Sunday – June 26, 2022

14:00 19:00	**CONFERENCE REGISTRATION**
15:00 17:00	**PANEL or WORKSHOP (TBA)**

Monday – June 27, 2022 – Online Link	
08:30 09:00	**CONFERENCE REGISTRATION**
09:00 09:40	**OPENING CEREMONY** **Ibrahim Dincer**, *Conference Chairman & President, National Hydrogen Association, Turkey* **Les Jacobs**, *Vice-President, Ontario Tech University, Canada* **John W. Sheffield**, *President, International Association for Hydrogen Energy (IAHE), USA* **T. Nejat Veziroglu**, *Founding President, International Association for Hydrogen Energy (IAHE), USA* **H.E. Fatih Dönmez**, *Minister of Energy and Natural Resources, Turkey (TBC)*
09:40 10:15	**PLENARY SESSION 1** **Session Chair: TBA** **Peter Strasser** *Technical University of Berlin, Germany* **Electrocatalysis of Hydrogen Technologies**
10:15 10:45	**Coffee Break**
10:45 11:20	**PLENARY SESSION 2** **Session Chair: TBA** **Stuart Hawksworth** *Head of Centre for Energy, HSE, UK & President of International Association for Hydrogen Safety, UK* **Safety of Hydrogen in the Energy System**
11:25 12:00	**Bruce E Logan** *The Pennsylvania State University, USA* **Green Hydrogen Production using Biomass in Next Generation Microbial Electrolysis Cells and Impaired Water in Novel Water Electrolyzer Systems**
12:00 14:00	**LUNCH**

