

The Future of Hydrogen: Science, Applications and Energy Transition (H2Future)

Ibiza, Spain, 2024 April 17th - 19th

Conference organizers: Carolina Gimbert Suriñach, Sixto Gimenez Julia and Emilio Palomares

Conference Program

April 17th - Day 1 (Wednesday) 1	
08:50 - 09:00	Opening
	H2Future S.1.1. Chair: Emilio Palomares
09:00 - 09:30 S.1.1.-I1	<u>David Tilley</u> (<i>University of Zurich, Department of Chemistry, CH-8057 Zurich, Switzerland</i>) Photoelectrochemical and Photocatalytic Water Splitting with Low Cost Semiconductors
09:30 - 10:00 S.1.1.-I2	Qingjie Wang, Jingshan Luo, <u>Nestor Guijarro</u> (<i>Institute of Electrochemistry, University of Alicante</i>) Reimagining BiVO ₄ photoanodes: from surface-specific tailoring to a new chemical application space
10:00 - 10:45	Coffee Break
10:45 - 14:00	Networking activity 1
	H2Future S.1.2. Chair: David Tilley
15:00 - 15:30 S.1.2.-I1	<u>Teresa Andreu</u> (<i>Departament de Ciència de Materials i Química Física. Universitat de Barcelona. Martí i Franquès, 1. 08028-Barcelona</i>), Josep Boter, Pere Lluís Cabot, Maria Sarret, Andrea Garfias, Albaladejo-Fuentes Vicente Highly conductive Interfaces to reduce the cost of PEM Electrolysers (INTELEC)
15:30 - 15:45 S.1.2.-O1	<u>Ana Gutiérrez Blanco</u> (<i>Institute of Advanced Materials (INAM), Universitat Jaume I, Av. De Vicent Sos Baynat, s/n 12071 Castellò, Spain</i>), Christian Robles, Laura Montañés, Camilo Arturo Mesa, Diego Iglesias, Helena Rabelo, Maria Chiara Spadaro, Jordi Arbiol, Jesús Redondo, Frederik Schiller, Sara Barja, Beatriz Julián López, Víctor Sans, Sixto Giménez Juliá Continuous-Flow Synthesis of BiVO ₄ Nanoparticles: From laboratory scale to practical systems
15:45 - 16:00 S.1.2.-O2	<u>Uchechi Chibuko</u> (<i>IEK5-Photovoltaik, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany</i>), Tsvetelina Merdzhanova, Florian Seidler, Sergey Shcherbachenko, Ursula Wurstbauer, Uwe Rau, Oleksandr Astakhov Direct Coupling of Water Electrolyser and Battery to PV Towards Enhanced Solar-to- Hydrogen Efficiencies
16:00 - 16:15 S.1.2.-O3	<u>Oleksandr Astakhov</u> (<i>Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research (IEK-5-Photovoltaik), Jülich, Germany</i>), Uwe Rau, Tsvetelina Merdzhanova Fast assessment of solar-to-hydrogen efficiency limits and loss analysis in photovoltaic-driven water electrolyzers using polarization curves
	Flash Talks Session Chair: Bahareh Khezri
16:15 - 16:20 Session-T3	<u>David Reyes-Mesa</u> (<i>Department of Chemistry and Centro de Innovación en Química Avanzada (ORFEO-CINQA), Universitat Autònoma de Barcelona, Cerdanyola del Vallès, 08193 Barcelona, Spain</i>), Albert Gallego-Gamo, Axel Guinard, Adelina Vallribera, Albert Granados, Roser Pleixats, Carolina Gimbert-Suriñach Tunable Covalent Organic Frameworks for the Light-induced Hydrogen Evolution Reaction
16:20 - 16:25 Session-T1	<u>Ruggero Bonetto</u> (<i>Department of Chemistry, Universitat Autònoma de Barcelona, Cerdanyola del Vallès, Barcelona 08193, Spain</i>), Nuria Romero, Marcos Gil-Sepulcre, Federica Sabuzi, Giulia Alice Volpato, Mattia Forchetta, Laia Francàs, Raffaella Signorini, Mirco Natali, Jordi García-Antón, Olaf Rüdiger, Karine Philippot, Danilo Pedron, Serena DeBeer, Pierluca Galloni, Andrea Sartorel, Xavier Sala Polyquinoid Dye-Cobalt(II,III) Oxide Hybrids: Novel Rare Metal-Free Dyadic Nanomaterials For Photoelectrochemical Water Oxidation
16:25 - 16:30 Session-T2	<u>Axel Guinart-Guillem</u> (<i>Department of Chemistry and Centro de Innovación en Química Avanzada (ORFEO-CINQA), Universitat Autònoma de Barcelona, Cerdanyola del Vallès, 08193 Barcelona, Spain</i>), Ruggero Bonetto, David Reyes, Roser Pleixats, Albert Granados, Adelina Vallribera, Carolina Gimbert-Suriñach Sol-gel hybrid materials for water oxidation (photo)electrodes
16:30 - 16:40	Discussion



