

The Future of Hydrogen: Science, Applications and Energy Transition (H2Future25)

Energy transition

Ibiza, Spain, 2025 May 5th - 7th

Conference Chairs: Teresa Andreu, Bahareh Khezri and Jose Mata

Conference Program

May 5th - Day 1 (Monday)	
08:30 - 09:15	Registration
09:15 - 09:30	Opening #H2Future
	Session 1.1 #H2Future25
09:30 - 10:00 #H2Future25-I1	<u>Sanjay Mathur</u> (<i>Institute of Inorganic and Materials Chemistry University of Cologne, Greinstrasse 6, D-50939 Cologne, Germany</i>), Naina Goyal, Touraj Karimpour, Benedikt Witulski, Thomas Fischer Advanced Materials Steering Hydrogen Transition
10:00 - 10:15 #H2Future25-O1	<u>Marcus Einert</u> (<i>Department of Materials and Earth Sciences, Surface Science Laboratory, Technical University of Darmstadt, Otto-Bernd-Strasse 3, 63287 Darmstadt, Germany</i>), Arslan Waheed, Dominik Moritz, Stefan Lauterbach, Anna Kundmann, Sahar Demi, Helmut Schlaad, Frank Osterloh, Jan Philipp Hofmann Mesoporous CuFe2O4 Photoanodes for Solar Water Splitting Oxidation: Impact of Surface Morphology on the Photoelectrochemical Properties
10:15 - 10:30 #H2Future25-O2	<u>Edoardo Maggi</u> (<i>Photovoltaic Group, Polytechnic University of Catalonia, Barcelona, Spain</i>), Oriol Segura, Arnau Torrens, Pau Estarlich, Marcel Placidi, Jordi Llorca, Lydia Wong, Lluís Soler, Edgardo Saucedo Advancing Selenium-Based Photocathodes for Solar-Driven Hydrogen Evolution: From Material Optimization to High-Performance Devices
10:30 - 11:00 #H2Future25-I2	<u>Emilio Palomares Gil</u> (<i>Institución Catalana de Investigación y Estudios Avanzados (ICREA), URV/ICIQ</i>) SOLAR POWERED HYDROGEN CATALYSIS
11:00 - 11:45	Coffee Break
	Session 1.2 #H2Future25
11:45 - 12:15 #H2Future25-I1	<u>Víctor de la Peña O'Shea</u> (<i>Photoactivated Processes Unit, IMDEA Energy Institute. Avda. Ramón de la Sagra, 3, 28935 Móstoles (Madrid) Spain</i>) Catalyzing Change: The Role of Solar-chemistry technologies in the sustainable energy development
12:15 - 12:30 #H2Future25-O1	Carmen Mejuto, David Carvajal, Jose Solera, elena Mas-Marzá, <u>Francisco Fabregat-Santiago</u> (<i>Institute of Advanced Materials (INAM), Universitat Jaume I, Av. Vicent Sos Baynat, s/n, Castelló de la Plana, 12071 Spain</i>) Conversion of biomass derivatives into added value products: How capacitance analysis may help to optimize the process
12:30 - 12:45 #H2Future25-O2	<u>MohammadAli Zoljalali</u> (<i>Department of Physical and Inorganic Chemistry, Universitat Rovira i Virgili, Campus Sescelades, N4 Block, C. Marcel·lí Domingo 1, 43007, Tarragona, Spain.</i>), Richard Ahorsu, Francesc Díaz, Magdalena Aguiló, Xavier Mateos Revolutionizing Water Electrolysis: A Membraneless Approach for Hydrogen Production
12:45 - 13:15 #H2Future25-I2	<u>Carolina Gimbert Suriñach</u> (<i>Universitat Autònoma de Barcelona</i>) A journey through water splitting catalytic centers and their interaction with conductive materials and semiconductors
16:00 - 17:00	Social Activity 1: Running

May 6th - Day 2 (Tuesday)