Monday – June 27, 2022

PARALLEL SESSIONS – 1

	ROOM 1 – Online Link 1	ROOM 2 – Online Link 2	ROOM 3 – Online Link 3	ROOM 4 – Online Link 4	
	Track 1. Hydrogen Production: Thermochemical and Photonic Methods **Session Chair: TBA**	**Track 2. Hydrogen Production: Electrolysis** **Session Chair: TBA**	**Track 3. Hydrogen Production: Biological Methods and Biohydrogen** **Session Chair: TBA**	**Track 5. Hydrogen Separation and Purification** **Session Chair: TBA**	
14:00 15:30	**#1546** "Catalytic Hydrogen Evolution by Using Different Carbon-based Nanocomposite at Soft Interfaces" *I.H. Patir & E. Aslan* **#42** "Experimental Investigation of a Photoelectrochemical Reactor for Hydrogen Production and Wastewater Treatment" *M.E. Demir & I. Dincer* **#58** "Improving Catalytic Activity of Supported Precious Metal Catalysts for Hydrogen Production by Hydrothermal Conversion Processes" *S. Irmak* **#162** "Applying Artificial Intelligence on Steam Gasification of Waste Plastic to Generate Hydrogen" *S. Ozmen & P. Clough* **#219** "Performance of Microwave and Conventionally Heated Reactor Systems in Steam Reforming of Ethanol over Nickel Impregnated Mesoporous Carbon" *M. Sariyer, N.A. Sezgi & T. Dogu* **#1544** "Washcoating Cu Catalyst with CeO_2 Sol onto Microchannel Reactor for Steam Reforming of Methanol" *A. Hussain, K.S. Lin, H.P. Yeh, Y.S. Lin & Y.C. Hsieh*	**Invited Speaker** **Joris Proost** *Université Catholique de Louvain, Belgium* **Critical Assessment of the Production Scale Required for Fossil Parity of Green Electrolytic Hydrogen** **#183** "Electrodeposition of a Ni-Mo Alloy Catalyst with Optimized Mo-Content for Hydrogen Evolution Reaction in AEM-Electrolysis" *L. Böhm, K. Thielker, N. Kazamer, F. Wirkert, U. Rost, G. Marginean, U.P. Apfel & M. Brodmann* **#187** "Upscaling High-Performance 3-D Electrodes for Alkaline Water Electrolysis Towards Near-Industrial Conditions" *R. Delmelle, F. Rocha, C. Georgiadis, J. Lambrechts & J. Proost* **#205** "Activity of Electrodeposited Rhodium in Acidic and Basic Water Electrolysis" *R.M. Bonifacio & M. Mena* **#22** "Qualifying Tests and Economic Analysis of Electrolyzers for Grid Services" *R. S. Reissner, J. Bürkle, S. Crevon, V. Seguin, V. Klemenz, T. M. Mbavarira & C. Imboden*	**#6** "Carbon Footprint of Hydrogen Produced from Spent Coffee Grounds" *F.G. Uctug, H. Cay, G. Duman Taç & J. Yanık* **#10** "Impact of Microbial Inoculum Storage on Dark Fermentative H_2 Production" *K. Dauptain, A. Schneider, M. Noguer, C. Barrau, P. Fontanille, N. Bernet, H. Carrere & E. Trably* **#23** "The Potential of Using Microalgae in Photobioreactors for H_2 Production" *S.A. Markov* **#24** "A Novel Three-Stage Integrated System (Dark Fermentation, Methanogenesis and Photofermentation): Different Combinations to Maximize H_2 and CH_4 Production" *T.H. Bayramoğlu, M.C. Akman, E. Koç, E.G. Tunçay, U. Gündüz & I. Eroglu* **#26** "Investigation of H_2 and CH_4 Production from Yard Wastes via Two-Stage Anaerobic Digestion at Different Pre-Treatment Options and Solids Concentrations" *N. Kalaycıoğlu & T.H. Bayramoğlu* **#211** "Hydrogen Production and Utilization of Brewery Spent Grains Waste by Escherichia Coli" *S. Mirzoyan, A. Toleugazykyzy, K. Bekbaev, A. Vassilian, A. Poladyan & K. Trchounian*	**#34** "New Aspects Concerning the Improving of Hydrogen Isotopes Separation by Hydrogen - Water Isotopic Exchange" *G. Ionita* **#259** "Development and Investigation of a Novel Electrochemical Hydrogen Compressor Cell Design Based on Hydraulic Clamping" *U.W. Rost, L. Engelhardt, F.J. Wirkert & M. Brodmann* **#140** "Corrosion Phenomenon in Dense Membrane Made of Palladium Based Alloy" *H. Alsyouri, F. Al-Hadeethi & S. Dwairi* **#161** "H_2/CO_2 Separation with New Ionic Liquid-based Membranes" *A. Brunetti, F. Galiano, R. Mancuso, L. Guazzelli, M. Mauri, C. Chiappe, R. Simonutti, C.S. Pomelli, G. Barbieri, B. Gabriele & A. Figoli* **#50** "Simulation Modeling of Hydrogen Permeation Across Pure Palladium Membranes" *M.I. Elshafie* **#170** "Gas Separation Properties of Mixed Matrix Membranes Prepared with Graphene Oxide" *S. Canca & S. Deniz*	**EXHIBITION**
15:30 16:00	**Coffee Break**				

