



European Hydrogen Energy Conference 2022

**Complejo Duques de Pastrana
(P.º de la Habana, 208, 28016 Madrid)**

18, 19 y 20 de mayo de 2022

Evento organizado desde 2005 por la AeH2 en España, en el marco de las actuaciones reflejadas en la Medida 38 de la Hoja de Ruta del Hidrógeno Española.

La AeH2, posicionada como agente de referencia en el sector, está formada por más de 300 entidades con actividad en toda la Cadena de Valor del hidrógeno.

El Congreso muestra la aportación española y europea a esta Cadena de Valor del Hidrógeno, resaltando la calificación de “un proyecto país”.

Comité de Honor

Presidido por Su Majestad el Rey Felipe VI. Con presencia de representantes y consejeros de los gobiernos autonómicos de la CAM y CLM, así como D. Joan Groizard, director del IDAE.

Isabel Díaz Ayuso	Presidenta de la Comunidad de Madrid (PC)
Emiliano García-Page	Presidente de Castilla-La Mancha.
José Luis Escudero	Consejero de Desarrollo Sostenible. Gobierno de Castilla-La Mancha.
Joan Groizard Payeras	Director General. Instituto para la Diversificación y Ahorro de la Energía (IDAE). (PC)
Rosa Ana Rodríguez	Consejera de Educación, Cultura y Deportes. Gobierno de Castilla-La Mancha.
Eduardo Sicilia Cavanillas	Consejero de Ciencia, Universidades e Innovación. Comunidad de Madrid.

Agenda

Acto inaugural

18 de mayo de 2022, a las 9:00h, en el Auditorio del Complejo

Intervenciones:

Presidente de la Asociación Española del Hidrógeno (AeH2) y presidente del EHEC 2022:
D. José Javier Brey Sánchez. Intervención, conducción y cierre del acto.

- Ursula von der Leyen, presidenta de la Comisión Europea (participación en vídeo).
- Kadri Simson, European Commissioner for Energy (PC).
- Teresa Ribera, vicepresidenta tercera del Gobierno, MITECO (PC).
- Reyes Maroto, Ministra MINCOTUR (PC).
- Isabel Díaz Ayuso, presidenta de la CAM (PC).

Sesiones Plenarias

Agrupadas en 4 sesiones plenarias con 24 ponentes de entidades nacionales e internacionales del mayor nivel recogerán los principales temas de debate en el desarrollo del sector del hidrógeno

Plenary session 1: Renewable Energies and Green Hydrogen

18/05/22 - Auditorio

Chairperson: José Javier Brey Sánchez, presidente AeH2 y EHEC 2022

- Juan Abascal Heredero, Executive Director of Industrial Transformation and Circular Economy, **Repsol**.
- Maarten Wetselaar, CEO, **Cepsa**.
- Rajat Seksaria, CEO, **ACME Group**.
- Arturo Gonzalo Aizpiri, CEO, **Enagás**. (PC)
- Millán García-Tola, Global Director for Green Hydrogen, **Iberdrola**.

Plenary session 2: Towards the Hydrogen economy. Where we are. What we need.

19/05/22 - Auditorio

Chairperson: Paul Lucchese, Chair, IEA Hydrogen TCP

- Noé van Hulst, Chair, International Partnership of Hydrogen & Fuel Cells in the Economy (**IPHE**).
- Dr. Ute Collier, Deputy Director – Knowledge, Policy, and Finance Centre, International Renewable Energy Agency (**IRENA**).
- José Miguel Bermúdez, Energy Analyst. Hydrogen and alternative fuels, International Energy Agency (**IEA**).
- Bruno Esgalhado, partner at **McKinsey & Company**.
- Jorgo Chatzimarkakis, CEO, **Hydrogen Europe**.

- Petra Schwager, Chief, Energy Technologies and Industrial Applications (ETI) Division, **UNIDO**.
- **Hydrogen Council** (*Speaker PD*).

Plenary session 3: Hydrogen mobility

19/05/22 - Auditorio

Chairperson: Joan Groizard, Director General, IDEA (PC)

- Stephan Herbst, Technical Head Powertrain Hydrogen and Fuel Cell Business Unit, **Toyota Motor Europe's (TME)**.
- Jaime Borrel, Director Business Development & Public Affairs at Alstom Spain & Portugal, **ALSTOM**.
- Susana Carballo, Head of RFE (Rear, Fuselage, and Empennage) Airframe Engineering, **AIRBUS**.
- Miguel Mayrata, Manager of Business Diversification, **REDEXIS**.
- Ronald Graman, VP Global Fuel Cooperation, **Hyundai Motor Europe**.
- **Carburos Metálicos** (*speaker PD*).

Plenary session 4: Hydrogen Strategies around the world

20/05/22 - Auditorio

- Jin Yamaguchi, Director Principal, Energy Efficiency and Renewable Energy Department, Agency for Natural Resources and Energy, **METI, JAPAN**
- Nak-Hyun KWON, president, **H2 Korea**.
- Mark Kirby, president, **Canadian Hydrogen and Fuel Cell Association, CHFCA**, Canada.
- María Paz de la Cruz, CEO, **Asociación Chilena del Hidrógeno (H2Chile)**.
- Diego Mesa Puyo, Ministro, **Ministerio de Energía y Minas de Colombia**.
- Ana María Ruz, Green Hydrogen Specialist, Chilean Economic Development Agency, **CORFO**.
- **German Government/Ambassy** (*speaker PD*).
- **China Hydrogen Alliance** (*speaker PD*).

Sesiones Paralelas

Tras el análisis y selección realizado por el [Comité Científico](#) del EHEC a los más de 300 abstracts presentados, se han seleccionado **198 comunicaciones orales** (divididas en 36 sesiones paralelas a lo largo de los tres días del Congreso) y **75 comunicaciones de poster** (ver anexo con el programa de comunicaciones orales y poster).



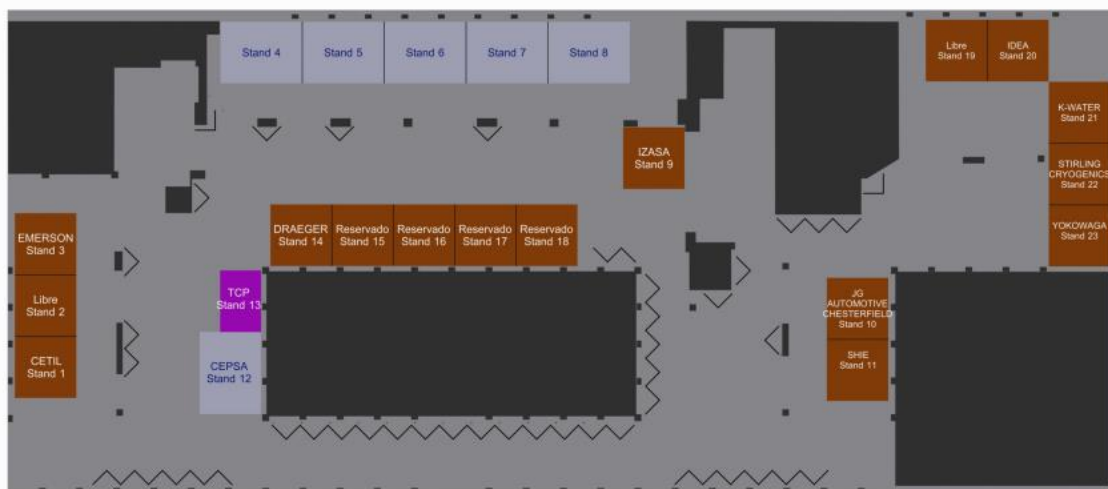
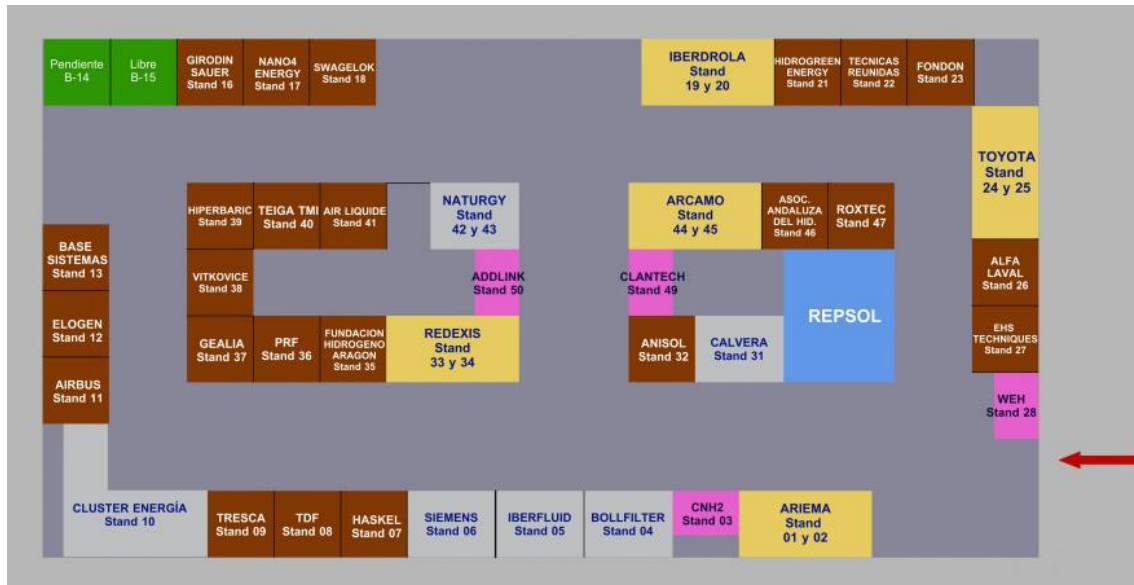
Cabe destacar que hay **150 presentaciones españolas** (entre orales y poster); algunos ejemplos de los ponentes son:

- Grandes empresas: Acciona, Air Liquide, BMW, EDP, Siemens, Técnicas Reunidas.
- Centros de Investigación españoles: Fundación Hidrógeno Aragón, Centro Nacional del Hidrógeno, CSIC, CIEMAT, CIRCE, Fundación CIDAUT, IMDEA, INTA, Tecnalia.
- Universidades españolas: Autónoma de Madrid, Cantabria, Carlos III Madrid, Castilla la Mancha, La Laguna, Loyola Andalucía, Málaga, Miguel Hernandez, Mondragon, Oviedo, País Vasco, Politécnica de Barcelona, Politécnica de Cartagena, Politécnica de Cataluña, Politécnica de Madrid, Politécnica de Valencia, Pública de Navarra, Rey Juan Carlos, Rovira i Virgili, Santander, Sevilla, Zaragoza.
- PYMES españolas: ARIEMA, H2B2, H2SITE
- Otras instituciones internacionales: CEA, Engie, Eni, Forschungszentrum Jülich, Fraunhofer Institute, Hiperbaric, SINTEF, TNO

Esto contribuye al intercambio de información, al impulso de la colaboración público-privada, y a promover la riqueza de la cadena de valor española.

