



ICH2P-2021

12th International Conference on Hydrogen Production

Online conference

September 19-23, 2021

PROGRAM

The Chairs of ICH2P-2021

Dr. Adolfo Iulianelli

Dr. Antonio Vita

GMT+2		Sunday - 19 th of September, 2021
10:00	11:00	Posters view and technical information from the organizers
15:00	16:00	Posters view and technical information from the organizers
Poster Session		
<i>Andrea Braga, Núria J. Divins, Jordi Llorca</i> , In-situ XPS characterisation of bimetallic NiFe catalysts supported on cerium dioxide for methane steam reforming		
<i>Aliki Kokka, Ramantani T., Yentekakis I.V., Panagiotopoulou P.</i> , Effect of alkali promotion on the activity of Ru/TiO ₂ catalysts for the production of H ₂ via propane steam reforming		
<i>Lucia G. Arellano Sartorius, Miguel Cruz-Irissou, Jun Nakamura</i> , Theoretical study of li-decorated b-doped silicon carbide monolayer for hydrogen storage		
<i>Leandro González Rodríguez, Gema Sevilla Toboso, Roberto Campana Prada, Raquel Dorado Lozano</i> , Reduction of cathode catalytic load and its effect on the pem single cell performance		
<i>Massimo Guarnieri</i> , A technical multi-drive fuel-cell-hydrogen boat for Venice		
<i>Costas Molochas, G. Balkourani, A. Brouzgou, P. Tsiakaras</i> , Evaluation of co tolerance of pt-pd anode by electrochemical impedance spectroscopy in a PEMFC		
<i>Fausto Posso Rivera, Juan C. Acevedo-Páez, Hossein Jahromi</i> , Towards hydrogen economy in Ecuador: renewable hydrogen production potential and its viable applications		
<i>Adolfo Iulianelli, Cristina Italiano, Matteo Manisco, A. Brunetti, Giovanni Drago Ferrante, Lidia Pino, Antonio Vita, Alberto Figoli</i> , Biogas reforming in a membrane reactor over a novel ruthenium-nickel catalyst for sustainable hydrogen production		
<i>Alfonso Policicchio, Giuseppe Conte, Sara Stelitano, Luigi Piredda, Alberto Rullo, Emanuele Bertelli, Raffaele G. Agostino</i> , Deltah lab: a new facility for validation of H ₂ -related materials and components		
<i>Delphine Truong</i> , Electrochemical investigation of microbial membrane electrolysis cell for biohydrogen production process		
<i>Ioannis V. Yentekakis, Georgios Kyriakou, Richard M. Lambert, Paraskevi Panagiotopoulou, Kalliopi Kousi, Dimitris I. Kondarides, Grammatiki Goul</i> , Support-induced effects on the iridium nanoparticles activity, selectivity and stability performance under the CO ₂ reforming of methane reaction		
<i>Gema Sevilla, M. Sánchez-Molina</i> , Analysis of hydrogen quality for PEM fuel cells		
<i>Anastasia E. Pafili, Nikolaos D. Charisiou, Maria A. Goula</i> , Recent progress in bio-oil steam reforming using perovskite catalysts		