Monday – June 27, 2022

PARALLEL SESSIONS – 1

	ROOM 5 – Online Link 5	ROOM 6 – Online Link 6	ROOM 7 – Online Link 7	ROOM 8 – Online Link 8	Digital Boards – Onsite
	Track 6. Hydrogen Storage **Session Chair: TBA**	**Track 7. Fuel Cells: PEMFC** **Session Chair: TBA**	**Track 4. Hydrogen Production: Nuclear** **Session Chair: TBA**	**Track 9. Integrated Hydrogen Energy Systems** **Session Chair: TBA**	**POSTER PRESENTATIONS – 1** **Session Chair: TBA**
14:00 **15:30**	**#77** "Techno-Economic Requirements for Underground Renewable Hydrogen Storage in Porous Media" *J. Michalski* **#119** "Digital Development of an Optimized Heat Management Design for an Integrated Solid-State H_2-Storage Reservoir" *P.S. Krause, J. Warfsmann, E. Wienken, J. Jepsen, T. Klassen & J. Puszkiel* **#120** "Modeling and Process Simulation of a Metal Hydride Tank Coupled with a Pem Electrolyzer" *E.S. Wienken, P.S. Krause, J. Warfsmann, J.B. von Colbe, J. Jepsen, T. Klassen & J. A. Puszkiel* **#122** "High H_2 Uptake on Co(II)- and Ni(II)-Exchanged ZSM-5 and US-Y Having Optimal Heat of Adsorption Values" *N. Sarohan, M. O. Ozbek, Y. Kaya & B. Ipek* **#192** "Development of Novel Polymeric Material Grades and Experimental Methods to be Used in High-Pressure H_2 Gas Atmospheres" *W. Balasooriya, C. Clute, K. Halder, G. Theiler, A. Hausberger & G. Pinter* **#203** "Evaluation of the Bimetallic Pt-Ni and Pt-Co Catalysts on the LOHC Dehydrogenation" *K. Alconada & V.L. Barrio*	**#16** "Compact Fuel Cell System with Diesel Reforming" *R.C. Samsun, M. Prawitz, A. Tschauder, J. Meißner, J. Pasel & R. Peters* **#20** "On the Origin of Fuel-Cell Catalyst-Layer Local Resistances" *A. Chowdhury, S. A. Berlinger J. Petrovick, A. Kusoglu, C. J. Radke & A. Z. Weber* **#45** "Preparation of Electroconductive Thermally Expanded Graphite for PEM Fuel Cells' Bipolar Plates" *A.M. Darabut & Y. Lobko* **#65 "**Dynamic Modeling of a Residential Integrated PEMFC-Based Micro-CHP System" *R. Elkhatib & H. Louahlia* **#44** "Synthesis and Investigation of The Pt-Decorated Polypyrrole Nanotubes in PEM Fuel Cells" *Y. Lobko, Y. Novakova, Y. Yakovlev, D. Kopecký, M. Vorokhta, A.M. Darabut, L.B. Redondo, V. Matolin & I. Matolinova* **#79** "Design and Investigation of a Variable-Nozzle Ejector for A 120 KW PEMFC Stack", *Y. Lu, X. Wang & S. Xu*	**Invited Speaker** **Francesco Ganda** *International Atomic Energy Agency, Austria* **Worldwide Nuclear Hydrogen Development Plans and Hydrogen-Related Services Offered by the IAEA** **#164** "Building the Business Case for Hydrogen Production with Operating Nuclear Power