Trade Fair

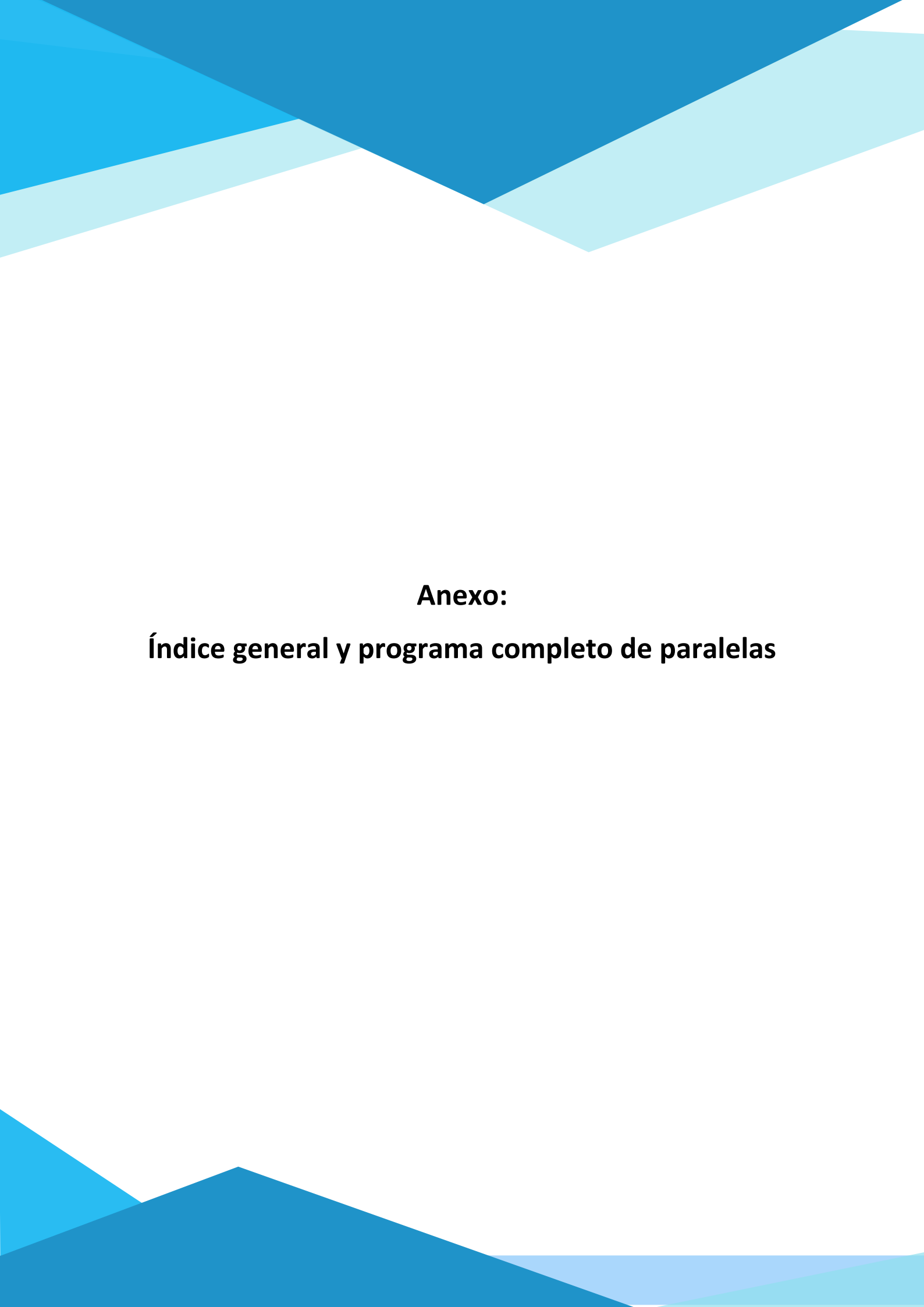
Con una feria comercial dividida en dos zonas de exposición de más de **1500m²** en total, los asistentes al Congreso podrán conocer las últimas novedades, proyectos y servicios especializados en hidrógeno de **más de 50 expositores**.



Test & Drive

En la zona del empedrado exterior del complejo Duques de Pastrana, los asistentes al Congreso podrán disfrutar de una exposición de **dos modelos de hidrogenera** (Carburos Metálicos y Shie) y de los vehículos de pila de combustible presentados por Toyota (Toyota Mirai, autobús y carretilla) y Hyundai (Hyundai Nexu). Y podrán probar la **conducción de los dos modelos de turismo de pila de combustible**.

Todo lo anterior hace del European Hydrogen Energy Conference 2022 el **evento de referencia**, con **más de 500 asistentes** de **más de 40 países** de todo el mundo.



Anexo:
Índice general y programa completo de paralelas

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- Oral Communications -

Wednesday, 18th May. Parallel Session 1 (13:00-14:00)

Room A. Environmental Impact & Transportation Applications

13:00 [ID152 The role of circularity and criticality indicators in the eco-design of fuel cells and hydrogen technologies](#)

Eleonora Bargiacchi, Felipe Campos-Carriedo, Gonzalo Puig-Samper, Diego Iribarren, Laurent Rey, Emmanuelle Cor, [Javier Dufour](#)

IMDEA-Energy (Spain); Rey Juan Carlos University (Spain); SYMBIO (France); Université Grenoble Alpes, CEA (France)

13:20 [ID263 Life-Cycle Global Warming Impact of Hydrogen Production by Photovoltaic Powered Electrolysis Imported from Africa compared to Hydrogen Production in Germany](#)

[Olga Kanz](#), Franka Brüggemann, Karsten Bittkau, Kaining Ding, Uwe Rau, Angèle Reinders

Forschungszentrum Jülich GmbH (Germany); Eindhoven University of Technology (The Netherlands); University of Twente (The Netherlands)

13:40 [ID352 Green hydrogen for emission reduction by vehicles for transport and civil works](#)

[Daniël Bakker](#), Ron Bol, Walter Corsten

KWR Water Research Institute (The Netherlands); Hysolar (The Netherlands); Aannemingsbedrijf Jos Scholman (The Netherlands)

Room B. Aerospace Applications

13:00 [ID339 A review of fuel cell unmanned aerial vehicles and their fuel storage](#)

[Gema Montaner Ríos](#)

German Aerospace Center DLR (Germany)

13:20 [ID248 Hydrogen system for small and nano satellite propulsion](#)

[Tamara Guerrero](#), J. Javier Brey

Universidad Loyola Andalucía (Spain)

13:40 [ID260 Hybrid catalyst for the direct CO₂ and H₂ conversion into jet fuels](#)

Vanesa Gil, [Javier Sánchez-Laínez](#), Kiyoharu Tadanaga, Harald Gröger, Stefan Wuttke, Jonas Gurauskis, Pedro Camargo, Reinaldo Giudici, Francesca Bonino, Joke Hadermann

Aragon Hydrogen Foundation (Spain); ARAID Foundation (Spain); Hokkaido University (Japan); Bielefeld University (Germany); UPV/EHU Leioa (Spain); Ikerbasque (Spain); Institute of Nanoscience and Materials of Aragon (Spain); Helsinki University (Finland); University of São Paulo (Brazil); University of Turin (Italy); University of Antwerp (Belgium)

Room C. Other Hydrogen Applications

13:00 [ID301 Impact of hydrogen impurities measured on PEMFC stacks in conditions representative of the automotive application](#)

[Sylvie Escribano](#), Laurent Jacqmin, Nicolas Mariage

Université Grenoble Alpes, CEA (France)

- 13:20 [ID200 Recent progresses in the design of a hydrogen PEMFC for portable applications](#)
M. Antonia Folgado, Luis Duque, Juan José Martínez Morales, José Miguel Barcala, Juan Carlos Oller, Antonio Molinero, Antonio Martínez Chaparro
CIEMAT (Spain)
- 13:40 [ID333 Potential uses of the heat released in hydrogen fuel cells: Overview and case-study analysis](#)
Antonio Atienza-Márquez, Joan Carles Bruno, Alberto Coronas
Universitat Rovira i Virgili (Spain)

Room D. Fuel Cells Components & Modelling

- 13:00 [ID112 eCoCell: An improved Gas Diffusion Layer for PEM fuel cells and electrolyzers](#)
Andrés Jerez Navarro, Modesto Aguirre Gómez, Javier López Cascales
Universidad Politécnica de Cartagena (Spain)
- 13:20 [ID110 Synergetic effect of major landfill contaminants on a LSGM electrolyte-supported SOFC with Ni-Ce based anode fed by biogas](#)
María José Escudero Berzal, Esperanza Ruiz, Isabel Ortiz
CIEMAT (Spain)
- 13:40 [ID324 Ammonia as fuel in a combined electricity and heat production system with PEMFC and SOFC as electric generators](#)
Cristina Escriche, Jorge Martínez, Enrique Romero, Jaime Soler
Aragon Institute of Engineering Research, University of Zaragoza (Spain)

Room E. Purification & Safety

- 13:00 [ID181 Metal-Organic Framework/Graphene Oxide Hybrid Adsorbents for Hydrogen Separation and Storage at Ambient Temperature](#)
Anish Mathai Varghese, K. Suresh Kumar Reddy, Georgios N. Karanikolos
Khalifa University (UAE)
- 13:20 [ID268 Pure H₂ generation in water gas shift or low temperature steam reforming membrane reactors over Ce-Zr and Zr based catalysts](#)
Francesco Basile, Salvatore Abate, E. Orfei, Andrea Fasolini, Gabriele Centi
University of Bologna (Italy); University of Messina (Italy)
- 13:40 [ID326 Effect of fuel-air ratio on combustion of hydrogen released from a fuel cell moving vehicle in free air](#)
Farhad Farajimoghadam, Matteo Testi, Luigi Crema
Full Fondazione Bruno Kessler (Italy)

Room F. Hydrogen Distribution, Codes & Standards

- 13:00 [ID32 How clean is your hydrogen? An overview of metrological developments underpinning hydrogen-fuel quality assurance](#)
Sam Bartlett, [Thomas Bacquart](#), A. Murugan, A. Morris, N. Moore, R. Wilmot, O. Omoniyi, Y. Hristova
National Physical Laboratory (UK)
- 13:20 [ID246 Energetic Analysis and Optimization of Decentral Micro Hydrogen Refuelling Stations Using Electrochemical Compression](#)
[Linda Schorer](#), Sven Schmitz, Thomas von Unwerth
DHBW Mannheim (Germany); Technical University Chemnitz (Germany)
- 13:40 [ID87 Assessment of the Hydrogen Regulatory Framework for Hydrogen Underground Storage](#)
[Sara Martínez Casasnovas](#), Jesús Simón Romeo, Arnaud Réveillère, Flore Ostapoff
Foundation for the Development of New Hydrogen Technologies in Aragon (Spain); Geostock (France)

Wednesday, 18th May. Parallel Session 2 (15:30-17:30)

Room A. Hydrogen Production: Renewable

- 15:30 [ID194 Green or Blue Hydrogen: \(much\) more than a matter of colors!](#)
[Joris Proost](#)
Université Catholique of Louvain (Belgium)
- 15:50 [ID91 Hex-generation system from seawater and air. Seed for decarbonization on the island of Gran Canaria](#)
[Antonio Pulido Alonso](#), G. Winter Althaus, L. Trujillo Castellano, E. Rosales Asensio
Las Palmas de Gran Canaria University (Spain)
- 16:10 [ID163 Green Hysland: Deployment of a hydrogen ecosystem on the Island of Mallorca](#)
[María Jaén](#), B. Ángela Sánchez
Enagás S.A. (Spain)
- 16:30 [ID285 HOASIS - Green Hydrogen and Circular Economy](#)
[Francisco Mario Gómez Rodríguez](#), [Carolina Pérez Bermúdez](#)
TCI Gecomp S.L. (Spain)
- 16:50 [ID215 SoHyCal: Renewable hydrogen production for transportation in California](#)
[J. Javier Brey](#), Delia Muñoz, Manuel Rodríguez, Africa Castro, Pablo Molina
H2B2 Electrolysis Technologies (Spain)

17:10 [ID313 Macroeconomic analysis of power-to-hydrogen technology in Switzerland using Input-Output analysis](#)

Ruchi Gupta, Thomas MM Guibentif, Markus Friedl, Martin Kumar Patel, David Parra

University of Geneva (Switzerland); Institut für Energietechnik (Switzerland)

Room B. Electrocatalysts / Electrodes

15:30 [ID284 Noble metal-free catalysts for reactions in fuel cells and electrolyzers](#)

Sergio Díaz Coello, Stephanie José Martínez, José Luis Rodríguez; Gonzalo García, Elena María Pastor Tejera

Universidad de La Laguna (Spain)

15:50 [ID334 Effect of transition metals on the electrocatalytic activity of N-doped carbon composites derived from polydopamine for oxygen evolution and oxygen reduction reactions](#)

Jesús Cebollada Borao, David Sebastián del Río, María Jesús Lázaro Elorri, María Victoria Martínez Huerta

ICB-CSIC (Spain); ICP-CSIC (Spain)