GMT+2		Monday - 20 th of September, 2021		
		Opening Ceremony		
09:00	09:20	Welcoming Remarks from the Chairs		
09:20	09:40	Prof. Sandra Savaglio University & Research Councilor of Calabria Region/University of Calabria		
09:40	10:00	Dr. Emilio Campana Director of the Engineering, ICT and technologies for energy and transportation Dpt. of the Italian National Research Council (CNR-DIITET)		
10:00	10:20	Dr. Alberto Figoli Director of the Institute on Membrane Technology of the Italian National Research Council (CNR-ITM)		
		Plenary session chairs: Adolfo Iulianelli & Antonio Vita, Italy		
10:20	10:55	Plenary presentation: Dr. Bart Biebuyck - CEO of the FCH-JU Title: <i>State of Play and challenges of hydrogen production in Europe</i>		
10:55	11:30	Plenary presentation: Dr. N. Lymperepoulos - Project Manager of the FCH-JU Title: <i>FCH-JU support to development and demonstration of electrolysis and alternative H₂ production technologies</i>		
11:30	11:45	Break		
		Regular session 1A: Photocatalytic H ₂ generation	Regular session 1B: Catalytic H ₂ generation from hydrocarbons	Regular session 1C: Life cycle assessment, economic & environmental impact
GMT+2		Session Chair: Eric Favre, France	Session Chair: Cristina Italiano, Italy	Session Chair: David Alique, Spain
11:45	12:05	<i>Asier Agrelo, Lluís Soler, Elizabeth Martínez, Inmaculada Angurell, Laura Rodríguez, Jordi Llorca</i> : Dynamic H ₂ generation from heterogeneous solid-gas reactions over Au-TiO ₂ hybrid photocatalysts	<i>Lei Zheng, Matteo Ambrosetti, Alessandra Beretta, Gianpiero Groppi, Enrico Tronconi</i> : Electrified methane steam reforming with packed SIC foams for clean hydrogen production	<i>Dora Chisalita, Petrescu Letitia, Cormos Calin-Cristian</i> : Environmental evaluation of H ₂ production employing innovative chemical looping technologies
12:05	12:25	<i>Yufen Chen, Lluís Soler, Chenyang Xie, Xavier Vendrell, Jarostaw Serafin, Daniel Crespo, Jordi Llorca</i> : Integrating Au clusters over TiO ₂ surface via one-step ball milling for boosted photocatalytic H ₂ generation	<i>Andoni Choya, Beatriz de Rivas, Jose Ignacio Gutiérrez-Ortiz, Rubén López-Fonseca</i> : Ni/Al ₂ O ₄ as catalytic precursor for dry reforming of methane	<i>Christian Bidart, Martin Wichert, Gunther Kolb</i> : Biomethane as a fuel for freight transport – An LCA methodology for the calculation of GHG emission reduction
12:25	12:45	<i>Carmelo Lo Vecchio, S. Trocino, S. Campagna Zignani, A. Carbone, I. Gatto, V. Baglio, M. Diez-García, R. Gómez, A.S. Aricò</i> : Innovative tandem photo-electrochemical cells with anionic exchange membrane and non critical raw materials	<i>Maria Angulo, Ion Agirre, V. Laura Barrio</i> : Direct propane dehydrogenation of modified Pt-Sn/Al ₂ O ₃ catalysts in packed bed and monolithic reactors	<i>Carlota Rios, Celia Martinez-Leon, Javier Brey</i> : Economic analysis of renewable H ₂ production
12:45	13:05	<i>Jordi Llorca, Lluís Soler, Jarostaw Serafin, Ángel Rodríguez, Didac Vega, Marco Bianchini, Nerea Alayo, Marc Salleras, Luis Fonseca, Albert Tarancón</i> : Silicon-based micro-fuel reformers and photoreactors	<i>Rudy Calligaro, Silvia Mauri, Marta Boaro, Jordi Llorca, Piero Torelli, Alessandro Trovarelli</i> : Activity and stability of methane dry reforming Ni/CeO ₂ catalysts prepared via mild energy ball milling synthesis	<i>Daniele Candelaresi, Antonio Valente, Eleonora Bargiacchi, Diego Iribarren, Javier Dufour, Giuseppe Spazzafumo</i> : Life Cycle Assessment of hydrogen passenger cars and sensitivity to technical parameters
13:05	13:25	<i>E.A. Kozlova, D.B. Vasilchenko, A.V. Zhurenok, E.Yu. Gerasimov, S.V.Cherepanova</i> : Photocatalytic hydrogen production over g-C ₃ N ₄ -based photocatalysts under visible light	<i>Alina Kozhukhova, S.P. du Preez, D.G. Bessarabov</i> : Pt/AAO catalyst for H ₂ passive autocatalytic recombination safety applications	<i>Celia Martinez-Leon, Javier Brey, Carlota Rios</i> : Optimization of a H ₂ production system using photovoltaic powered electrolysis
13:30	14:30	Poster session		