Plants" *A. van Heek, Y. Yuasa & B. Lazerwitz* **#1592** "Nuclear Hydrogen Perspectives in Romania" *I. Iordache, M. Varlam, E. Carcadea & M. Iordache* **#1526** "Multiobjective Optimization of a PWR Nuclear Cogeneration Plant for Hydrogen Production" *T. Tanbay & A. Durmayaz* **#1630** "Compared Economic Assessment of Selected Thermochemical Cycles Utilizing Next-Gen Nuclear Reactors Using IAEA's HEEP" *H. Ozcan & A. Tozlu*	**#92** "The Role of Hydrogen for the Defossilisation of the German Chemical Industry" *F. Kullmann, P. Markewitz, L. Kotzur & D. Stolten* **#146** "The Role of Hydrogen for a Greenhouse Gas-Neutral Germany by 2045" *T. Schöb, P. Markewitz, D. Franzmann, H. Heinrichs, L. Kotzur, J. Linben & D.Stolten* **#286** "Prediction of Hydrogen Combustion Using Data-Driven Approach" *K. Kunihara, R. Waluyo & M. Aziz* **#401** "Optimization of a Stand-Alone PV System for Efficient Hydrogen Production Using an Alkaline Water Electrolyzer" *V.A.M. Lopez, H. Ziar, M. Zeman & O. Isabella* **#98** "Tsukuba Green Holonism Town (II) - Examining a Preliminary Energy Demand-Supply Outlook" *I. Sugimoto, K. Morita, H. Mitsuishi & M. Ishida* **#100** "Tsukuba Green Holonism Town (I)—Building a Carbon-Neutral Community" *K.Morita, I.Sugimoto, H.Mitsuishi & M.Ishida*	**#11** "Assessment of Hydrogen Production Systems Based on Biogas Catalytic Reforming with Carbon Capture" *C.C. Cormos, A.M. Cormos, L. Petrescu & S. Dragan* **#174** "Design of Green Hydrogen Production System in Context of Collaborative International Online Learning (COIL)" *E.P. Ochoa, P. Alarcon, J. Gonzales, A. Malpartida, M. Campos, G. Bancayan, L. Machaca, D. Tafur, I. Puente, S. Bauserman, J. Gamarra, H. Bravo, J. Ramos & J. Sheffield* **#214** "Green Hydrogen Production for FCEV Trucks at a Remote Open-Pit Copper Mine" *S. F. Bauserman, J. Nahui-Ortiz, J. C. R. Saravia, J. Sheffield & M. J. Mereu* **#350** "Optimization of a Premixed charge Hydrogen Engine in Argon Power Cycle" *T. Chiba, T. Tsujimura, M. Kobayashi, Y. Suzuki, D. Swada & C. Zhili* **#1448** "Green Hydrogen Production Using Geothermal Power Generation (1) Project in Mokai, New Zealand" *K. Ando, T. Hisaeda, C. Nagai, N. Sasaki, S. Ichikawa, Y. Mashimo & A. Inagaki* **#1451** "Green Hydrogen Production Using Geothermal Power Generation (2) Project in Oita, Japan" *H. Nagatsugu, K. Shima, T. Ito, M. Kajiki* **#383 "**Hydrogen Production Via Steam Reforming of Glycerol over Ce-La-Cu-O Ternary Oxide Catalysts" *M.A. Goula, A. Latsiou, N.D. Charisiou, A.A. Dabbawala & K. Polychronopoulou*
15:30 **16:00**	**Coffee Break**				