16:10 [ID235 Effect of nitrogen doping method on the activity of Fe-N-C catalysts based on carbon xerogels for fuel cells](#)

Laura Álvarez Manuel, Cinthia Alegre, Pedro Napal, David Sebastián, María Jesús Lázaro

ICB-CSIC (Spain)

16:30 [ID206 Imine-Based Framework as Key Precursor for Highly Active Fe/N/C Catalysts for Oxygen Reduction Reaction](#)

Álvaro Tolosana-Moranchel, Álvaro García, Laura Pascual, Pilar Ferrer, María Retuerto, Sergio Rojas

ICP-CSIC (Spain); Diamond Light Source (UK)

16:50 [ID143 In-situ Electrochemical Characterization of the Oxygen Reduction Reaction in Ionomer Tailored Catalyst Layers with a Gas Diffusion Electrode \(GDE\)](#)

Vicent Lloret, Paskal Kaiser, Marc Ayoub, Konrad Ehelebe, Simon Thiele, Karl Mayrhofer, Serhiy Cherevko

Helmholtz Institute Erlangen-Nürnberg for Renewable Energy (Germany); Friedrich-Alexander University (Germany)

17:10 [ID92 Investigation of the Behaviour of Gold Mesh Electrodes in Electrically Controllable Membrane Electrode Assemblies](#)

Carsten Cosse, Marc Schumann, Daniel Becker, Detlef Schulz

Helmut Schmidt University / University of the Bundeswehr Hamburg (Germany)

Room C. Safety

- 15:30 [ID190 The European Hydrogen Safety Panel: key role in the safe deployment of hydrogen technologies in Europe](#)

Iñaki Azkarate, Alberto Garcia-Hombrados, Thomas Jordan, Stuart Hawksworth, Jennifer Wen, Trygve Skjold; Marta Maroño

European Hydrogen Safety Panel, Fuel Cells and Hydrogen Joint Undertaken EHSP (Spain)

- 15:50 [ID114 Updated HIAD 2.0 database and the harmonised analysis procedure](#)

Jennifer Wen, Marta Marono, Pietro Moretto, Ernst-Arndt Reinecke, Pratap Sathiah, Etienne Studer, Elena Vyazmina, Daniele Melideo, Iñaki Azkárate

University of Warwick (UK); CIEMAT (Spain); EC Joint Research Centre JRC (The Netherlands); Forschungszentrum Juelich GmbH (Germany); Shell India Markets Private Limited (India); Université Paris-Saclay (France); Air Liquide R&D (France); Università di Pisa (Italy); European Hydrogen Safety Panel, Fuel Cells and Hydrogen Joint Undertaken EHSP (Spain)

- 16:10 [ID242 Modular Power Distribution Unit for Fuel Cell Based Electrical Systems](#)

David Marroquí, Carlos Cortes, Ausías Garrigós, José M. Blanes, Cristian Torres, Pablo Casado

Miguel Hernandez University of Elche (Spain)

- 16:30 [ID168 Formation of isolated flame cells propagating in ultra-lean hydrogen-air mixtures in narrow gaps](#)

Fernando Veiga, Daniel Martínez Ruiz, Mike Kuznetsov, Eduardo Fernández Tarrazo, Mario Sánchez Sanz

University Carlos III of Madrid (Spain); Polytechnic University of Madrid (Spain); Karlsruhe Institut für Technologie (Germany)

- 16:50 [ID209 Flash back predictions in flames in horizontal devices: the case of hydrogen flames](#)

Carmen Jiménez, Vadim Kurdyumov

CIEMAT (Spain)

- 17:10 [ID312 Numerical simulation of lean H₂-air premixed flames in narrow gaps](#)

Josué Melguizo-Gavilanes, Daniel Fernández-Galisteo, Anne Dejoan, Mario Sánchez-Sanz, Vadim N. Kurduymov

Institute Pprime, CNRS (France); CIEMAT (Spain); Universidad Carlos III de Madrid (Spain)

Room D. Fuel Cells Components

- 15:30 [ID302 Qualitative and quantitative determination of liquid water distribution in a PEM fuel cell](#)

Dajana Benkovic, Clemens Fink, Alfredo Iranzo

AVL-AST d.o.o. (Slovenia); AVL List GmbH (Germany); Universidad de Sevilla (Spain)

- 15:50 [ID70 Investigation of aging effects of gas diffusion layers for high temperature PEM fuel cell application](#)

Nadine Pilinski, Tanja Zierdt, Nina Bengen, Peter Wagner

German Aerospace Center DLR (Germany)

- 16:10 [ID106 Multi-stabilized hybrid membranes for fuel cell and electrolyzer](#)

Evelise Ferri, C. Tougne, M. Daoudi, F. Gouanvé, O. Gain, L. Gonon, V.H. Mareau, H. Mendil-Jakani, A. El Kaddouri, J.C. Perrin, J. Dillet, O. Lottin, V. Dufaud, E. Espuche

Université de Lyon 1 (France); Université Grenoble Alpes, CEA (France) ; Université of Lorraine (France)

16:30 [ID119 Innovative and sustainable recycling of materials in polymer electrolyte membrane fuel cells and electrolysis cells](#)

Mikkel Juul Larsen

IRD Fuel Cells A/S (Denmark)

16:50 [ID274 Metal-Organic Frameworks as novel electrolytes for proton exchange membrane fuel cells](#)

Catalina Biglione, Pablo Salcedo-Abraira, Nieves Ureña, Fabrice Salles, Alejandro Várez, Patricia Horcajada

IMDEA-Energy (Spain); Universidad Carlos III de Madrid (Spain); University of Montpellier (France)

17:10 [ID59 Experimental investigation of a novel bioinspired PEM fuel cell](#)

Christian Suárez, Alfredo Iranzo, Baltasar Toharias, Francisco Javier Pino, Felipe Rosa

University of Seville (Spain); Andalusian Association for Research & Industrial Cooperation (Spain)

Room E. Transportation Applications

15:30 [ID50 Hydrogen Mobility - Key Enabler of a renewable Transport System](#)

Juergen Rechberger

AVL List GmbH (Austria)

15:50 [ID177 The BMW iX5 Hydrogen – Fuel Cell Electric Driving Pleasure as a New Element of the BMW i Brand](#)

Klaas Kunze, Jürgen Guldner, Robert Halas

BMW AG (Germany)

16:10 [ID216 Renewable hydrogen based solution for refueling the logistic sector](#)

África Castro, Delia Muñoz, Manuel Rodríguez, J. Javier Brey, Pablo Molina

H2B2 Electrolysis Technologies (Spain)

16:30 [ID192 Hydrogen on-board storage options for rail vehicles](#)

Mathias Boehm

German Aerospace Center DLR (Germany)

16:50 [ID351 Putting rail at the center of national infrastructure: a wholistic view on hydrogen trains](#)

Luke Johnson, Ian Spencer, Tim Burleigh, Mike Muldoon

H2 Green (UK); Eversholt Rail (UK); Alstom (UK)

17:10 [ID149 Progress in the development of LNG and Diesel-fueled SOFC systems for maritime applications](#)

Jan Hollmann, Marco Fuchs, Elmar Pohl, Oliver Heymann, Carsten Spieker, Ulrich Gardemann, Michael Steffen

Leibniz University Hannover (Germany); OWI Science for Fuels gGmbH (Germany); Zentrum für BrennstoffzellenTechnik (Germany).

Room F. Pipelines and Hydrogen Infrastructure

- 15:30 [ID135 Hybrid Energy Networks – a Concept for Large Renewables and Hydrogen Utilization](#)
Evgueniy Entchev, Libing Yang, Wahiba Yaici, Lia Kouchachvili
CanmetENERGY Research Centre (Canada); University of Waterloo (Canada)
- 15:50 [ID353 Introduction to Hydrogen Energy: from applications to technical solutions](#)
Laurent Allidières
Air Liquide S.A. (France)
- 16:10 [ID38 Enabling Hydrogen Refuelling Station Networks](#)
Bill Ireland
Logan Energy Limited (UK)
- 16:30 [ID188 Hydrogen precooling in refueling stations](#)
Agustín Torralba
Alfa Laval (Spain)
- 16:50 [ID56 Effect of hydrogen partial pressure and degraded environmental conditions on the service behavior of a X65 pipeline steel not designed for hydrogen transport](#)
Christophe Mendibide, Flavien Vucko, Jean Kittel, Mickael Martinez, Gaurav Joshi
Institut de la Corrosion RISE (France); French Petroleum Institute Energies Nouvelles (France)
- 17:10 [ID64 Effect of high-pressure hydrogen environment on the physical and mechanical properties of elastomers](#)
Karabi Halder, Geraldine Theiler, Winoj Balasooriya
Federal Institute for Materials Research and Testing (Germany); Polymer Competence Centre Leoben GmbH (Germany)

Wednesday, 18th May. Parallel Session 3 (18:00-20:00)

Room A. Hydrogen Production: Renewable

- 18:00 [ID332 H₂ generation using CPV resources \(CPV4H2 Project\)](#)
María Martínez, Daniel Sánchez, Oscar de la Rubia, Rafael Cervantes, Goulven Quéméré, Ignacio Luque-Heredia, Delia Muñoz, Covadonga García
Institute of Concentration Photovoltaic Systems (Spain); BSQ Solar (Spain); H2B2 Electrolysis Technologies (Spain)
- 18:20 [ID144 Solar hydrogen and fuels production with concentrated solar energy](#)
Nathalie Monnerie, Andreas Rosenstiel, Martin Roeb, Christian Sattler
German Aerospace Center DLR (Germany)
- 18:40 [ID341 The CSP Role in the Spanish Green Hydrogen and Ammonia Industry](#)
Carlos Mata-Torres, Giorgio Ceresoli, Xavier Lara
Pacific Green Solar Technologies (Spain)
- 19:00 [ID74 The commercial opportunity for hydrogen as a route to market for wind projects in Europe: Generating and transporting hydrogen at scale at an economic cost](#)

Molly Lliffe, Annette Nienhaus

ERM (UK); ERM (Germany)

19:20 [ID355 LIFE CABEZO GREENH₂: MW-scale green hydrogen production plant to decarbonize the treatment of meat residuals](#)

Mónica Sánchez, José Luis Casarrubios, José Luis Martínez Sande, Emilio Bayón

Enagás S.A. (Spain); Falck Renewables SpA (Italy)

19:40 [ID156 Modular Automation Concepts for Clean Hydrogen and eFuel Production](#)

Hubertus Böhm, Bernd Kalusche, Fernando Trucharte-Artigas

Siemens AG (Germany); Siemens S.A. (Spain)

Room B. Electrocatalysts / Electrodes

18:00 [ID61 A tanks-in-series model for high-temperature PEM Fuel Cell](#)

Valerii Danilov, Gunther Kolb, Cartsten Cremers

Fraunhofer Institute for Microengineering and Microsystems (Germany); Fraunhofer Institute for Chemical Technology (Germany)

18:20 [ID148 Low Pt loading GDEs for PEMEC developed by magnetron sputtering technology](#)

A. Villamayor, Eva Gutierrez Berasategui, L. Mendizabal, J. Barriga

Tekniker (Spain)

18:40 [ID186 Pyrochlores with low content of Ru as efficient and stable electrocatalysts for oxygen evolution reaction in acid media](#)

Dmitry Galyamin, I. Rodríguez, M. A. Salam, J. Torrero, L. Pascual, M. Mokhtar, D. G. Sánchez, A. Gago, M.A. Peña, P. Ferrer, M. Retuerto, S. Rojas

ICP-SIC (Spain); King Abdulaziz University (Saudi Arabia); German Aerospace Center DLR (Germany); Diamond Light Source (UK)

19:00 [ID212 OER Catalysts derived from Ir double perovskites for Proton Exchange Membrane Water Electrolyzer](#)

María Retuerto, Laura Pascual, Jorge Torrero, M. A. Salam, M. Mokhtar, Daniel García Sánchez, Aldo S. Gago, J.A. Alonso, K. A. Friedrich, P. Ferrer, M.A. Peña, S. Rojas