GMT+2		Plenary Session Chair: Adolfo Iulianelli, Italy		
14:30	15:05	Plenary presentation: Prof. Ibrahim Dincer - Founding Chair of ICH2P/Ontario Tech University, Canada Title: Green hydrogen production and critical dimensions		
		Regular session 1D: H₂ from electrolysis & for fuel cells	Regular session 1E: Modeling & simulation of H₂ production/purification processes	Regular session 1F: H₂ carriers: Ammonia & Organic Liquids
GMT+2		Session Chair: Sabrina Campagna Zignani, Italy	Session Chair: Alessio Caravella, Italy	Session Chair: Jose Maria Sanchez Hervas, Spain
15:10	15:30	Gema Sevilla , E. Amores, N. Rojas, M. Sánchez-Molina, C. Garrido, J. Moreno, J. Parra, N. Medina, et al. : Final results of enigma project: optimization and improvement of PEM electrolysis cells for hydrogen production	Mohammad Amin Makarem , Mohammad Farsi, Mohammad Reza Rahimpour* : CFD Simulation of Hydrogen Purification in Microchannels by Nanoparticle Modified Ethanol Amine	Vadim Borisov , K.N. Iost, V.L. Temerev, D.A. Shlyapin : Effect of high-temperature treatment of sibunit on the activity of Ru/Sibunit catalysts in ammonia decomposition and their resistance to methanation
15:30	15:50	Leandro Gonzalez Rodriguez , Roberto Campana Prada, Gema Sevilla Toboso, Margarita Sánchez-Molina : Electrochemical performance of PEM single cells with ultra low Pt load and different Nafion content electrodes	Vittoria Troisi , Veronica Piazza, Abdelrahman Mostafa, Roberto Batista, Alessandro Stagni, Alessio Frassoldati, Gianpiero Groppi, Alessandra Beretta : Development of a small-scale biofuel processor: modelling of autothermal ethanol reforming	Xavier Vendrell , Enrique Marín, Laia Pascua, Ilaria Lucentini, Jordi Llorca : Ammonia decomposition: exploring a mechanochemical approach
15:50	16:10	Vincenzo Baglio , Vincenzo Baglio, Carmelo Lo Vecchio, Sabrina Zignani, Stefano Trocino, Giuseppe Monforte, Assunta Patti, Irene Gatto : Anion-Exchange-Membrane Electrolyser based on FUMASEP® FAA3-50: performance analysis and optimization	Alejandra Rivero , Celia Martinez-Leon, Javier Brey : Simulation model of an offshore H ₂ production plant	Y. Wang , J. Qian, Z. Fang, R. Kunz, G. Yablonsky, W. A. Goddard III, R. R. Fushimi, Alessandro Fortunelli : Combining simulations and TAP experiments to unveil reaction steps in ammonia decomposition for H ₂ transport
16:10	16:30	Mila Kölblig , Marc Linder : Temperature stabilization of fuel cell at e.g. 70 °C based on metal hydrides to extend life time	Abdelrahman Mostafa , Matteo C. Romano, Alessandra Beretta, Gianpiero Groppi : Dynamic modelling of sorption enhanced steam reforming for cost-effective CO ₂ capture	Dawood Hjeij , Yusuf Biçer, Muammer Koç, Thermodynamic assessment of hydrogen, synthetic natural gas, ammonia, and urea production for renewable energy storage via solid oxide cells
16:30	16:50	Rangachary Mukundan , Xiaoxiao Qiao, Siddharth Komini Babu, Shaun Alia, Guido Bender, Jacob S. Spindelov : Durability of PEM Water Electrolyzers and AST Development	Elena Rozzi , Francesco Demetrio Minuto, Andrea Lanzini : Simulation and validation of a power-to-power system with hydrogen storage in microporous adsorbent materials	Angelo Bovo , Massimo Guarnieri : The hydrogen EES in the veritas microgrid
16:50	17:10	Sabrina Campagna Zignani , Stefano Trocino, Alessandra Carbone, Antonino Salvatore Aricò : Novel CRM-free for H ₂ production in alkaline water electrolysis	Sebastian Weber , Kalyan Pourouchottamin, Johannes Lorinser, Annabelle Brisse : Estimating job effects of PEM electrolyzers and fuel cells	Andrés Miguel Sánchez Vasco , Alvaro Sánchez-Clemente Belinchon, Jose María Sánchez Hervás , Marta Marañón Buján, Marcelo F. Ortega Romero : Toluene – methylcyclohexane cycle as LOHC system for hydrogen storage
17:10	17:20	Break		
		Plenary Session Chair: Can Ozgur Colpan, Turkey		
17:20	17:55	Plenary presentation: Em. Prof. John W. Sheffield - President of the International Association for Hydrogen Energy/Purdue University, USA Title: Green Hydrogen for Mining Operations		