Monday – June 27, 2022

PARALLEL SESSIONS – 2

	ROOM 1 – Online Link 1	ROOM 2 – Online Link 2	ROOM 3 – Online Link 3	ROOM 4 – Online Link 4	
	Track 10. Power-to-Gas **Session Chair: TBA**	**Track 11. Hydrogen Safety** **Session Chair: TBA**	**Track 13. Hydrogen Strategies and Policies** **Session Chair: TBA**	**Track 16. Environmental Impact and Sustainable Development** **Session Chair: TBA**	
16:00 **18:00**	**#111** "Towards Electrifying Cement Production by Electrochemically-Enhanced Dissolution of $CaCo_3$ during Water Electrolysis under a Ph-Gradient" *R. Rouxhet, R. Delmelle & J. Proost* **#125** "Butadiene Production via the Direct Dehydrogenation of N-Butane in Membrane Reactors: A Techno-Economic Analysis" *C. Brencio, M. Maruzzi, G. Manzolini & F. Gallucci* **#188** "Process Implications of Electrifying Ammonia Production" *A. Dechany, V. Galvita, K. V. Geem & J. Proost* **#343** "An MINLP-based Optimal Design and Scheduling of a Power to Gas System Integrated Microgrid: A Case Study from Turkey" *H. Akülker & E. Aydın* **#402** "Integrated Planning Tool for Cost and 3D Structural Planning for Offshore Wind Farms for the Generation of H2" *M. Hayduk, R. Sommer, O. Kühn, F. Beuß, W. Flügge & J. Gulden* **#1616** "Techno-Economic Performance Assessment of a Reactor System Used for Power-to-Methane Plant" *A.C. Ince, C.O. Colpan, A. Keles, M.F. Serincan & U. Pasaogullari* **#207** "Sensitivity Analysis of Independent Parameters for Formation of NO_x Emission in Hydrogen Enriched Compressed Natural Gas Along with Exhaust Gas Recirculation by Support Vector Machine" *A. Rao, Y. Liu & F. Ma* **#229** "CO_2 Methanation over Bimetallic Nickel-Noble Metal Catalysts" *A.I. Tsiotsias, N.D. Charisiou, G.D. Ferrante, C. Italiano, A. Vita, V. Sebastian & M.A. Goula*	**#8** "Computational Investigation of Premixed hydrogen-air Flames Stabilized in Diverging Annular Channel" *A.C. Benim & B. Pfeiffelmann* **#55** "Mesh-Independent Large-Eddy Simulation with Anisotropic Adaptive Mesh Refinement for Hydrogen Deflagration Prediction in Large-Scale Vented Vessels" *L. Ivan, M. Khalil, C.P.T. Groth & Z. Liang* **#257** "Safety Study and CFD Simulation of Hydrogen Leaks and Dispersion within Semi Enclosed Space of Hydrogen Facility" *D. Prasetyo, A.C. Alvarez, A.F. Rubio & A.G. Jimenez* **#384** "Investigations on The Deflagration-to-Detonation Phenomena by Means of Numerical Simulations with Detailed Chemistry and Automated Meshing" *P.Scienza, M.G. Cojocaru, N. Attal & G. Kumar* **#1475** "The Effect of Crystal Structure and Metal Electrodes on Gas Detection in TiO_2 Nanotubes H_2 Sensors" *L.B. Taşyürek, E. Işık, İ.Işık & N. Kılınç* **#1482** "Determination of Safety Distance and the Structural Damage Vulnerability Resulted from Vapor Cloud Explosion (VCES)" *R.Md. Kasmani, A. Ismaila & A.T.Ramli* **#280** "Toward the Continuous Sensing of Leaked Hydrogen by a Quad-Rotor Drone" *T. Suga & K. Matsuura* **#429** "Fretting Wear of Elastomer Materials In Hydrogen" *G. Theiler & A. Hausberger*	**Invited Speaker** **Sirin Karadeniz** *Bahçeşehir University, Turkey* **Importance of Hydrogen Energy, Sustainability, and Educational Dimensions** **#95** "Hydrogen Roadmap Assessment for Colombia Under an Internationally Comparative Framework" *P. Riveros-Melo, J. Sanchez. C.M. Cobo-Angel & C. Barraza-Botet* **#104** "Creating A Global Hydrogen Economy: Review of International Strategies, Targets, and Policies with a Focus on Japan, Germany, South Korea and California" *V. Vijayakumar, L. Fulton, M. Shams & D. Sperling* **#113** "Sustainability Analysis of Hydrogen Production Processes" *A. Mio, E. Barbera, A. M. Pavan, A. Bertucco & M. Fermeglia* **#226** "Blue H_2 Perspective in Energy Transition of Colombia" *S. Dominguez, B. Cifuentes, F. Bustamante, N. Sanchez & M. Cobo* **#228** "Colombia's Green Hydrogen: Solar and Wind Power Capacity Scenarios "*D. Rodriguez, N. Castillo, N. Sanchez & M. Cobo* **#194** "Assessing Renewable Hydrogen Production Capacity on a Regional Basis" *G. Puig-Samper, F. Campos-Carriedo, D. Iribarren & J. Dufour*	**#21** "Desulfurization Performance of SBA 15 Supported Calcium Based Mixed Metal Oxide Sorbents" *Z. Koseoglu Ebem, A. Kanca & O.N. Ata* **#115** "Hydrogen Certification of Origin in Colombia" *J.C. Moreno, M. Cobo & N. Sanchez* **#137** "Prospects of Renewable Hydrogen in Transport" *A. Ajanovic, R.J. Haas & M. Sayer* **#266** "Sustainability Assessment of a Proton-Exchange Membrane Fuel Cell Stack as a Basis for the Development of Eco-Design Guidelines" *M. Mori, D. Iribarren, J. Cren, E. Monnier, R. Stropnik, A. Lotric, M. Sekavcnik, D. Cortes, L. Gimenez, L. Rey, G. Puig-Samper, F. Campos-Carriedo, E. Bargiacchi, J. Dufour & E. Cor* **#59** "A Parametric Numerical Analysis of Laminar Hydrogen Diffusion Flames" *A. Korucu & A.C. Benim* **#36** "Life Cycle GHG Emissions of a Gasoline and Fuel Cell Vehicle with Various Hydrogen Production Pathways" *S. Ghandehariun, S. Sadeghi & A.M. Ghandehariun* **#151** "Olive Mill Wastewater Valorisation through Steam Reforming Using a Hybrid Sorption-Enhanced Membrane Reactor" *C. Rocha, M. Soria & L. Madeira* **#315** "LCA and Criticality Analysis of Water Electrolysis Technologies" *J.C. Koj, A. Taubitz, O. Zelt, W. Kuckshinrichs & K. Gorner*	**EXHIBITION**
19:00 **22:30**	**Welcoming Reception** *Location will be Announced*				