ICP-CSIC (Spain); German Aerospace Center DLR (Germany); King Abdulaziz University (Saudi Arabia); Diamond Light Source (UK)

19:20 [ID300 A MEA based on Reinforced short-side-chain Aquivion® membrane for proton exchange membrane water electrolysis](#)

Stefania Siracusano, S. Tonella, C. Oldani, Antonino S. Aricò

CNR-ITAE (Italy); Solvay Specialty Polymers (Italy)

19:40 [ID230 Performance evaluation and modelling of electrocatalytic CO₂ reduction in a tubular protonic membrane reactor](#)

Imanol Quina García, D. Catalán, S. Escolástico, L. Almar, A.M. Dayagui, C. Vigen, José Manuel Serra Alfaro

Universitat Politècnica of València (Spain); Centre for Materials Science and Nanotechnology SMN (Norway); CoorsTek Membrane Sciences AS (Norway)

Room C. Hydrogen Storage

- 18:00 [ID77 Hydrogen - heat storage system based on metal hydride and phase change material](#)
Jussara Barale, Giovanni Capurso, Thorbjorn Stühff, Federico Nastro, Bettina Neumann, José Bellosta von Colbe, Paola Rizzi, C. Luetto, H. Stühff, M. Baricco
University of Turin (Italy); Helmholtz-Zentrum Hereon (Germany); Stühff Maschinen- und Anlagenbau GmbH (Germany); Tecnodelta S.r.l (Italy); GKN Sinter Metals Engineering GmbH (Germany)
- 18:20 [ID275 Innovative study of the by-product of NaBH₄ hydrolysis](#)
Diogo Silva, Hélder Nunes, Cármen Rangel, Alexandra Pinto
University of Porto (Portugal); National Laboratory of Energy and Geology (Portugal)
- 18:40 [ID180 Metal - decorated activated carbon - based adsorbents for hydrogen storage at ambient temperature: A comparative study using Pt, Pd, and Li](#)
Anish Mathai Varghese, K. Suresh Kumar Reddy, Georgios N. Karanikolos
Khalifa University (UAE)
- 19:00 [ID63 Hydrogen storage in nanostructured graphene-based materials](#)
Gotthard Seifert
TU Dresden (Germany)
- 19:20 [ID316 New metal-organic frameworks based on Co/Ni mixed-metals in URJC-materials to improve hydrogen storage](#)
Isabel Aguayo Whelan, Gisela Orcajo Rincón, Carmen Martos Sánchez, Guillermo Calleja Pardo
Rey Juan Carlos University (Spain)
- 19:40 [ID113 Economic Analysis of LN₂/LNG Precoolings in Hydrogen Liquefaction Process](#)
Sarng Woo Karng, Hyun Ji Kim, Seo Young Kim, Seong Hoon Kim, Choong-Hyun Choi, Sang Jun Park, Jun Hee Lee, Y. T. Yoon
Korea Institute of Science and Technology (Republic of Korea); Seoul National University (Republic of Korea); Hylium Industries, Inc. (Republic of Korea); NxMD, Hanwhasolutions (Republic of Korea); Korea Gas Technology Corporation (Republic of Korea)

Room D. Fuel Cells Components

- 18:00 [ID136 Improved performance of cobalt-free, SrFeO_{3-δ}-based IT-SOFC cathode using highly scalable spray pyrolysis](#)
Víctor Zapata-Ramírez, Ulises Amador, Clemens Ritter, Glenn C. Mather, Domingo Pérez-Coll
ICV-CSIC (Spain); Universidad San Pablo-CEU (Spain); Institut Laue-Langevin (France)
- 18:20 [ID174 Processing and characterisation of BaZr_{0.8}Y_{0.2}O_{3-δ} proton conductor densified at 1200°C](#)
Ángel Triviño Peláez, D. Pérez-Coll, M. Aparicio, D.P. Fagg, J. Mosa, G. C. Mather
ICV-CSIC (Spain); University of Aveiro (Portugal)
- 18:40 [ID261 Advanced microtubular SOFC cells and their integration in a 5 cell-bundle for portable applications](#)

Miguel A. Laguna-Bercero, Antonio García-Girón, Alodia Orera, Angel Larrea, Jorge Silva, Francisco J. Ester

Institute of Nanoscience and Materials of Aragon (Spain); BSH Electrodomésticos (Spain)

19:00 [ID55 Phyllosilicate minerals as sealants for Molten Carbonate Fuel Cell stacks](#)

Jaroslav Milewski, Arkadiusz Szczesniak, Aliaksandr Martynchik

Warsaw University of Technology (Poland)

19:20 [ID222 Integration of an intermediate-temperature fuel cell based on a CsH₅\(PO₄\)₂-doped polybenzimidazole membrane with a CuZn-based methanol reformer](#)

Konstantinos Kappis, Yifan Li, Haibin Li, George Avgouropoulos

University of Patras (Greece); Shanghai Jiao Tong University (China)

19:40 [ID298 Development of exacerbated load cycles as AST for PEMFC stacks and validation by in-situ and ex-situ characterizations](#)

Sylvie Escribano, Fabrice Micoud, Laure Guetaz

Université Grenoble Alpes, CEA (France)

Room E. Transportation Applications

18:00 [ID229 State Machine-Based Architecture to Control PEMFC System Processes in a Fuel Cell Electric Vehicle](#)

Ali Molavi, Attila Peter Husar, María Serra Prat, Hampus Hjortberg, Niclas Nilsson, Markus Kogler, Juan Sánchez Monreal, Yousif Eldigair

IRI-CSIC-UPC (Spain); PowerCell (Sweden); China Euro Vehicle Technology AB (Sweden); AVL (Austria); German Aerospace Center DLR (Germany); Brose Fahrzeugteile (Germany)

18:20 [ID166 Using Absorption Refrigerator and Metal Hydrides in Hydrogen Fuel Cell Trains: Draft Design Process and Feasibility](#)

Markus Kordel, Kevin Knetsch, Florian Heckert, Lutz Boeck

German Aerospace Center DLR (Germany); Faiveley Transport Leipzig GmbH (Germany)

18:40 [ID102 High-Power Ultra-Efficient Hybrid Cycle Composed of a Fuel Cell, an Internal Combustion Engine and Thermochemical Recuperation](#)

David Diskin, Leonid Tartakovsky

Technion - Israel Institute of Technology (Israel)

19:00 [ID252 Online model adaption for energy management in Fuel Cell Electric Vehicles \(FCEV\)](#)

Ricardo Novella, Benjamín Pla, Pau Bares, Douglas Pinto

Universitat Politècnica de València (Spain)

19:20 [ID185 Assessment of liner-based thermal management strategies in hydrogen tank fast-filling via Computational Fluid Dynamics](#)

Ricardo Blanco-Aguilera, Manex Martínez-Agirre, Joanes Berasategi, Markel Penalba, Mounir Bou-Ali, Valentina Shevtsova

Mondragon Unibertsitatea (Spain); Ikerbaske (Spain)

- 19:40 [ID336 Use of H₂, CH₄, CO and their mixtures in a commercial automotive spark-ignition engine adapted to run on gaseous fuels](#)
- Pedro M. Diéguez, José Carlos Urroz, Miguel Arana, Luis M. Gandía
- Universidad Pública de Navarra (Spain)*

Room F. Pipelines and Hydrogen Infrastructure

- 18:00 [ID111 Enabling the injection of hydrogen in high-pressure gas grids: investigation of the impact on materials and equipment, legal, regulatory and technical aspects](#)
- Javier Sánchez-Laínez, Vanesa Gil, Alberto Cerezo, Maria Dolores Storch de Gracia, Agustín Pascual, Michael Walter, Virginia Madina
- Foundation for the Development of New Hydrogen Technologies in Aragon (Spain); ARAID Foundation (Spain); Redexis S.A. (Spain); German Technical and Scientific Association for Gas and Water (Germany); Tecnalía (Spain)*
- 18:20 [ID347 Quantifying the impact of hydrogen content on the thermodynamic properties for natural gas transportation by an accurate molecular model](#)
- Ismail I. I. Alkhatib, Lourdes F. Vega
- Khalifa University (EAU)*
- 18:40 [ID35 Distributing hydrogen to fuel cell vehicles using the gas grid: an assessment of contaminant levels](#)
- Oluwafemi Omoniyi, Thomas Bacquart, Abigail Morris, Niamh Moore, Arul Murugan, David Jones
- National Physical Laboratory (UK); Cadent Gas Ltd (UK)*
- 19:00 [ID227 Design of transport, systems ashore, storage in port and supply of hydrogen, in the framework of the OCEANH2 project](#)
- Eduardo García-Rosales, Beatriz Nieto, M. Dolores Storch de Gracia, Roberto Morales Burgos, Enrique Saborit, Pablo Martínez Fondón, Alberto Abánades
- Redexis S.A. (Spain); National Hydrogen Center (Spain); Universidad Politécnica de Madrid (Spain)*
- 19:20 [ID39 Practicalities of the use of hydrogen in sector shifting: experience from two islanded networks](#)
- Bill Ireland
- Logan Energy Ltd. (UK)*
- 19:40 [ID243 Review of Ammonia Technologies as a Green Hydrogen Storage Carrier](#)
- Pablo Molina, J. Javier Brey, Carlota Ríos, Celia Martínez de León
- Universidad Loyola Andalucía (Spain)*

Thursday, 19th May. Parallel Session 4 (15:00-17:00)

Room A. Hydrogen Production: Renewable

- 15:00 [ID236 Production of hydrogen by solar photocatalytic treatment of wastewaters](#)
Alberto Puga
Universitat Rovira i Virgili (Spain)
- 15:20 [ID232 Transforming the world's waste into renewable hydrogen for onsite power generation and vehicle fueling](#)
Jean-Louis Kindler, Angelica Gyllen
Ways2H (USA)
- 15:40 [ID292 Multi-Fuel Compact Renewable Hydrogen Generator for Mobility Applications](#)
Elisa Alcolea, Jorge Carrero, Juan Manuel Sánchez, Diego Ubeda, Carmen Jimenez-Borja, Ana Nieto, Ernesto Simón, G. Monjas, A. Escobar, J.L. Carreras, C. Fernández-Caballero, M.A Vega
Técnicas Reunidas, S.A. (Spain)
- 16:00 [ID201 MnFe₂O₄-Na₂CO₃ thermochemical cycle for H₂ production: investigating material modification strategies for performance improvement](#)
Francesco Torre, T. Aguilar, S. Doppiu, M. Oregui, J. Udaeta, N. Uranga, M. Hernaiz, P. Luis, E. Palomo
CIC energiGUNE (Spain); Euskal Herriko Unibertsitatea (Spain); Tekniker (Spain); Ikerbasque (Spain)
- 16:20 [ID204 Comparison of hydrogen production via microwave assisted water splitting in doped-ceria materials](#)
Aitor Domínguez Saldaña, Laura Navarrete Algaba, María Balaguer Ramírez, Joaquín Santos Blasco, Pedro José Plaza González, José Manuel Catalá Civera, José Manuel Serra Alfaro
ITQ-CSIC-UPV (Spain); Universitat Politècnica de València (Spain)
- 16:40 [ID314 Hydrogen production by thermochemical water splitting using La_{0.8}Ca_{0.2}BO_{3-δ} \(B=Co, Ni, Cu and Fe\) perovskites](#)
Alejandro Pérez Domínguez, María Orfila del Hoyo, María Linares Serrano, Raúl Sanz Martín, Javier Marugán Aguado, Raúl Molina Gil, Juan Ángel Botas Echevarría
Rey Juan Carlos University (Spain)

Room B. Hydrogen Production: Electrolysis

- 15:00 [ID118 Toward an overall optimization of the anion exchange membrane water electrolysis cell](#)
Ester López Fernández, Celia Gómez Sacedón, Jorge Gil-Rostra, Juan Pedro Espinós, Agustín R. González-Élipe, Francisco Yubero, Antonio de Lucas Consuegra
University of Castilla-La Mancha (Spain); ICMS-CSIC-Univ. Sevilla (Spain)
- 15:20 [ID179 Development of a new alkaline electrolyser associated to a renewable offshore plant](#)
Rodrigo Pérez, David Solera, Rafael Luque
ARIEMA Energía y Medioambiente S.L. (Spain)