(*) Invited speaker

GMT+2		Tuesday - 21 th of September, 2021	
09:00	09:35	Plenary Session Chair: Alberto Figoli, Italy	
		Plenary presentation: Em. Prof. Enrico Drioli - Honoray President of the European Membrane Society/Founding Director of the CNR-ITM, Italy Title: Membrane Engineering today for the production, separation and purification of H ₂	
		Regular session 2A: Catalytic H ₂ generation from hydrocarbons - Part I	Special Session: INNOMEM
GMT+2		Session Chair: Stefania Specchia, Italy	INNOMEM Special Session Chair: Adele Brunetti, Italy
09:40	10:00	<i>Bernd Stoppacher, Sebastian Bock, Karin Malli, Michael Lammer, Viktor Hacker</i> : The impact of hydrogen sulfide contaminations on chemical looping hydrogen production	<i>José Luis Viviente</i> - INNOMEM project: Open innovation test bed for nano-enabled membranes TECNALIA (ES)
10:00	10:20	<i>Eugenio Meloni, Marco Martino, Vincenzo Palma</i> : Distributed hydrogen production through an ultracompact methane steam reforming reactor based on microwaves susceptible structured catalysts	<i>Torsten Brinkmann, Fynn Weigelt, Sergey Shishatskiy</i> - Polymeric membranes for hydrogen processing - Helmholtz-Zentrum Hereon (DE)
10:40	11:00	<i>E.V. Matus, I.Z. Ismagilov, M.A. Kerzhentsev, S.A. Yashnik, E.Y. Gerasimov, A.P. Nikitin, Z.R. Ismagilov</i> : H ₂ production from methane with CO ₂ utilization over exsolution derived NiCu/CeO ₂ catalysts	<i>Oana David, Sara Miguel, Marimar Díaz de Guereñu, Miren Etxeberria</i> - INNOMEM project: Up-grade hollow fiber fabrication: accurate production control and data management - TECNALIA (ES)
11:00	11:20	<i>Shakeel Ahmed, Mohammed Abdul Bari Siddiui, Fahad Al-Muhaish</i> : Hydrogen production from liquid hydrocarbons via thermo neutral reforming	<i>Magdalena Malankowska, Lorena Paseto, Carlos Echaide-Gorritz, Carlos Tellez, Joaquin Coronas</i> - Modification of polymeric hollow fibers by microfluidics for gas separation - Institute de Nanocencia de Aragon/University of Zaragoza (ES)
11:20	11:40	<i>Marina Armengol Profitós, Nùria J. Divins, Jordi Llorca</i> : Effect of Ru addition to CeO ₂ supported Co catalyst for dry reforming of methane	<i>Lukas Fisher, Artjom Maljusch, Christian Däschlein, Mathias Ulbricht</i> - Roll-to-roll casting of advanced nanophase-segregated ion-exchange polymer membranes - University of Duisburg-Essen (DE)
11:40	11:50	Break	
		Regular session 2B: Catalytic H ₂ generation from hydrocarbons - Part II	Special Session: INNOMEM
GMT+2		Session Chair: İlgi Karapınar, Turkey	INNOMEM Special Session Chair: Adele Brunetti, Italy
11:50	12:10	<i>Joachim Pasel, Dirk Schmitt, Remzi Can Samsun, Andreas Tschauder, Ralf Peters</i> : Autothermal reforming of oxymethylenether from the power-to-fuel process	<i>Jon Melendez, Andrés Galnares, Jose Antenio Medrano</i> - On-site H ₂ production by advanced membrane reactors - H2SITE (ES)
12:10	12:30	<i>Natalia Ruban, Dmitriy Potemkin, Vladimir Rogozhnikov, Vladimir Sobyenin, Pavel Snytnikov</i> : Composite catalysts for natural gas conversion to syngas	<i>Giuseppe Barbieri, Adele Brunetti</i> - Gas treatment by membranes - CNR-ITM (IT)
12:30	12:50	<i>V.E. Fedorova, M.N. Simonov, K.V. Parkhomenko, K.R. Valeev, Yu N. Bepalko, E.A. Smal, N.F. Ereemeev, E.M. Sadovskaya, V.A. Sadykov, A.-C. Roger</i> : Catalytic methane dry reforming over Ni-containing ceria-zirconia synthesized under supercritical conditions	<i>Zancat Sahin, Valentina Cechetto, Luca di Felice, Fausto Gallucci</i> - H ₂ production through ammonia decomposition in a catalytic membrane reactor: a computational and experimental study - EINDHOVEN UNIVERSITY OF TECHNOLOGY (NL)
12:50	13:10	<i>Veronica Piazza, Roberto Batista, Gianpiero Groppi, Alessandra Beretta</i> : Hydrogen production by formic acid cracking on Rh/Al ₂ O ₃ : a kinetic investigation in annular reactor	<i>Eugene Skouras, Nikolaos P. Karagiannakis, Vasilis N. Burganos</i> - Membrane modeling to tailor separation properties - FORTH-ICE-HT (GR)
13:10	13:30	<i>Shiva Fazlikeshteli, Xavier Vendrell, Jordi Llorca</i> : Low-temperature methane partial oxidation over Pd supported on CeO ₂ : effect of the preparation method and precursors	<i>Chiara Eleonora De Marco, Vittoria Novelli, Marco Molica Colella</i> - INNOMEM PROJECT: market positioning map of the main stakeholders in the European membrane market scenario - CIAOTECH (IT)
13:30	14:30	Break	