10:00 - 11:00	Social Activity 2: Yoga
	Session 2.2 #H2Future Chair: Ainhoa Cots
11:30 - 12:00	<u>Sophia Haussener</u> (<i>Laboratory of Renewable Energy Science and Engineering, EPFL, Station 9, Lausanne 1015, Switzerland</i>)
#H2Future-I1	Photo-electrochemical fuel generation: Innovations in design and operation
12:00 - 12:30	<u>Sixto Gimenez</u> (<i>Institute of Advanced Materials (INAM). Universitat Jaume I. Av. Vicente Sos Baynat s/n., 12006 Castellón (Spain)</i>)
#H2Future-I2	Novel heterostructuring strategies to improve the photoelectrochemical performance of BiVO ₄ photoanodes for solar fuel production
12:30 - 12:45	<u>Alceo Macchioni</u> (<i>Department of Chemistry, Biology and Biotechnology, University of Perugia, Via Elce di Sotto 8, 06123, Perugia, Italy</i>),
#H2Future-O1	Elisa Boccalon, Gabriel Menendez Rodriguez, Iolanda D'Ambrosio, Ferdinando Costantino, Cristiano Zuccaccia, Luca Rocchigiani
	Catalysts for Renewable Hydrogen Production and NADH Regeneration
12:45 - 13:15	<u>Mathilde Luneau</u> (<i>Department of Chemistry and Chemical Engineering, Chalmers University of Technology, SE-412 96 Gothenburg, Sweden</i>)
#H2Future-I3	Understanding the enhanced activity of Pd/CeO ₂ catalysts in hydrogen oxidation reaction in alkaline media
20:30 - 22:00	Social Dinner

May 7th - Day 3 (Wednesday)

Session 3.1 #H2Future25

09:30 - 10:00 #H2Future25-I1	<u>José Ramon Galan-Mascaros</u> (<i>Institute of Chemical Research of Catalonia, ICIQ</i>) Electrocatalysis and water electrolysis: From materials design to functional devices
10:00 - 10:15 #H2Future25-O1	<u>Laura Fuentes</u> (<i>Universitat Rovira i Virgili</i>) Advanced Non-Noble Catalysts for Next-Generation Clean Energy Solutions
10:15 - 10:30 #H2Future25-O2	<u>Lewis Bradley</u> (<i>Materials, Imperial college London</i>) Ca-doped PrFeO ₃ Photocathode Development Towards Photoelectrochemical Water Splitting
10:30 - 11:00 #H2Future25-I2	<u>F. Pelayo García de Arquer</u> (<i>ICFO - The Institute of Photonic Sciences</i>) Active interface management in water electrolysis towards improved performance

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Session 3.2 #H2Future

11:45 - 12:15 #H2Future-I1	<u>David Tilley</u> (<i>Department of Chemistry, University of Zurich, Zurich 8057, Switzerland</i>) Cuprous Oxide for Solar Water Splitting
12:15 - 12:20 #H2Future-T1	<u>Joan Puigdollers</u> (<i>Center for Research in Multiscale Science and Engineering and Department of Chemical Engineering, Institute of Energy Technologies, Universitat Politècnica de Catalunya (UPC), EEBE, Eduard Maristany 10-14, Barcelona, 08019 Spain</i>), oriol segura, edgardo saucedo, edoardo maggi, lluis soler, jordi llorca, cristobal voz, gerard masmitjà Selective interdigitated contacts for improved photocatalytic systems: TiO ₂ case study.
12:20 - 12:25 #H2Future-T2	Carolina Gimbert-Suriñach, <u>Pau Sarró</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>), David Reyes-Mesa, Albert Granados, Adelina Vallribera, Roser Pleixats The Power of Controlling the Catalytic Centers in Boosting the Photocatalytic Hydrogen Evolution Performance of 2D-COFs
12:25 - 12:30 #H2Future-T3	<u>Payal Chauhan</u> (<i>Department of Inorganic Chemistry, University of Chemistry and Technology Prague, Technická 5, Prague 6, 16628 Czech Republic</i>), Bing Wu, Jan Plutnar, Jakub Regner, Alkesh Patel, Martin Loula, Zdenek Sofer Enhanced Water Splitting Performance of CoZnCr@MXene in Alkaline Seawater and Anion Exchange Membrane Electrolysis
12:30 - 12:35 #H2Future-T4	<u>Igor Djerdi</u> (<i>University of Osijek</i>), Dalibor Tatar, Jelena Kojčinović, Stjepan Šarić Application of Rare Earth High-Entropy Oxides for Photocatalytic Water Splitting and CO ₂ Reduction
12:35 - 12:40 #H2Future-T5	<u>Ainhoa Cots</u> (<i>Leitat Technological Center</i>), Carlos Hurtado, Sandra Martínez, Raquel Arnal, Jorge Luque, Daniele Molognoni, Pau Bosch-Jimenez, Paloma Ortiz, Marcel Boerrigter H2ENRY: Innovative Approaches for Green Hydrogen Production and Purification