- 15:40 [ID196 Alkaline electrolysis at sea: water purification strategies to reduce the levelized cost of hydrogen](#)
Rafael d'Amore-Domenech, Vladimir Luis Meca, Antonio Villalba-Herreros, Teresa J. Leo
Universidad Politécnica de Madrid (Spain)
- 16:00 [ID52 Modeling the effect of electrolyte recirculation rate in the liquid-gas separators of an AWE on the purity of the gas produced](#)
Héctor González, E. Amores, D. Abad, M. Sánchez
National Hydrogen Center (Spain)
- 16:20 [ID226 Green hydrogen production based on high efficiency and low degradation pulsed-current electrolysis](#)
Francisca Segura, José Manuel Andújar, Julio José Caparrós Mancera, Rocío García, Francisco José Vivas
University of Huelva (Spain)
- 16:40 [ID67 Simultaneous surface structuring and alloying of titanium fiber material for porous transport layers in PEM-Electrolysis](#)
Dorian Hüne, B. Bensmann, L. Stein, R. Reineke-Koch, A. Dittrich, W. Schade, T. Gimpel
Clausthal University of Technology (Germany); University Hannover (Germany); Institute for Solar Energy Research (Germany); Fraunhofer Heinrich Hertz Institute (Germany)

Room C. Hydrogen Storage

- 15:00 [ID304 Compressed hydrogen, the most efficient way to store energy. A comparison between compressed hydrogen and liquid hydrogen as energy storage system](#)
Daniel Ballorca Juez
Hiperbaric (Spain)
- 15:20 [ID322 Thermal management of Cryo-adsorbed hydrogen storage system](#)
Daniel Tsukerman, Nir Tzabar
Ariel University (Israel)
- 15:40 [ID80 TCD based real-time measurement of Ortho-Para hydrogen fraction](#)
Hyun Ji Kim, Yong Tae Yoon, Sarn Woo Karng
Korea Institute of Science and Technology (Republic of Korea); Seoul National University (Republic of Korea)
- 16:00 [ID161 Methanation of CO₂ on Cu in a tubular co-ionic SOEC](#)
Esperanza Ruiz Martínez, Juan Aldecoa, Ángel Morales, Meryem Farchado, José María Sánchez
CIEMAT (Spain); Sisener Ingenieros S.L. (Spain)
- 16:20 [ID158 CO₂ methanation over Ni catalysts supported on sol-gel prepared Pr-doped CeO₂](#)
Anastasios I. Tsiotsias, Nikolaos D. Charisiou, Christos Zotos, Victor Sebastián, Kyriaki Polychronopoulou, María A. Goula
University of Western Macedonia (Greece); Nanoscience Institute of Aragón and Materials Science Institute of Aragón, University of Zaragoza-CSIC (Spain); Khalifa University of Science and Technology (UAE)

16:40 [ID76 Advanced materials and Reactors for ENergy storage tHrough Ammonia \(ARENHA\)](#)

José Luis Viviente Viviente, F. Gallucci, R. Campana, X. Sun, S. Megel, W.I.F. David, G. van Zee, S. Pylypko, J.A. Medrano, C. Dumand, C. Rouselle, A. Ramirez-Santos

Tecnalia (Spain); Eindhoven University of Technology (The Netherlands); National Hydrogen Center (Spain); DTU (Denmark); Fraunhofer IKTS (Germany); Rutherford Appleton Laboratory (UK); Proton Ventures BV (The Netherlands); Elcogen AS (Estonia); Hydrogen Onsite, S.L. (Spain); Stellantis, Centre Technique Vélizy (France); University of Orléans (France); ENGIE Lab CRIGEN (France)

Room D. Fuel Cells & Hydrogen Systems Modelling

15:00 [ID297 Uncertainty quantification of production cost for a wind power-to-hydrogen system](#)

Sajjad Yousefian, Tubagus Aryandi Gunawan, Parisa Javadi, Rory F. D. Monaghan

National University of Ireland (Ireland); SFI Centre for Energy, Climate and Marine Research (Ireland); Princeton University (USA)

15:20 [ID58 Modeling and simulation of integrated hydrogen - solar PV systems](#)

Fernando Gutiérrez Martín, José A. Díaz López, Ángel Caravaca Huertas, Antonio J. Dos Santos García

Polytechnic University of Madrid (Spain)

15:40 [ID123 Optimisation of Green Hydrogen Production Facilities](#)

Andrew Campbell, Raúl Mateos

Advisian (Australia); Advisian (Spain)

16:00 [ID198 The hydrogen storage challenge: How does storage size and cost affect the techno-economic performance of hydrogen production?](#)

Cian Moran, Rory F.D. Monaghan

National University of Ireland (Ireland); SFI Centre for Energy, Climate and Marine Research (Ireland)

16:20 [ID202 Data analysis and parametrization for modelling a regenerative hydrogen storage with application in a regional housing sector](#)

Steffen Schedler, Stefanie Meilinger, Tanja Clees

University of Applied Sciences Bonn-Rhein-Sieg (Germany)

16:40 [ID217 Digital Twin technologies to optimize the planification and exploitation of hybrid plants with Power-to-Hydrogen](#)

Jesús La Parra Albaladejo, Cristina Corrales Quirós

Tecnatom, S.A. (Spain)

Room E. Stationary Applications

15:00 [ID65 Implementation of renewable hydrogen-based systems for the decarbonization of the stationary sector](#)

Víctor Manuel Maestre Muñoz, Alfredo Ortiz Sainz de Aja, I. Ortiz

University of Cantabria (Spain)

- 15:20 [ID205 Integration of Combined Cooling, Heating and Power Microgrids in Zero Energy Public Buildings with High Power Quality and Continuity Requirements](#)
Javier Tobajas, Félix García, Jesús Martín, Íñigo Ubierna
National Hydrogen Center (Spain); University of Córdoba (Spain)
- 15:40 [ID340 Increasing Combined Cycle Gas Turbines Flexibility via Power to Gas to Power Systems](#)
José García, Linus Engstam, Rafael Guédez
Royal Institute of Technology, KTH (Sweden)
- 16:00 [ID321 Hydrogen a storage solution of renewable energy of habitable mobile modules. LIFE ZEROENERGYMOD Project](#)
Carlos Arié, Pedro Casero
Aragon Hydrogen Foundation (Spain)
- 16:20 [ID100 Solenco Powerbox: sustainable world's electrification by the mass uptake of wind and solar PV](#)
Hugo Vandendorre, Francisco López
Solenco Power (Belgium)
- 16:40 [ID270 Grasshopper: A Modular and Flexible Hydrogen PEM Power Plant for Grid Balancing Services](#)
María Tejada Valderrama, Germán Nieto Cantero, Belén Sarmiento Marrón
Abengoa Innovación (Spain)

Room F. Hydrogen Production: Catalysts

- 15:00 [ID305 Production of hydrogen by dry reforming of methane over Ni/Al₂O₃ catalysts derived from sub-stoichiometric NiAl₂O₄ spinels](#)
Andoni Choya, Beatriz de Rivas, José Ignacio Gutiérrez-Ortiz, Rubén López-Fonseca
University of the Basque Country (Spain)
- 15:20 [ID262 CO₂-free hydrogen production by catalytic methane decomposition over rice husk-derived silica](#)
Gema Gómez-Pozuelo, Inés Moreno, Patricia Pizarro, Juan A. Botas, David P. Serrano
Rey Juan Carlos University (Spain); IMDEA-Energy (Spain)
- 15:40 [ID241 Catalytic behavior of transition metal carbide of group 5 in the methanol steam reforming](#)
Arturo Pajares, Pilar Ramírez de la Piscina, Narcis Homs
University of Barcelona (Spain); Catalonia Institute for Energy Research (Spain)
- 16:00 [ID83 Ammonia cracking with Pd-based membrane technology](#)
Igor Egaña, José Antonio Medrano, Jon Melénez, Andrés Galnares
H2SITE (Spain)
- 16:20 [ID233 Titanium dioxide electrodes for water photo-electrolysis: modelling of photoelectrochemical processes](#)

Alejandro Ansón-Casaos, José Carlos Ciria, Carlos Martínez-Barón, Ana M. Benito, Wolfgang K. Maser

ICB-CSIC (Spain); Universidad de Zaragoza (Spain)

16:40 [ID191 LOHC dehydrogenation on bimetallic Pt-Ni and Pt-Co catalysts](#)

Kevin Alconada, Pedro Luis Arias, Victoria Laura Barrio

University of the Basque Country (Spain)

Thursday, 19th May. Parallel Session 5 (17:30-19:30)

Room A. Hydrogen Production: Renewable

17:30 [ID62 Solar photocatalytic H₂ production by highly efficient laser engineered Au/TiO₂ photocatalysts](#)

Roberto Fiorenza, Marcello Condorelli, Stefano Andrea Balsamo, Luisa D'Urso, Giuseppe Compagnini, Salvatore Scirè

University of Catania (Italy)

17:50 [ID96 Hydrogen production from photoreforming of biomass using conventional and unconventional photocatalysts](#)

Stefano Andrea Balsamo, Roberto Fiorenza, Marcello Condorelli, Salvatore Scirè

University of Catania (Italy)

18:10 [ID121 SUNRGYZE: Photoelectrochemical Production of hydrogen](#)

Luis Villalba Trol, Mónica Sánchez Delgado, Maria Dolores Hernández Alonso, Ana Martínez González

Sunrgyze (Spain); Enagás S.A. (Spain); Repsol (Spain)

18:30 [ID239 IMDEA-Energy Frameworks as promising next-generation materials for green hydrogen production](#)

Sergio Carrasco, Pablo Salcedo-Abraira, Eva Montero-Lanzuela, María Cabrero-Antonino, Sergio Navalón, Hermenegildo García, Patricia Horcajada

IMDEA-Energy (Spain); ITQ-CSIC-UPV (Spain); Polytechnic University of Valencia (Spain)

18:50 [ID278 Role of Zr Doping in Pt/TiO₂ Photocatalysts for Hydrogen Production](#)

Irene Barba-Nieto, Uriel Caudillo-Flores, María Natividad Gómez-Cerezo, Anna Kubacka, Marcos Fernández-García

ICP-CSIC (Spain)

19:10 [ID354 Innovation in green hydrogen production](#)

Ron Bol, S. Drissen, W. Corsten

Hysolar (The Netherlands); Aannemingsbedrijf Jos Scholman (The Netherlands)

Room B. Hydrogen Production: Electrolysis

- 17:30 [ID93 Novel Coatings and Resistance Measurement Methods for Bipolar Plates](#)
Sigrid Lædre, Corneliu M. Craciunescu, Thulile Khoza, Nicolae Vaszilcsin, Aurel Ercuta
Sintef Industry (Norway); Politehnica University of Timisoara (Romania)
- 17:50 [ID133 PGM-free sustainable coating alternatives for anodic bipolar plates and porous transport layers in polymer electrolyte membrane water electrolyzers](#)
Lucía Mendizabal, E. G-Berasategui, S. Laedre, N. Rojas
Tekniker (Spain); Sintef Industry (Norway); National Hydrogen Center (Spain)
- 18:10 [ID264 The Challenges of Green Hydrogen from Renewable Energy Sources](#)
Albert Bos, R. van Dongen
XINTC Global (The Netherlands)
- 18:30 [ID97 Reducing costs by using technology ready safety solutions](#)
Fernando Sánchez, Ignacio Astigarraga
Roxtec S&P (Spain)
- 18:50 [ID225 Experimental strategies of operation and preventive maintenance in electrolyzers for efficient hydrogen production](#)
Julio José Caparrós Mancera, Francisca Segura, José Manuel Andujar, Eduardo López
Spanish National Institute of Aerospace Technology (Spain); University of Huelva (Spain)
- 19:10 [ID131 H2BASQUE – Technologies for boosting the Hydrogen economy in the Basque Country: Green hydrogen production](#)
Ekaín Fernández, Beatriz Calleja, Francisco Alcaide, Stefania Doppiu, Mikel Oregui-Bengoechea, Eva G-Berasategui, Elías Unzueta, J. Irigoyen
TECNALIA (Spain); TUBACEX INNOVACION AIE (Spain); CIDETEX (Spain); CIC energiGUNE (Spain); UPV/EHU (Spain); TEKNIKER (Spain); PETRONOR INNOVACION (Spain); BASQUE ENERGY CLUSTER (Spain)