		Regular session 2C: Syngas up-grading		Regular Session 2D: H₂ generation/purification by membrane technologies - Part I	
GMT+2		Session Chair: Joachim Pasel, Germany		Session Chair: Giuseppe Barbieri, Italy	
14:30	14:50	Marco Martino , Eugenio Meloni, Concetta Ruocco, Vincenzo Palma, Pluton Pullumbi : H ₂ production through the single-stage Co-WGS reaction on catalized Al sponge		Alessandra Sanson* , Elisa Mercadelli, Angela Gondolini : Ceramic membranes for high temperature H ₂ separation	
14:50	15:10	Vladislav A. Sadykov , Yuliya N. Bepalko, Nikita F. Ereemeev, Pavel I. Skriabin, Alexey V. Krasnov, Ekaterina M. Sadovskaya, Tamara A. Krieger, Arcady V. Ishchenko : Structural and transport properties of neodymium tungstates and their composites with nickel (II) – copper (II) oxide		Thijs Peters , Marit Stange, Martin Aunemo Suul, Jonathan Polfus, Inge Hjelkrem, Thomas Reinertsen, Rune Bredesen : Pd-based membranes - from innovation to industrial application	
15:10	15:30	Anna Gorlova , Dmitriy Potemkin, Pavel Simonov, Pavel Snytnikov, Vladimir Sobyenin : Low-temperature water gas shift reaction over noble metal catalysts		David Alique , D. Martinez-Diaz, D. Sanz-Villanueva, R. Sanz, J.A. Calles : Pd electroless pore-plating for versatile and resistant H ₂ -selective composite membranes	
15:30	15:50	Tatyana Tabakova , Margarita Gabrovska, Dimitrinka Nikolova, Ivan Ivanov, Anna Maria Venezia, Krassimir Tenchev : Exploring the role of promoters (Au, Re and Cu) on the water-gas shift performance of Ni-AL LDH		Matteo Manisco , Alessio Caravella, Alberto Figoli, Adolfo Iulianelli : Pd-based membrane reactors for concentrated H ₂ production via steam reforming of synthetic biogas	
15:50	16:10	Serguei Tikhov , T. Minyukova, K. Valeev, O. Smorygo, V. Mikutski : Porous ceramometal catalyst for WGS reaction		Yagmur Nalbant Atak , Can Ozgur Colpan, Adolfo Iulianelli : Comparison study of one-dimensional membrane reactor model used a self-supported membrane	
16:10	16:25	Break			
		Regular session 2E: H₂ economy, sustainable development & infrastructures		Regular Session 2F: H₂ generation/purification & membrane technologies - Part II	
GMT+2		Session Chair: Javier Brey, Spain		Session Chair: Theodore Tsotsis, USA	
16:25	16:45	G. Maggio , A. Nicita, Gaetano Squadrito* : Green hydrogen based poly-generation systems, potentialities and case study financial analysis		Angela Gondolini , Elisa Mercadelli, Matteo Ardit, Giuseppe Cruciani, Cesare Melandri, Sonia Escolástico, José M. Serra, Alessandra Sanson : On the stability of full ceramic BCZY-GDC membrane for H ₂ separation	
16:45	17:05	Paolo Colbertaldo , Pietro Rabbeni, Stefano Campanar : Regional modelling of the Italian energy system to assess hydrogen role in long-term scenarios with sector coupling		Bakhtyar Nosrat Marneh , Kamran Ghasemzadeh* , Rahman Zeynali, Adolfo Iulianelli : Hydrogen recovery from gas flaring using palladium membrane reactors: CFD study	
17:05	17:25	Elisa Ghirardi , Giovanni Brumana, Giuseppe Franchini, Antonio Perdichizzi : H ₂ Contribution to power grid stability in high renewable penetration scenarios		Eleonora Tosto , David Martinez-Diaz, Raúl Sanz, Giulia Azzato, José Antonio Calles, José Antonio Medrano, Ekain Fernandez, David Alfredo Pacheco Tanaka, Fausto Gallucci, David Alique, Alessio Caravella : Experimental evaluation of coupled concentration polarization and inhibition in Pd-based membranes	
17:25	17:45	Antonino Barberi , Salvatore Favuzza, Eleonora Riva Sanseverino, Gaetano Zizzo : On the potential impact of green H ₂ facilities on the planning of res plants in Sicily		Amalia Macali , Christophe Castel, Bernardetta Addis, Eric Favre, Veronica Piccialli : CO ₂ /H ₂ separation by multistage H ₂ selective and CO ₂ selective membranes: a process synthesis study	
17:45	18:05	Javier Brey , T. Guerrero : Hydrogen for power management and deorbit in small satellities		Linghao Zhao , Mingyuan Cao, Ibubelye Somiari, Nicholas Margull, Patricia Pichardo, Doug Parsley, Richard J. Ciora, Jr., Paul K.T. Liu, Vasilios I. Manousiouthakis, Theodore T. Tsotsis : A Membrane Reactor (MR)/Adsorptive (AR) Process for Hydrogen Production and Simultaneous CO ₂ Capture in the Context of Power Generation	