Discussion #H2Future

12:40 - 13:00 Discussion

13:00 - 13:10 Closing #H2Future25

The Future of Hydrogen: Science, Applications and Energy Transition (H2Future25) Applications

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10:15 - 10:30 #H2Future25-O2	<u>Edoardo Maggi</u> (<i>Photovoltaic Group, Polytechnic University of Catalonia, Barcelona, Spain</i>), Oriol Segura, Arnau Torrens, Pau Estarlich, Marcel Placidi, Jordi Llorca, Lydia Wong, Lluís Soler, Edgardo Saucedo Advancing Selenium-Based Photocathodes for Solar-Driven Hydrogen Evolution: From Material Optimization to High-Performance Devices
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12:30 - 12:45 #H2Future25-O2	<u>MohammadAli Zoljalali</u> (<i>Department of Physical and Inorganic Chemistry, Universitat Rovira i Virgili, Campus Sescelades, N4 Block, C. Marcel·lí Domingo 1, 43007, Tarragona, Spain.</i>), Richard Ahorsu, Francesc Díaz, Magdalena Aguiló, Xavier Mateos Revolutionizing Water Electrolysis: A Membraneless Approach for Hydrogen Production
12:45 - 13:15 #H2Future25-I2	<u>Carolina Gimbert Suriñach</u> (<i>Universitat Autònoma de Barcelona</i>) A journey through water splitting catalytic centers and their interaction with conductive materials and semiconductors
16:00 - 17:00	Social Activity 1: Running

May 6th - Day 2 (Tuesday)

10:00 - 11:00	Social Activity 2: Yoga
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11:30 - 12:00	<u>Sophia Haussener</u> (Laboratory of Renewable Energy Science and Engineering, EPFL, Station 9, Lausanne 1015, Switzerland)
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12:00 - 12:30	<u>Sixto Gimenez</u> (Institute of Advanced Materials (INAM). Universitat Jaume I. Av. Vicente Sos Baynat s/n., 12006 Castellón (Spain))
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#H2Future-I3	Understanding the enhanced activity of Pd/CeO2 catalysts in hydrogen oxidation reaction in alkaline media
20:30 - 22:00	Social Dinner

May 7th - Day 3 (Wednesday)

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12:30 - 12:45 #H2Future25-O2	<u>MohammadAli Zoljalali</u> (<i>Department of Physical and Inorganic Chemistry, Universitat Rovira i Virgili, Campus Sescelades, N4 Block, C. Marcel·lí Domingo 1, 43007, Tarragona, Spain.</i>), Richard Ahorsu, Francesc Díaz, Magdalena Aguiló, Xavier Mateos Revolutionizing Water Electrolysis: A Membraneless Approach for Hydrogen Production
12:45 - 13:15 #H2Future25-I2	<u>Carolina Gimbert Suriñach</u> (<i>Universitat Autònoma de Barcelona</i>) A journey through water splitting catalytic centers and their interaction with conductive materials and semiconductors
16:00 - 17:00	Social Activity 1: Running

May 6th - Day 2 (Tuesday)

10:00 - 11:00	Social Activity 2: Yoga
	Session 2.2 #H2Future Chair: Ainhoa Cots
11:30 - 12:00	<u>Sophia Haussener</u> (<i>Laboratory of Renewable Energy Science and Engineering, EPFL, Station 9, Lausanne 1015, Switzerland</i>)
#H2Future-I1	Photo-electrochemical fuel generation: Innovations in design and operation
12:00 - 12:30	<u>Sixto Gimenez</u> (<i>Institute of Advanced Materials (INAM). Universitat Jaume I. Av. Vicente Sos Baynat s/n., 12006 Castellón (Spain)</i>)
#H2Future-I2	Novel heterostructuring strategies to improve the photoelectrochemical performance of BiVO ₄ photoanodes for solar fuel production
12:30 - 12:45	<u>Alceo Macchioni</u> (<i>Department of Chemistry, Biology and Biotechnology, University of Perugia, Via Elce di Sotto 8, 06123, Perugia, Italy</i>),
#H2Future-O1	Elisa Boccalon, Gabriel Menendez Rodriguez, Iolanda D'Ambrosio, Ferdinando Costantino, Cristiano Zuccaccia, Luca Rocchigiani
	Catalysts for Renewable Hydrogen Production and NADH Regeneration
12:45 - 13:15	<u>Mathilde Luneau</u> (<i>Department of Chemistry and Chemical Engineering, Chalmers University of Technology, SE-412 96 Gothenburg, Sweden</i>)
#H2Future-I3	Understanding the enhanced activity of Pd/CeO ₂ catalysts in hydrogen oxidation reaction in alkaline media
20:30 - 22:00	Social Dinner