Room C. Hydrogen Storage

- 17:30 [ID73 Development of novel filler strategies and reinforced elastomeric grades to be used in high-pressure hydrogen gas conditions](#)
Clara Clute, Annika Lenger, Winoj Balasooriya, Andreas Hausberger, Geralt Pinter, Sandra Schlögl
Polymer Competence Center Leoben GmbH (Austria); Montanuniversität Leoben (Austria)
- 17:50 [ID107 New Fastcure 2 Towpreg for Hydrogen 70 MPa On-board type IV Composite Pressure Vessel Manufacturing](#)
Stéphane Villalonga, Christophe Magnier, Frédéric Démaret, Martin Jégou, Sébastien Livi, Jannick Duchet-Rumeau, Jean-François Gérard
Central Commission of Nuclear Energy CEA (France); VITECH COMPOSITES (France); National Institute of Applied Sciences of Lyon (France)
- 18:10 [ID178 Advanced Hydrogen Storage System for a High-Performance Fuel Cell Powertrain](#)
Klaas Kunze, Andreas Pelger, Thomas Gruber

BMW AG (Germany)

- 18:30 [ID238 Large-scale storage of green hydrogen in concrete Gravity Based Structures \(GBS\) associated to renewable offshore plants](#)

Irene Sevilla de la Llave, Natividad Sánchez López, José Manuel González Herrero, Manuel Biedma García

Acciona Ingeniería (Spain)

- 18:50 [ID116 Selection of LOHC and reactor configuration for the optimization of the hydrogenation step in chemical hydrogen storage](#)

Adrián García, Pablo Marín, Salvador Ordóñez

University of Oviedo (Spain)

- 19:10 [ID29 Large scale hydrogen distribution via Liquid Organic Hydrogen Carriers \(LOHC\)](#)

Rafael Schmidt

Hydrogenious LOHC Technologies GmbH (Germany)

Room D. Fuel Cells & Hydrogen Systems Modelling

- 17:30 [ID69 rSOC-based microgrid: development of medium level controls in a multilevel algorithm framework](#)

Marco Califano, Fabiana Califano, Marco Sorrentino, Marc Allen Rosen, Cesare Pianese

University of Salerno (Italy); University of Ontario Institute of Technology (Canada)

- 17:50 [ID170 A Hybrid 1D-CFD Numerical Framework for Hydrogen-based Fuel Cell and Electrolysers](#)

Markel Peñalba, Joanes Berasategi, Ricardo Blanco-Aguilera, Manex Martínez, Mounir Bou-Ali, Valentina Shevtsova

Mondragon Unibertsitatea (Spain); Ikerbasque (Spain)

- 18:10 [ID319 Parameter fitting of a reversible Solid Oxide stack model](#)

Ignasi Lleonsi, Lucile Bernadet, Marc Torrell, María Serra

IRI-CSIC-UPC (Spain); Catalonia Institute for Energy Research (Spain)

- 18:30 [ID72 Green liquid hydrogen supply chains for future aviation – A techno-economic well-to-tank assessment](#)

Lucas Sens, Fabian Carels, Ulf Neuling, Martin Kaltschmitt

Hamburg University of Technology (Germany)

- 18:50 [ID85 Risk Assessment and Ventilation Modelling of Hydrogen Installation and Generation Units](#)

Daniel Prasetyo, Alberto Costilla Álvarez, Aurora García Jiménez

CIRCE Foundation (Spain)

- 19:10 [ID169 Power to Gas and distribution strategy: Technoeconomic assessment for an MSW biogas upgrading plant](#)

Francisco Luño, Andrés Sanz-Martínez, Paúl Durán, Eva Francés, Javier Herguido, José-Angel Peña

Aragon Institute of Engineering Research, University of Zaragoza (Spain)

Room E. Stationary & Other Applications

- 17:30 [ID141 AVL's Solid Oxide Cell System Solutions for a Hydrogen Based Energy System](#)
Martin Hauth, Bernd Reiter
AVL List GmbH (Austria)
- 17:50 [ID140 The future of power generation starts today - the stationary fuel cell system by Bosch](#)
Wayne-Daniel Kern, Sebastian Budischin
Robert Bosch GmbH (Germany)
- 18:10 [ID95 Decarbonization of the Steelmaking Industry via Hydrogen based Technologies](#)
Itsaso Auzmendi Murua, Juan Blanco Requesens
Sarralle Engineering (Spain)
- 18:30 [ID210 Biogas upgrading by intensified methanation \(SESaR\): reaction - desorption cycles with Ni-Fe/Al₂O₃ catalyst and zeolite](#)
Víctor Daniel Mercader Plou, Mar Rincón, Andrés Sanz Martínez, Paúl Durán, Eva Francés, Javier Herguido, José Ángel Peña
Aragon Institute of Engineering Research, University of Zaragoza (Spain)
- 18:50 [ID253 Activity of bi-metallic hydrotalcite derived materials for photocatalytic CO₂ methanation](#)
Rafael Canales Larrazabal
University of the Basque Country (Spain)
- 19:10 [ID349 Ni supported on Ferrierite and ITQ-6 zeolites for catalytic methanation of CO₂. Effect of delamination on the catalytic performance](#)
Raul da Silva, Antonio Chica
ITQ-CSIC-UPV (Spain)

Room F. Hydrogen Production: Catalysts

- 17:30 [ID159 Dry reforming of ethane over Ni catalysts supported on Al₂O₃ modified with MgO, CaO and La₂O₃](#)
Anastasios I. Tsiotsias, Nikolaos D. Charisiou, Víctor Sebastián, Safa Gaber, Steven J. Hinder, Mark A. Baker, K. Polychronopoulou, María A. Goula
University of Western Macedonia (Greece); Nanoscience Institute of Aragón and Materials Science Institute of Aragón, University of Zaragoza-CSIC (Spain); Khalifa University of Science and Technology (UAE); University of Surrey (UK)
- 17:50 [ID303 Hydrogen production by oxidative steam reforming of acetic acid on Ni catalysts: Influence of the support and La addition](#)
Anabel Morales Cabezas, Pedro Julio Megía Hervás, José Antonio Calles Martín, Arturo Javier Vizcaíno Madrudejos, Alicia Carrero Fernández
Rey Juan Carlos University (Spain)
- 18:10 [ID299 Kinetic modelling for the dehydrogenation of formic acid on Pd/C catalysts considering the deactivation](#)
Celia Martín, Asunción Quintanilla Gómez, José Antonio Casas

Universidad Autónoma de Madrid (Spain)

- 18:30 [ID266 Ni⁰/Mg\(Al\)O catalysts derived from layered double hydroxides for H₂ production by cellulose aqueous phase reforming](#)

Andrea Fasolini, E. Orfei, Francesco Basile

University of Bologna (Italy)

- 18:50 [ID129 Influence of catalysts, temperature and gasifying agent on H₂ production from palm kernel shell](#)

Juan C. Acevedo, Erika Arenas, Fausto Posso, Carlos Imbachi

Universidad de Santander (Colombia); Universidad Pontificia Bolivariana (Colombia); Universidad Nacional de Litoral (Argentina)

- 19:10 [ID37 Role of catechols and guaiacols on the deactivation of NiAl₂O₄ catalyst in bio-oil steam reforming](#)

L. Landa, Aingeru Remiro Eguskiza, N. García-Gómez, G. Elordi, B. Valle, A. Gayubo, J. Bilbao

University of the Basque Country (Spain)

Friday, 20th May. Parallel Session 6 (11:30-13:30)

Room A. Hydrogen Production: Renewable / Electrolysis

- 11:30 [ID120 Optimal Coupling of Solar Electrolysis Systems. Multi-Objective Optimization of Component Relative Sizing](#)

Felipe Gallardo, José García, Andrea Monforti Ferrario, Justin NW Chiu, Gabriele Comodi

Royal Institute of Technology, KTH (Sweden); Marche Polytechnic University (Italy); ENEA (Italy)

- 11:50 [ID276 Modelling and Performance Analysis of a SOE System integrating PV, Concentrating Solar Heat and Thermal Energy Storage](#)

Beatriz Herrero, José González-Aguilar, Manuel Romero

IMDEA-Energy (Spain)

- 12:10 [ID271 Green hydrogen production by means of solar heat and power in high temperature solid oxide electrolyzers](#)

A. Giaconia, M. Della Pietra, P. Moreno, M. Testi, C. Pellegrini, S. Diethelm, M. Romero, José González-Aguilar, M. Robino, J. van Herle, B. Morico, J. Dobrée

ENEA (Italy); Capital Energy S.L. (Spain); Fondazione Bruno Kessler (Italy); SOLIDpower S.A. (Switzerland); IMDEA-Energy (Spain); Snam SpA (Italy); Ecole Polytechnique Federale de Lausanne (Switzerland); NextChem Srl (Italy); Stamicarbon BV (The Netherlands)

- 12:30 [ID154 Optimal Integration of Co – Electrolysis in a Power-to-Liquid Industrial Process](#)

Angel Molina-García, José Javier López-Cascales, José Sánchez-Luján

Polytechnic University of Cartagena (Spain)

- 12:50 [ID176 Measures to improve electrolyser's competitiveness](#)

Luis Manuel Santos Moro, Luis Del Barrio Castro, Ana Márquez Altemir

EDP España (Spain); Arthur D. Little S.L. (Spain)

13:10 [ID311 VITALE PROJECT, One of the first mass green hydrogen production plants in Europe becomes a reality](#)

Fernando Román, Ricardo Izquierdo, Philippe Guinot

pHYnix Iberia (Spain); pHYnix SAS, París (France)

Room B. Hydrogen Production: Bio Hydrogen / Bio Gasification

11:30 [ID31 Clean syngas as precursor to green hydrogen from a versatile commercial-scale two-stage gasification and plasma refining](#)

M. Bacon, S. Saberi, Jordi Gallego

OMNI Conversion Technologies (Canada) ; OMNI Conversion Technologies (Spain)

11:50 [ID134 Process simulation of renewable hydrogen production by Sorption Enhanced Steam Reforming \(SESR\) of Biogas](#)

Alma Capa, Yongliang Yan, Fernando Rubiera, Covadonga Pevida, María Victoria Gil, Peter Clough

INCAR-CSIC (Spain); Cranfield University (UK); Newcastle University (UK)

12:10 [ID145 H₂ production via Glycerol Sorption Enhanced Steam Reforming](#)

Gemma Grasa, Claudia Navarro, José Manuel López, Isabel Martínez, Ramón Murillo

ICB-CSIC (Spain)

12:30 [ID240 Analysis of the integration of bioethanol production plants with bioethanol steam reforming processes to produce hydrogen](#)

Elena Castilla, D. Sopeña, H. Olmedo, A. Horrillo

CIDAUT (Spain); University of Valladolid (Spain)

12:50 [ID30 Numerical simulation of ethanol thermal partial oxidation in a mesochannel-based reactor to produce hydrogen-rich syngas](#)

Daniel Fernández-Galisteo, Eduardo Fernández-Tarrazo, Carmen Jiménez, Vadim N. Kurdyumov

CIEMAT (Spain); Universidad Carlos III de Madrid (Spain)

13:10 [ID267 Integrated Membrane Reactor for hydrogen separation](#)

Jon Meléndez, José A. Medrano, Igor Egaña, Andrés Galnares

Hydrogen Onsite S.L. (Spain)

Room C. Hydrogen Storage

11:30 [ID189 Analysis of potential strategies to improve hydrogen recovery from LOHC systems](#)

José María Sánchez-Hervás, Carla Pravos Gonzalo, Marta Maroño Bujan, Esperanza Ruiz Martínez

CIEMAT (Spain); Complutense University of Madrid (Spain)