(* Invented speaker

		Wednesday, 22nd of September 2021	
		Side event in memory of Prof. Nicola Giordano (CNR-ITAE founder and Director from 1980 to 1996)	
GMT+2		Plenary Session Chair: Panagiotis Tsiakaras, Greece	
09:00	09:35	Plenary presentation: Dr. Antonino Aricò, Director of CNR-ITAE, Italy Title: Development of hydrogen technologies at CNR-ITAE along the route traced by Prof. Nicola Giordano	
GMT+2		General session Co-Chairs: Antonino Aricò & Vincenzo Antonucci	
09:35	09:50	<i>Hasuck Kim - Daegu Gyeongbuk Institute of Science & Technology - (KR)</i> : My association with Prof. Giordano-Passionate visionary Researcher	
09:50	10:05	<i>Panagiotis Tsiakaras - MechEng-University of Thessaly - (GR)</i> : Electrochemical devices for energy conversion and storage: The way Prof. Giordano affected my research activities	
10:05	10:20	<i>Stanko Hočevar - Mebius d.o.o. - (SI)</i> : Prof. Nicola Giordano and his legacy in my research activities	
10:20	10:35	<i>Aurelio Ascoli - University of Milan (IT)</i> : Nicola Giordano, honest, enthusiastic, inspiring scientist	
10:35	10:50	<i>Vittorio Ragaini - University of Milan (IT)</i> : The CNR ITAE Institute: some news about the origins and photographs	
10:50	11:00	<i>Giovanna Giordano - Writer and journalist (IT)</i>	
11:00	11:10	<i>Anna Giordano - WWF leader in Sicily (IT)</i>	
11:10	11:20	<i>Nino Giordano - Teacher and writer (IT)</i>	
11:20	11:30	<i>Gaetano Cacciola - ITAE's Director from 1996 to 2013</i> : Giordano's idea of using cyclohexane as a hydrogen carrier is today known as LOHC	
11:30	11:40	<i>Giovanni Restuccia - ITAE's Director from 2013 to 2014</i> : Giordano, some ideas and research topics	
11:40	11:50	<i>Salvatore Freni - ITAE's Director from 2014 to 2019</i> : Nicola Giordano: inventor and/or innovator	
11:50	11:55	<i>Vincenzo Antonucci - Research Manager at CNR-ITAE (ITAE's Director from 2019 to 2020)</i>	
11:55	12:00	Break	
		Regular session 3A: Gasification processes and biomass valorization	Regular Session 3B: H₂ generation/purification by membrane technologies - Part III
GMT+2		Session Chair: Can Ozgur Colpan, Turkey	Session Chair: Thijs Peters, Norway
12:00	12:20	<i>Wilson Hago, Nikolas Pullen, John O'Connell</i> : Technoeconomic analysis of the HAGO energetics process to produce hydrogen and carbon black from biowastes	<i>Stefano Fasolin*</i> , Francesco Montagner, Boldrini Stefano, Ferrario Alberto, Armelao Lidia, Barison Simona : Metal membranes for H ₂ separation
12:20	12:40	<i>Meltem Elibol Karaismailoğlu, Halit Eren Figen, Sema Z. Baykara</i> : Co and La promoted Y supported Ni catalysts for partial oxidation of biomass product gas	<i>David Alique, David Martinez-Diaz, J.A. Calles, R. Sanz</i> : Permeation behavior in reverse configuration of versatile electroless pore-plated Pd-membranes
12:40	13:00	<i>Iliadis Petros, Panagiotis Boutikos, Konstantinos Atsonios, Panagiotis Grammelis</i> : Medium and long term energetic assessment for hydrogen integration in a small island system	<i>Pasquale Francesco Zito, Adele Brunetti, Alessio Caravella, Giuseppe Barbieri</i> : Separation of H ₂ from gas mixtures with zeolite membranes
13:00	13:20	<i>Sebastian Bock, Viktor Hacker</i> : High-purity H ₂ production from biogas – the reformer steam iron cycle	<i>Christophe Castel, Nicolas Combernoux, Eric Favre</i> : Simulation and design methodologies for hydrogen purification by palladium membrane modules: a critical reassessment
13:20	13:40	<i>Amvrosios G. Georgiadis, Anastasios I. Tsiotsias, Nikolaos D. Charisiou, Maria A. Goula</i> : Biogas dry reforming over rare earth containing perovskites	<i>Michele Ongis, Gioele Di Marcoberardino, Giampaolo Manzolini, Fausto Gallucci, Marco Binotti</i> : Design of a membrane reactor for green H ₂ production from biogas and biomethane: a techno-economic assessment

