Physics, Arnimallee 14, 14195 Berlin)*, Katharina Klingan, Chiara Pasquini, Holger Dau New Aspects of Operando Raman Spectroscopy Applied to Electrochemical CO2 Reduction on Cu Foams
297	Nils Põldme *(School of Natural and Environmental Sciences, Newcastle University, Newcastle upon Tyne, NE1 7RU, UK)*, Elizabeth Gibson Photoelectrocatalytic Hydrogen Evolution on Hybrid Photocathodes
309	Koichiro Ueda *(Department of Chemistry, Faculty of Science, Gakushuin University, 1-5-1 Mejiro, Toshima-ku, Tokyo 171-8588, Japan)*, Yoshiyuki Inaguma, Yusuke Asakura, Shu Yin, Ken-ichi Katsumata β-TaON Oxynitride Synthesis Using (C6N9H3)n and its Photoelectrochemical Properties
325	Christiane Adler *(University of Ulm)*, Dariusz Mitoraj, Radim Beranek Drastic Enhancement of Photocatalytic Activity of TiO2 Particles with Well-Defined Crystal Facets upon Deposition of Platinum
330	Nils Ulrich *(GSI Helmholtzzentrum für Schwerionenforschung)*, Joachim Brötz, Christina Trautmann, Maria Eugenia Toimil-Molares Synthesis and Characterization of Three-Dimensional Copper Nanowire Networks
335	Drialys Cardenas-Morcoso *(Institute of Advanced Materials (INAM), Universitat Jaume I, 12071 Castelló, Spain)*, Raya Ifraemov, Miguel García-Tecedor, Sixto Gimenez, Idan Hod Harnessing Co based Metalorganic Frameworks for Solar Water Splitting