11:50 [ID117 Decalin-naphthalene as promising chemical hydrogen carrier: optimization of dehydrogenation steps](#)

Pablo Rapado-Gallego, Eva Díaz, Salvador Ordóñez

University of Oviedo (Spain)

12:10 [ID105 Accelerating global demonstration and commercialization of large-scale underground hydrogen storage under IEA's Hydrogen Technology Collaboration Programme](#)

Serge van Gessel, Remco Groenenberg, Maartje Boon, Carla Robledo, Maarten Huijgen, Marina Holgado, Hadi Hajibeygi

TNO (The Netherlands); Technical University of Delft (The Netherlands); Ministry of Economic Affairs and Climate Policy (The Netherlands); Ariema Energía y Medio Ambiente (Spain)

12:30 [ID109 Techno-economic requirements for underground renewable hydrogen storage in porous media](#)

Jan Michalski

Ludwig-Bölkow-Systemtechnik GmbH (Germany)

12:50 [ID125 A novel methodology to estimate dispersivity in Underground Hydrogen Storage](#)

Marco Maniglio, Alberto Pizzolato, Paola Panfili, Alberto Cominelli

Eni S. p. A. (Italy)

13:10 [ID137 Hystories project: technical developments and deployment outlooks for pure hydrogen storage in depleted fields and aquifers](#)

Arnaud Réveillère, Jan Michalski, Bernd Löder, Ceri Vincent, Martin Wagner, Jesús Simón, Katarzyna Luboń

Geostock (France); Ludwig-Boelkow-Systemtechnik GmbH (Germany); Montanuniversitaet Leoben (Austria); Co2geonet (France); MicroPro GmbH (Germany); Foundation for the Development of New Hydrogen Technologies in Aragon (Spain); Mineral and Energy Economy Research Institute of the Polish Academy of Sciences (Poland)

Room D. Fuel Cells & Hydrogen Systems Modelling

11:30 [ID245 Levelized Costs of Storage \(LCOS\) for a Green Hydrogen System](#)

Celia Martínez de León, J. Javier Brey, Carlota Ríos

Universidad Loyola Andalucía (Spain)

11:50 [ID287 Multizone thermodynamic model to design piston compressors for hydrogen at high pressures](#)

Diego Fernández Chéliz, Miguel Castaños Calleja, Daniel Ballorca Juez, Alfonso Horrillo Güemes

CIDAUT (Spain); Hiperbaric (Spain); University of Valladolid (Spain)

12:10 [ID317 A Simulation Toolchain for the Refueling of Hydrogen Vehicles](#)

Klaus Esser, Julius Rauh, Nejc Klopčič, Markus Sartory, Alexander Trattner

HyCentA Research GmbH (Austria)

12:30 [ID90 Hydrogen substitution potentials inside the energy systems of aviation industry sites](#)

Lars Baetcke, Piyush Rangani, Fabian Carels, Lucas Sens, Ulf Neuling, Adrian Herberger, Daniel Holsten, J. Jepsen, K. Taube, T. Klassen

Helmholtz-Zentrum Hereon GmbH (Germany); Hamburg University of Technology (Germany); Airbus Operations GmbH (Germany)

12:50 [ID75 Integration of hydrogen into the energy infrastructure of aviation industry sites - The determination of a cost-optimized ramp-up](#)

Fabian Carels, Lucas Sens, Lars Baetcke, Piyush Rangani, Ulf Neuling, Martin Kaltschmitt

Hamburg University of Technology (Germany); Helmholtz-Zentrum Hereon GmbH (Germany)

13:10 [ID320 Analysis of production cost under uncertainty for an integrated wind power-to-hydrogen-to-methanol system](#)

Sajjad Yousefian, Parisa Javadi, Tubagus Aryandi Gunawan, Rory F. D. Monaghan

National University of Ireland (Ireland); National University of Ireland (NUI) (Ireland); SFI Centre for Energy, Climate and Marine Research (Ireland); Princeton University (USA)

Room E. Commercialization, Codes and Standards

11:30 [ID203 Status of Regulations on the use of Fuel Cells and Hydrogen in the Merchant Fleet](#)

Antonio Villalba-Herreros, Vladimir L. Meca, Rafael d'Amore-Domenech, Teresa J. Leo

Polytechnic University of Madrid (Spain)

11:50 [ID84 Advances in fuel cells standardization from the National Committee CTN 222](#)

Jesús Martín Pérez, Ana M. Mariblanca Sánchez, Antonio Martínez Chaparro

Centro Nacional del Hidrógeno (Spain); UNE (Spain); CIEMAT (Spain)

12:10 [ID357 Development of integrated renewable hydrogen value chain at national level](#)

Tomás Malango

Repsol (Spain)

12:30 [ID103 Gaps and opportunities across hydrogen end-uses: a bottom-up analysis of the existing business activities in Europe](#)

Davide Tonelli, Simone Braccio, Daniele Proverbio, Paolo Pino, Piera Della Porta

Engineer College Italy (Italy); Catholic University of Louvain (Belgium); Grenoble Alpes University CEA (France); University of Luxembourg (Luxembourg); Politecnico di Torino (Italy)

12:50 [ID257 Present and future scenarios of Hydrogen storage in microgrids: A techno-economic assessment](#)

Ander Martínez Alonso, Daniele Costa, Fatma Zahra Sallawi, Guillermo Matute, Lieselot Vanhaverbeke, Maarten Messagie, Thierry Coosemans

Vrije Universiteit Brussel (Belgium); Instrumentación y Componentes S.A. (Spain)

13:10 [ID98 SEAFUEL: green hydrogen production from solar and seawater](#)

Pau Farràs Costa

National University of Ireland (Ireland)

Room F. Associations, Countries & Assessments

11:30 [ID193 The International Energy Agency's Hydrogen Technology Collaboration Programme](#)

Paul Lucchese, Marcel Weeda, E. Ohira, Marina Holgado

CEA (France); TNO (The Netherlands); NEDO (Japan); ARIEMA Energía y Medioambiente S.L (Spain)

- 11:50 [ID291 LIFE3H: Maing Hydrogen Valleys a reality](#)
Chiara Barchiesi, [Iris Flacco](#), Giovanni Cinti, Enrico Bocci, Gabriele Giustiniani, Raffaele Alfonsi, Antonino Tripodi
Regione Abruzzo, Service of the President's Cabinet (Italy); University of Perugia (Italy); Guglielmo Marconi University (Italy); UNeed.IT Srl (Italy)
- 12:10 [ID132 H24NEWAGE – Development of advanced technologies for hydrogen production, storage and distribution, and technology transfer to Industry for the new era of hydrogen in Spain](#)
[Ekain Fernández](#), Carmen Bartolomé, Gonzalo G. Fuentes, Ismael Lozano
TECNALIA (Spain); University Institute of Mixed Research CIRCE (Spain); AIN (Spain); CARTIF Technology Center (Spain)
- 12:30 [ID219 Prospects for renewable Hydrogen in the implementation of the EU hydrogen strategy in Sweden and Spain – An analysis of current and future projects](#)
[Sergi Contelles](#), Karl Hillman, Katja Tasala Gradin, María Cabrelles
DEKRA Process Safety Spain (Spain); University of Gävle (Sweden)
- 12:50 [ID157 Integrated modelling for supporting long-term energy and climate planning. The role of hydrogen in the decarbonisation of the Basque industry](#)
[Diego García-Gusano](#), Eneko Arrizabalaga, Joan Manuel F. Mendoza, Iñaki Arto
TECNALIA (Spain); Mondragon Unibertsitatea (Spain); IKERBASQUE (Spain); Basque Centre for Climate Change (Spain)
- 13:10 [ID60 A framework for evaluating hydrogen export potential: Hydrogen Competitiveness Index](#)
[Dawood Hjeij](#), Yusuf Bicer, Muammer Koc
Hamad Bin Khalifa University (Qatar)

- Posters Communications -

Hydrogen Production: Solar Hydrogen / Renewable Hydrogen

- Poster 1 [ID254 Where is Golden Hydrogen in the current clean hydrogen momentum?](#)
M. Júlia Terra Miranda
National University of Ireland (Ireland)
- Poster 2 [ID155 Green Hydrogen Viability from Off-peak Grid Periods for Fuel Cell Vehicles: The Dominican Republic Case Study](#)
Junior Alexis Villanueva-Rosario, Angel Molina-García, José Javier López-Cascales,
Universidad Politécnica de Cartagena (Spain)
- Poster 3 [ID295 Production of renewable or low-carbon hydrogen from an industrial perspective by TECNICAS REUNIDAS](#)
Miguel Angel Vega Pacho, Ernesto Simón Camacho, Carmen Jiménez-Borja, Ana Nieto Prado, Elisa Alcolea Coronel
Técnicas Reunidas, S.A. (Spain)
- Poster 4 [ID81 Understanding photo-catalysts performance for green hydrogen generation from H₂S splitting](#)
Lourdes Vega, Yuting Li, Daniel Bahamon, Ismail I. I. Alkhatib, Mutasem Sinnokrot, Khalid Al-Ali, Lourdes Vega
Khalifa University of Science and Technology (UAE)
- Poster 5 [ID277 Structure and Activity of Pt-loaded B-doped g-C₃N₄ Catalysts for Sunlight-driven Production of Hydrogen](#)
Uriel Caudillo-Flores, Irene Barba-Nieto, María Natividad Gómez-Cerezo, Enrique Rodríguez-Castellón, Marcos Fernández-García, Anna Kubacka
ICP-CSIC (Spain); University of Málaga (Spain)
- Poster 6 [ID288 Hydrogen photoproduction of TiO₂-based systems through co-deposition of Pt and SnS₂](#)
Irene Barba-Nieto, Konstantinos C. Christoforidis, Marcos Fernández-García, Anna Kubacka
ICP-CSIC (Spain); Democritus University of Thrace (Greece)
- Poster 7 [ID289 Thermo-photo production of hydrogen using ternary Pt-CeO₂-TiO₂ catalysts](#)
Uriel Caudillo-Flores, Irene Barba-Nieto, Mario J. Muñoz-Batista, Debora Motta Meira, Marcos Fernández-García, Anna Kubacka, Konstantinos C. Christoforidis, Marcos Fernández-García, Anna Kubacka
ICP-CSIC (Spain); National Autonomous University of México (México); University of Granada (Spain); Argonne National Laboratory (USA); Canadian Light Source Inc. (Canada)
- Poster 8 [ID315 Reticulated porous ceramic \(RPC\) structures of La_{0.8}Al_{0.2}NiO_{3-δ} perovskite for H₂ production by thermochemical water splitting](#)
Alejandro Pérez Domínguez, María Orfila del Hoyo, María Linares Serrano, Raúl Sanz Martín, Javier Marugán Aguado, Raúl Molina Gil, Juan Ángel Botas Echevarría
Rey Juan Carlos University (Spain)

Poster 9 [ID294 Scaling up and demonstration of a compact bioethanol processor for renewable hydrogen production and purification](#)

Elisa Alcolea Coronel, Carmen Jiménez-Borja, Diego Ubeda, Ana Nieto Prado, Jorge Carrero, Juan Manuel Sanchez, J.L. Carreras, D. Blanco, A. Escobar, Alejandro Correal, G. Monjas, Y. Remírez, M.A. Vega

Técnicas Reunidas, S.A. (Spain)

Hydrogen Production: Electrolysis / Electrolyzers

Poster 10 [ID213 Methanol electrolyser and direct methanol fuel cell test bench](#)

Vladimir L. Meca, Óscar Santiago Carretero, Antonio Villalba-Herreros, Rafael d'Amore Domenech, Teresa J. Leo Mena

Polytechnic University of Madrid (Spain); University of Bremen (Germany)

Poster 11 [ID309 Waste heat from electrolyzers to produce fresh water](#)

Agustín Torralba

Alfa Laval (Spain)

Poster 12 [ID325 Challenges and strategies for large-scale hydrogen production by alkaline water electrolysis using wind energy](#)

Ernesto Amores Vera; Nuria Rojas; Margarita Sánchez-Molina; Gema Sevilla; David Abad; Gonzalo Manjavacas; Luis Diego García, F. J. Ramírez, J. Fernández de Manzanos