April 18th - Day 2 (Thursday) 2

09:00 - 10:00	Networking activity 2
11:00 - 12:00	Networking activity 3
	H2Future S.2.1. Chair: Carolina Gimbert Suriñach
15:00 - 15:30	<u>Jose A. Mata</u> (<i>Institute of Advanced Materials (INAM), Universitat Jaume I, Av. de Vicente Sos Baynat, s/n, 12006 Castelló, Spain</i>)
S.2.1.-I1	HYDROGEN STORAGE IN THE LIQUID FORM USING ORGANIC CARRIERS
15:30 - 16:00	<u>Laurent Billon</u> (<i>Bio-Inspired Materials group: functionalities & Self-assembly University of Pau & Adour Lands, Pau, France</i>)
S.2.1.-I2	Polymer or not polymer? An interesting concept to tune the efficiency/stability of catalytic sites
16:00 - 16:15	<u>Olvido Irrazábal Moreda</u> (<i>ESRF - The European Synchrotron</i>), Olaf Magnussen, Jakub Drnec, Andrea Sartori
S.2.1.-O1	Catalytic Dehydrogenation in LOHC Technology
16:15 - 16:30	<u>Matteo Bordin</u> (<i>Ca' Foscari University of Venice</i>), Tofik Ahmed Shifa, Alberto Vomiero, Elisa Moretti
S.2.1.-O2	Enhancing Hydrogen Production Efficiency: Mo Confinement within the Van der Waals Gap of Se-Enriched MnPSe ₃
20:00 - 22:00	Social Dinner

April 19th - Day 3 (Friday) 3

H2Future S.3.1.	
Chair: Sixto Gimenez Julia	
09:00 - 09:30	<u>Bahareh Khezri</u> (<i>Institución Catalana de Investigación y Estudios Avanzados (ICREA), URV/ICIQ</i>)
S.3.1.-I1	Catalyst Design for a Greener Future
09:30 - 10:00	<u>Ronen Gottesman</u> (<i>Institute of Chemistry and the Center for Nanoscience and Nanotechnology, The Hebrew University of Jerusalem</i>)
S.3.1.-I2	Controlling Anisotropies in α -SnWO ₄ Photoanodes for Solar Water Oxidation
10:00 - 10:45	Coffee Break
H2Future S.3.2.	
Chair: Teresa Andreu	
10:45 - 11:00	<u>Dimitrios Raptis</u> (<i>ICFO - Institut de Ciències Fotoniques, The Barcelona Institute of Science and Technology, 08860 Castelldefels, Spain</i>), Valentina Gacha, Carles Ros, Xenia Andres, Jordi Llorca, Jordi Martorell
S.3.2.-O1	Improving the Photoelectrochemical Performance of BiVO ₄ Photoanodes via ZrCl ₄ Treatment of SnO ₂ Electron Transport Layer
11:00 - 11:15	<u>Juan Carlos Expósito-Gálvez</u> (<i>Center for Nanoscience and Sustainable Technologies (CNATS). Department of Physical, Chemical and Natural Systems, Universidad Pablo de Olavide, Sevilla, Spain</i>), Ludek Hromadko, Francisco J. Peón-Díaz, Jan M Macak, Gerko Oskam
S.3.2.-O2	Comparing the Performance of WO ₃ Nanoparticles and Nanofibers for Photoelectrochemical Water Splitting and Photocatalytic Dye Degradation
11:15 - 11:30	Zahra Albu, Nawal Al Abass, Talal Qahtan, Bandar AlOtaibi, <u>Mojtaba Abdi-Jalebi</u> (<i>Institute for Materials Discovery, University College London, Malet Place, London, WC1E 7JE UK</i>)
S.3.2.-O3	Enhancing Visible-Light-Driven Water Splitting with Transition Metal Doping of CeO ₂ for Improved Photoelectrocatalytic Green Hydrogen Production
11:30 - 11:45	<u>Nilesh Manwar</u> (<i>Institute of Physical Chemistry, Polish Academy of Sciences, Kasprzaka 44/52, 01-224 Warsaw, Poland</i>), Zdenek Sofer, Juan Carlos Colmenares
S.3.2.-O4	Exploring Carbon Nitride-Based Materials for Photoreforming Biomass Aqueous Solutions into Hydrogen
11:45 - 12:30	Team Discussion
12:30 - 12:45	Closing