(*) Invited speaker

13:40	15:00	Poster session	
15:00	15:15	Break	
		Regular session 3C: H₂ production from renewable sources - Part I	Special session: Italy-Brazil "Research to Business"workshop
GMT+2		Session Chair: Concetta Ruocco, Italy	Workshop Chairs: M. Lo Faro & D.A. Cantane
15:15	15:35	<i>Nicolas Grimaldos-Osorio</i> , F. Sordello, M. Passananti, P. Vernoux, A. Caravaca: A new step towards plastic-waste to H ₂ - Electro-oxidation of dissolved PMMA on Pt-based electrodes	<i>Ulisses A. Rêgo, Ricardo Sgarbi, Andrii Koverga, Ana M. Gómez-Marin, Edson A. Ticianelli (IQSC-USP)</i> : Energy conversion on water electrolysis and fuel cells: non-noble catalysts for the hydrogen evolution and oxygen reduction reactions
15:35	15:55	<i>Paolo Colbertaldo</i> , Marco Pugliese, Stefano Campanari: Operation of a hydrogen-based multi-energy system using reversible solid oxide cells to supply multiple energy vectors	<i>Viviana Cigolotti (ENEA)</i> : H ₂ value chain: initiatives for the technological development and the role of R&D to support the national industry
15:55	16:15	<i>Alexander Malakhov</i> , A.A. Malakhov, M.H. duToit, A.V. Avdeenkov, D.G. Bessarabov: Influence of the thermal diffusion on the hydrogen recombination efficiency and temperature distribution in a passive autocatalytic recombiner	<i>Paulo Emílio Valadão de Miranda (President of Brazilian Hydrogen Association - ABH2)</i>
16:15	16:35	<i>Concetta Ruocco</i> , Marco Martino, Vincenzo Palma: Oxidative reforming of fuel grade bioethanol in a fluidized bed reactor over Pt-Ni/CeO ₂ -SiO ₂ catalysts - effect of filler addition	<i>Dario Montinaro (SOLID Power Inc.)</i> : Industrial scale SOC manufacturing challenges and achievements: the experience of SOLID Power SpA
16:35	16:40	Break	
		Regular session 3D: H₂ production from renewable sources - Part II	Special session: Italy-Brazil "Research to Business"workshop
GMT+2		Session Chair: Maria A. Goula, Greece	Workshop Chairs: M. Lo Faro & D.A. Cantane
16:40	17:00	<i>Veronica Piazza</i> , Abdelrahman Mostafa, Vittoria Troisi, Roberto Batista, D. Gazzoli, Gianpiero Groppi, Alessandra Beretta: Ethanol-to-H ₂ processes on Rh/Al ₂ O ₃ : kinetic study in annular reactor with insight on surface c-formation	<i>Rafael Jose Deitos (Diretor Técnico do Parque Tecnológico Itaipu)</i>
17:00	17:20	<i>Gemma Grasa</i> , Claudia Navarro, José Manuel López, Isabel Martínez, Ramón Murillo: Evaluating the potential of Ni-Fe catalysts for H ₂ production via chemical looping reforming of glycerol	<i>Gaetano Santonocito (President of IBC ENERGY)</i> : Green hydrogen applications in automotive and energy supply
17:20	17:40	<i>Abdelrahman Mostafa, Veronica Piazza, Roberto Batista, Alessandra Beretta, Gianpiero Groppi</i> : Green H ₂ by catalytic partial oxidation of bioethanol on Rh coated monoliths: impact of the catalyst support on coking	<i>Daniel Gabriel Lopes (Commercial Director of Hytron)</i>
17:40	18:00	<i>Anastasios I. Tsiotsias, Nikolaos D. Charisiou, Christos Zotos, Safa Gaber, Victor Sebastian, Kyriaki Polychronopoulou, Maria A. Goula</i> , CO ₂ methanation over Ni catalysts supported on Pr-doped CeO ₂	<i>Sandra Barba (Team member of Enel Green Power's Business Development in Brazil)</i> : Green Hydrogen as a complement to electrification
17:55	18:20		<i>Giovani Vitória Machado (Diretor de Estudos Econômico-Energéticos e Ambientais da Empresa de Pesquisa Energética)</i>
18:20	18:55	Plenary Session Chair: Giuseppe Spazzafumo, Italy	
		Plenary presentation: Prof. Bruno G. Pollet, President of the Green H₂ division of the IAHE/University of Québec à Trois-Rivières (UQTR), Canada Title: Green hydrogen: opportunities and challenges	