NORDEX Energy Spain (Spain)

Poster 13 [ID359 HANNEL-progress towards development of a cost-efficient hydrogen production unit based on anion exchange membrane \(AEM\) electrolysis](#)

Thulile Khoza

Sintef Industry (Norway)

Hydrogen Production: Bio Hydrogen / Bio Gasification

Poster 14 [ID128 Techno-economic assessment of manure to hydrogen plants: a real case study based on a cattle farm in an isolated location](#)

Filippo Racanella, Guillermo Matute, Marta Gandiglio, Julio Guillén Angel

Politecnico di Torino (Italy); Instrumentación y Componentes S.A. (Spain); CIRCE – Research Center for Energy Resources and Consumption (Spain)

Poster 15 [ID142 Long-term biohydrogen production from soft drink industry non-conforming products](#)

Santiago Barreiro-Vescovo, Mónica Figueroa, Angela Rodríguez Abalde

EnergyLab (Spain)

Poster 16 [ID329 Utilizing the sewage sludge as a zero emissions energy source for production of hydrogen](#)

Andjelina Bubalo, Dražen Vouk, Danica Maljković

University of Zagreb (Croatia); Dok-Ing Energo Ltd. (Croatia)

Poster 17 [ID335 H₂ production by sorption enhanced steam reforming \(SESR\) of biogas containing H₂S](#)

Alma Capa, Roberto García, María Pilar González-Vázquez, De Chen, Fernando Rubiera, María Victoria Gil, Covadonga Pevida

INCAR-CSIC (Spain); Norwegian University of Science and Technology (Norway)

Poster 18 [ID342 Modeling and experimental study on the H₂ production from biomass gasification in a bubbling fluidized bed](#)

María del Pilar González Vázquez, Roberto García Fernández, María Victoria Gil Matellanes, Fernando Rubiera González, Covadonga Pevida García

INCAR-CSIC (Spain)

Hydrogen Production: Catalysts

Poster 19 [ID182 Hydrogen production by aqueous phase reforming of glycerol](#)

Raquel Raso Roka, L. García, J. Ruiz, M. Oliva, J. Arauzo

Aragon Institute for Engineering Research, University of Zaragoza (Spain)

Poster 20 [ID25 Methanol steam reforming in a membrane reactor for high purity hydrogen production](#)

Alejandro Cifuentes López, R. Torres, J. Llorca

Polytechnic University of Catalunya (Spain)

Poster 21 [ID221 Production of hydrogen over CuZnO_x-based methanol reformers for fuel cell applications](#)

Konstantinos Kappis, Joan Papavasiliou, Marcin Kuśmierz, Grzegorz Słowik, Wojciech Gac, George Avgouropoulos

University of Patras (Greece); Foundation for Research and Technology-Hellas (Greece); Maria-Curie Skłodowska University (Poland)

Poster 22 [ID224 Low temperature steam reforming of methanol over hydrothermally prepared CuZn oxide catalysts](#)

Konstantinos Ar. Papageorgiou, Marcin Kuśmierz, Grzegorz Słowik, Wojciech Gac, Joan Papavasiliou

University of Patras (Greece); Maria-Curie Skłodowska University (Poland)

Hydrogen Storage: Chemical Carriers / Hydrides

Poster 23 [ID68 "Hydride cycle" as an Effective Method for Synthesizing Hydrogen-storage Alloys in Ti-V, Ti-V-Mn and Ti-V-Cr Systems](#)

Anahit Aleksanyan, Seda Dolukhanyan, Davit Mayilyan, Ofelya Ter-Galstyan, Nune Mnatsakanyan

A.B. Nalbanyan Institute of Chemical Physics of Armenian (Armenia)

Poster 24 [ID71 TiFe alloys produced by “Hydride Cycle” method](#)

Davit Mayilyan, Anahit Aleksanyan

A.B. Nalbanyan Institute of Chemical Physics of Armenian (Armenia)

Poster 25 [ID99 Chemically reduced graphene oxide as a promising candidate for hydrogen storage](#)

Rodolfo Fernández-Martínez, María Belén Gómez-Mancebo, César Augusto Maffiotte, Laura Jiménez Bonales, Natalia Brea, Antonio Molinero, J. M. Barcala, S. Fernández, N. González, J. Cárabe, A. Boscá, J. Pedrós, G. Conte, A. Policicchio, J. Martínez, F. Calle, A.J. Quejido, Isabel Rucandio

CIEMAT (Spain); Astrobiology Center CSIC-INTA (Spain); Institute of Optoelectronic Systems and Microtechnology (Spain); Polytechnic University of Madrid; University of Calabria (Italy)

Poster 26 [ID160 Dehydrogenation of the LOHC perhydro-dibenzyltoluene in a microstructured reactor](#)

Ellen Gapp, J. Thönnissen, P. Pfeifer

Karlsruhe Institute of Technology (Germany)

Hydrogen Storage: Gas / Liquefaction

Poster 27 [ID293 Feasibility of cryoadsorption on Metal-Organic Frameworks for large-scale hydrogen storage: construction and operation costs comparison with compressed gas technology](#)

José Antonio Villajos Collado

Federal Institute for Materials Research and Testing (Germany)

Poster 28 [ID348 A study of temperature and flow measurement using fiber optic sensor in cryogenic environment](#)

Michael Lee, Joseph Chul Chung

CyToniQ (USA); CyToniQ (Korea)

Poster 29 [ID343 Different ways to store massive quantities of hydrogen](#)

Louis Londe, Arnaud Réveillère

Geostock (France)

Poster 30 [ID244 Large-scale hydrogen storage methods: a reasoned comparison](#)

Carlota Ríos, Celia Martínez de León, Tamara Guerrero, J. Javier Brey

Universidad Loyola Andalucía (Spain)

Electrocatalysts / Electrodes (Fuel Cells and Electrolyzers)

Poster 31 [ID165 Structure optimized Catalyst Coated Membranes for PEM-FC and PEM-WE applications](#)

Nadine Zimmerer, Philipp Quarz, Philip Scharfer, Wilhelm Schabel

Karlsruhe Institute of Technology (Germany)

Poster 32 [ID211 Surface and bulk analysis of electro sprayed catalyst layers for PEMFC](#)

Susana Merino, Esmeralda Muñoz, Gonzalo de Diego, M Antonia Folgado Martínez, Luis Duque, Antonio Martínez Chaparro

CIEMAT (Spain)

Poster 33 [ID183 Boosting hydrogen technologies with femtosecond laser structured catalysts](#)

V. Hoffmann, D. Hüne, L. Hoffmann, L. Lentz, W. Schade, T. Turek, Thomas Gimpel

Clausthal University of Technology (Germany); Fraunhofer Heinrich Hertz Institute (Germany)

Poster 34 [ID280 Facile synthesis of nitrogen-doped carbon decorated NiFe₂O₄ with enhanced OER performance](#)

Gebrehiwet Abrham Gebreslase, María Victoria Martínez-Huerta, David Sebastián, María Jesús Lázaro

ICB-CSIC (Spain); ICP-CSIC (Spain)

Poster 35 [ID283 Oxygen reduction reaction at 2D electrocatalysts](#)

Sergio Fajardo, Stefan Delgado, Yapci Remedios Díaz, Carmen Arévalo, Gonzalo García, Elena María Pastor Tejera

University of La Laguna (Spain)

Fuel Cells Components & Stacks

Poster 36 [ID26 Proposal of a new technique to obtain some fuel cell internal parameters using polarization curve tests and EIS results](#)

Guillermo Gómez, Jesús Maellas Benito, Pilar Argumosa, Adrián Correro

National Institute of Aerospace Technology (Spain)

Poster 37 [ID139 A study of the eCoCell diffusion layer with different graphene content in the MPL](#)

Andrés Jerez Navarro, Modesto Aguirre Gómez, Carol Anne Mateau Ortín, Ángel Molina García, José Javier López Cáscales

Universidad Politécnica de Cartagena (Spain)

Poster 38 [ID151 Sol-gel organic-inorganic acid blends based on styrene-ethylene-butylene-styrene block copolymer SEBS and \(MPTMS-GPTMS\) for PEMFCs](#)

Carmen del Río, Faber Díaz, Enrique Morales, Mario Aparicio, Jadra Mosa

ICTP-CSIC (Spain); ICV-CSIC (Spain)

Poster 39 [ID162 Process parameters influencing the membrane direct coating of catalyst coated membranes \(CCM\)](#)

Philipp Quarz, Nadine Zimmerer, Philip Scharfer, Wilhelm Schabel

Karlsruhe Institute of Technology (Germany)

Poster 40 [ID66 Feasibility of using titanium-based materials for PEMFC bipolar plates](#)

Carlos Romero, Elena Gordo

Universidad Carlos III de Madrid (Spain)

Poster 41 [ID199 Application of bipolar HiPIMS to enhance the durability performance of carbon coatings in metallic bipolar plates](#)

José Antonio Santiago Varela, I. Fernández, P. Díaz-Rodríguez, M. Panizo, M. Morales, C. Molpeceres, J.C. Sánchez-López, L. Mendizabal, G. Sevilla, M. Sánchez-Molina, N. Rojas

Nano4Energy (Spain); Polytechnic University of Madrid (Spain); ICMS-CSIC-University of Seville (Spain); IK4-Tekniker (Spain); National Hydrogen Center (Spain)

Poster 42 [ID108 Water management and component selection for alkaline membrane fuel cells - an optimisation study](#)

Claudia Käding, Kevin Obermann, Henrike Schmies, Corinna Harms

German Aerospace Center DLR (Germany)

Poster 43 [ID124 Multi-scale modeling of anode-supported solid oxide fuel cells](#)

Dong Hyup Jeon, Sangwon Kim

Dongguk University (Republic of Korea); Korea Institute of Science and Technology Europe (Germany); Saarland University (Germany)

Poster 44 [ID256 Increasing the Electrical Power of a Carbon-Air Solid Oxide Fuel Cell through the Fabrication of Mesoporous Mo-doped CeO₂ Anodes](#)

Isaac Diaz-Aburto, Carola Montecino Bacigalupo

Universidad Tecnológica Metropolitana (Chile); Universidad de las Américas (Chile)

Poster 45 [ID310 Operation of 2 kW solid oxide fuel cell using anode-supported planar cells](#)

Tomás González-Ayuso, M José Escudero Berzal, José Luis Serrano

CIEMAT (Spain)

Fuel Cell & Hydrogen Systems Modelling

Poster 46 [ID195 A Dynamic Model for Air-breathing Polymer Electrolyte Fuel Cell](#)

Fatma Calili-Cankir, Mohammed S. Ismail, Derek B. Ingham, Lin Ma, Kevin Hughes, Mohamed Pourkashanian

University of Sheffield (UK)

Poster 47 [ID237 Full Range Dynamic Equivalent Circuit Model for PEM Fuel Cell Stacks](#)

Lukas Baum, Florian Grumm, Marc Schumann, Detlef Schulz

Helmut Schmidt University/University of the Bundeswehr Hamburg (Germany)

Poster 48 [ID323 Application of PEMFC and SOFC to a combined electricity and heat production system powered by bioethanol](#)

Pablo Sánchez, Diana Puchol, Enrique Romero, Jaime Soler

Aragon Institute of Engineering Research, University of Zaragoza (Spain)

Poster 49 [ID258 Optimal power dispatch model of hybrid power-to-power hydrogen storage systems for isolated microgrids: A case study](#)

Ander Martínez Alonso, Guillermo Matute, José Maria Yusta, Maarten Messagie, Thierry Coosemans

Vrije Universiteit Brussel (Belgium); Instrumentacion y Componentes S.A. (Spain); University of Zaragoza (Spain)

Poster 50 [ID356 Prospects for the price of renewable hydrogen and evolution of its value in the world context and its implication for industrial revampings](#)

Francisco Carro de Lorenzo, Raúl Rodríguez Parra

Tresca (Spain)

Poster 51 [ID138 Feasibility study of a hydrogen generation facility for use in a southern European home](#)

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