May 7th - Day 3 (Wednesday)

Session 3.1 #H2Future25

09:30 - 10:00 #H2Future25-I1	<u>José Ramon Galan-Mascaros</u> (<i>Institute of Chemical Research of Catalonia, ICIQ</i>) Electrocatalysis and water electrolysis: From materials design to functional devices
10:00 - 10:15 #H2Future25-O1	<u>Laura Fuentes</u> (<i>Universitat Rovira i Virgili</i>) Advanced Non-Noble Catalysts for Next-Generation Clean Energy Solutions
10:15 - 10:30 #H2Future25-O2	<u>Lewis Bradley</u> (<i>Materials, Imperial college London</i>) Ca-doped PrFeO ₃ Photocathode Development Towards Photoelectrochemical Water Splitting
10:30 - 11:00 #H2Future25-I2	<u>F. Pelayo García de Arquer</u> (<i>ICFO - The Institute of Photonic Sciences</i>) Active interface management in water electrolysis towards improved performance

11:00 - 11:45 Coffee Break

Session 3.2 #H2Future

11:45 - 12:15 #H2Future-I1	<u>David Tilley</u> (<i>Department of Chemistry, University of Zurich, Zurich 8057, Switzerland</i>) Cuprous Oxide for Solar Water Splitting
12:15 - 12:20 #H2Future-T1	<u>Joan Puigdollers</u> (<i>Center for Research in Multiscale Science and Engineering and Department of Chemical Engineering, Institute of Energy Technologies, Universitat Politècnica de Catalunya (UPC), EEBE, Eduard Maristany 10-14, Barcelona, 08019 Spain</i>), oriol segura, edgardo saucedo, edoardo maggi, lluis soler, jordi llorca, cristobal voz, gerard masmitjà Selective interdigitated contacts for improved photocatalytic systems: TiO ₂ case study.
12:20 - 12:25 #H2Future-T2	Carolina Gimbert-Suriñach, <u>Pau Sarró</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>), David Reyes-Mesa, Albert Granados, Adelina Vallribera, Roser Pleixats The Power of Controlling the Catalytic Centers in Boosting the Photocatalytic Hydrogen Evolution Performance of 2D-COFs
12:25 - 12:30 #H2Future-T3	<u>Payal Chauhan</u> (<i>Department of Inorganic Chemistry, University of Chemistry and Technology Prague, Technická 5, Prague 6, 16628 Czech Republic</i>), Bing Wu, Jan Plutnar, Jakub Regner, Alkesh Patel, Martin Loula, Zdenek Sofer Enhanced Water Splitting Performance of CoZnCr@MXene in Alkaline Seawater and Anion Exchange Membrane Electrolysis
12:30 - 12:35 #H2Future-T4	<u>Igor Djerdi</u> (<i>University of Osijek</i>), Dalibor Tatar, Jelena Kojčinović, Stjepan Šarić Application of Rare Earth High-Entropy Oxides for Photocatalytic Water Splitting and CO ₂ Reduction
12:35 - 12:40 #H2Future-T5	<u>Ainhoa Cots</u> (<i>Leitat Technological Center</i>), Carlos Hurtado, Sandra Martínez, Raquel Arnal, Jorge Luque, Daniele Molognoni, Pau Bosch-Jimenez, Paloma Ortiz, Marcel Boerrigter H2ENRY: Innovative Approaches for Green Hydrogen Production and Purification

Discussion #H2Future

12:40 - 13:00 Discussion

13:00 - 13:10 Closing #H2Future25