GMT+2		Thursday, 23 rd of September 2021	
09:00	09:35	Plenary Session Chair: Antonio Vita, Italy	
		Plenary presentation: Dr. Camel Makhloufi, R&D Program Leader Hydrogen Lab. at ENGIE, France Title: <i>Electrofuels for large scale energy storage and utilization</i>	
		Regular session 4A: H ₂ storage & synthetic methane	Special session 4B: Italy-Turkey Workshop on the Strategic Partnership for the Development of H ₂ Technologies
GMT+2		Session Chair: Ioannis Yentekakis, Greece	Workshop Chairs: Adolfo Iulianelli & Can Ozgur Colpan
09:35	09:55	<i>Georgios I. Siakavelas, Nikolaos D. Charisiou, Ioannis V. Yentekakis, Kyriaki Polychronopoulou, Maria A. Goula</i> : Improved CO ₂ methanation reaction over highly active, selective, and stable ni catalyst supported on oxygen vacancies-rich CeO ₂ -based supports	<i>ilgi Karapinar, Serpil Ozmihci</i> (Dpt. of Environmental Engineering of the Dokuz Eylul University, Izmir, Turkey): Biohydrogen production from organic waste materials at DEÜ-ENV
09:55	10:15	<i>Rafael Canales Larrazabal, Laura Barrio Cagigal</i> : Study of photo and thermocatalytic CO ₂ methanation on Ni/A ₁₂ O ₃ and hydrotalcite-like catalysts	<i>Adele Brunetti, Giuseppe Barbieri, Alberto Figoli, Adolfo Iulianelli</i> (Institute on Membrane Technology of the National Research Council (CNR-ITM), Rende, Italy): Membrane engineering for hydrogen production, separation and purification at CNR-ITM
10:15	10:35	<i>Raul Bruno Machado Da Silva, Javier Francisco Da Costa-Serra, Antonio Chica Lara</i> : Novel Ni-based catalysts supported on delaminated zeolites to convert green H ₂ and CO ₂ into synthetic methane	<i>Can Ozgur Colpan</i> (Dpt. of Mechanical Engineering of the Dokuz Eylul University, Izmir, Turkey): Fuel cell and Hydrogen Research Activities in DEÜ-ME
10:35	10:55	<i>Jorge Ruiz Castillo, José María Sánchez Hervás, Javier García Torrent, Isabel Amez Arenillas</i> : Hydrogen storage in liquid organic hydrogen carriers (LOHCS) and study case in Spain	<i>Antonio Vita</i> (Institute Advanced Energy Technology of the National Research Council (CNR-ITAE), Messina, Italy): Process intensification routes at CNR-ITAE for CO ₂ conversion to Synthetic Natural Gas using renewable hydrogen
10:55	11:15	<i>Alexander Nizovskii, Alexander Kulikov, Roman Senin, Alexander Shmakov, Valerii Bukhtiyarov</i> : Material for hydrogen cartridges based on activated commercial aluminium alloys	<i>Hüseyin Devrim</i> (TEKSIS R&D executing SME, Ankara, Turkey): The Development and production of fuel cell and electrolyzer in TEKSIS
11:15	11:35	<i>A. Rontogianni, N. Chalmpes, E. Nikolarakis, G. Botzolaki, G. Goula, P. Zygouri, N.D. Charisiou, M.A. Goula, D. Moschovas, A. Avgeropoulos, M.A. Karakassides, D. Gournis, Ioannis Yentekakis</i> : Renewable CH ₄ production via CO ₂ hydrogenation over mono- and bi-metallic ruthenium-nickel/MCM-41 catalysts	<i>Emma Palo</i> (KT SpA, Chieti, Italy): Membrane Reactors technology development for pure hydrogen and chemicals production
11:35	11:45	Break	
Special session: Italy-Turkey Workshop on the Strategic Partnership for the Development of H₂ Technologies			
GMT+2		Workshop chairs: Adolfo Iulianelli & Can Ozgur Colpan	
11:45	12:05	<i>Adnan Midilli</i> (Dpt. of Mechanical Engineering of the Yıldız Technical University, Istanbul, Turkey): Gasification for Hydrogen Production: What we have done?	
12:05	12:25	<i>Stefania Specchia</i> (Dpt. of Applied Science & Technology of the Polytechnic University of Turin, Italy): Structured catalysts for natural gas reforming	
12:25	12:45	<i>Harun Koku</i> (Dpt. of Chemical Engineering of the Middle East Technical University, Ankara, Turkey): Biological Hydrogen Production Studies in METU	
12:45	13:05	<i>Carlo Tregambe</i> (Hydrogen Lab of ICI Caldaie SpA, Verona, Italy): How to produce and use hydrogen in industries. Viable solutions today	
13:05	14:00	Break	

14:00	14:30	Awards Ceremony
		Roundtable: Hydrogen for a green future
GMT+2		RoundTable Chairs: Adolfo Iulianelli, Antonio Vita & Massimiliano Lo Faro
14:30	14:35	RoundTable Welcome
14:35	14:55	Aldo Gago - Group Leader: Low Temperature Polymer Electrolyte Membrane Fuel Cells and Electrolysis, German Aerospace Center, Institute of Engineering Thermodynamics Electrochemical Energy Technology, Germany. Cost Reduction and Efficiency Enhancement in Low Temperature Water Electrolysis
14:55	15:15	Ekain Fernandez - Responsable de Tecnologías de Hidrógeno. Área de Materiales y Procesos, TECNALIA, Spain. Title: Overview of the development of hydrogen production technologies and future activities.
15:15	15:30	Discussion
15:30	15:50	Vincenzo Palma - Full professor at University of Salerno, Italy. The promeca Promeca project: Process intensification trough the development of innovative membranes and catalysts
15:50	16:10	Fausto Gallucci - Full Professor at Eindhoven University of Technology, The Netherlands. Latest developments on membrane reactors within Macbeth, Innomem and Arenha prjects
16:10	16:30	Daniel Garcia Sanchez - Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), German Aerospace Center, Germany. PROMET-H2: European project. Cost-effective PEMWE for efficient and sustainable power-to-methanol.
16:30	16:40	Discussion
16:40	17:00	Thulile Khoza - Senior Researcher, SINTEF, Norway. Project: CHANNEL PROJECT: Progress towards development of a cost-efficient hydrogen production unit based on anion exchange membrane
17:00	17:20	Rachel Backhouse - Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), German Aerospace Center, Germany. NEPTUNE: Next generation PEM electrolyzers under new extremes
17:20	17:30	Conclusions
17:30	18:00	A. Iulianelli & A. Vita - Concluding remarks and announcement of the next conferences

12TH INTERNATIONAL CONFERENCE ON HYDROGEN PRODUCTION



ICH₂P-2021- ON-LINE CONFERENCE
Hydrogen for a green future

SEPTEMBER 19-23, 2021



ICH2P-2021

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