Monday – June 27, 2022

PARALLEL SESSIONS – 2

	ROOM 5 – Online Link 5	ROOM 6 – Online Link 6	ROOM 7 – Online Link 7	ROOM 8 – Online Link 8	Digital Boards – Onsite
	Track 6. Hydrogen Storage **Session Chair: TBA**	**Track 7. Fuel Cells: PEMFC** **Session Chair: TBA**	**Track 15. Hydrogen Economy, Logistics, Infrastructure** **Session Chair: TBA**	**Track 9. Integrated Hydrogen Energy Systems** **Session Chair: TBA**	**POSTER PRESENTATIONS – 2** **Session Chair: TBA**
16:00 **18:00**	Invited Speaker **S.A. Sherif** *University of Florida, USA* **Liquid Hydrogen Storage in Microgravity** **#134** "Hydrogen - Heat Storage System Based on Metal Hydride and Phase Change Material" *J. Barale, G. Capurso, T. Stühff, F. Nastro, B. Neumann, J.B. von Colbe, P. Rizzi, C. Luetto, H. Stühff & M. Baricco* **#142** "Size Optimization of a Hybrid Wind/Photovoltaic/Fuel Cell Grid-Connected System with Hydrogen Storage" *L. Abdolmaleki & U. Berardi* **#149** "Effects of Initial and Boundary Conditions on Hydrogen Refueling Performances" *H. Luo, R. Chahine, P. Bénard & J. Xiao* **#155** "Modeling the Kinetic Behavior of the Li-RHC System for Hydrogen Storage Under Desorption Conditions" *A. Neves, J. Puszkiel, J.M.B. von Colbe, T. Klassen & J. Jepsen* **#171** "Hydrogen Production from the Catalytic Dehydrogenation of Hydrazine Borane Over Pd-Ni-B Catalyst" *M.R. Gürlük & G. Özkan* **#181** "Efficient Hydrolytic Dehydrogenation of Ethylene Diamine Bisborane over Pd-Ni-Zr-B Catalyst in the Ethylene Diamine Media" *H.B. Murathan, G. Özkan & G. Özkan*	**#147** "Modeling of an Assisted Cold Start of a PEMFC Coupled with a Metal Hydride Reactor" *T. Gießgen & T. Jahnke* **#190** "Topology Optimization of Radial Flow Field in Circular PEM Fuel Cells" *F. Razmara, L.F. Nogueira de Sá, J. Alves Nogueira, T. Lopes J. Romano Meneghini & E.C. Nelli Silva* **#288 "**Effects of Catalyst Loading on the Performance Improvement of PEMFCs Applying a Magnetic Field" *W. Yang, J. Kim & Y. Kim* **#320** "Experimental Study of Modified Polybenzimidazole/ Phosphonated Polyvinyl Alcohol Blend Membrane for Fuel Cell Operations" *A. Çalı, A. Şahin & İ. Ar* **#341** "Comparative Study on the Effect of Selected Dispersion Technologies for Fuel Cell Ink Preparation on the Overall PEMFC" *A.S. Amin, F. Özcan & D. Segets* **#123** "1D Calculation Model of Proton Exchange Membrane Fuel Cell Energy Characteristics" *A.V. Geliev, A. Varyukhin, V. Zakharchenko & I. Kiselev* **#96** "Multi-Objective Optimization of a Turbine Impeller for Fuel Cell Vehicles", *H. Mao, Y. Zhang & S. Xu* **#110** "Development and Testing of a Proton Exchange Membrane Fuel Cell Stack Envisioning Unmanned Aerial Vehicle Applications" *D. Santos, R.B. Ferreira, D. Falcão & A. Pinto*	**#17** "Assessment of the Socio-Economic Costs and Benefits of Increased Use of Biomethane and Hydrogen in Europe" *J. Michalski, M. Altmann, U. Bünger & J. Zerhusen* **#117** "Economical Preparation and Characterization of Dual-Ions Conducting Fuel Cell" *Y. T. Lu, W. C. Huang, S. H. Wang & H.Y. Chang* **#132** "Analysis of Economic Efficiency on International Hydrogen Supply Chains to Japan" *Y. Ishimoto, M. Hashimoto & E. Ohira* **#135** "On the Future Role of Hydrogen as Storage for Electricity" *R. Haas, M. Sayer & A. Ajanovic* **#367** "Hydrogen Transportation Options and Challenges" *M.A. Omid, M. Koç & O.N. Cora* **#62** "The Hydrogen Scientific Aspects in Romania" *I. Iordache, M. Varlam, E. Carcadea, D. Schitea & M. Iordache* **#101** "Mucilage in The Marmara Sea Versus Black Sea's H_2S; Hydrogen Energy Production Opportunities" *E. Atay & S. Apak* **#112** "Fabrication of Platinum-Cobalt Nanowires by Centrifugal Electrospinning Method as Electrocatalysts for PEMFC" *C. Y. Wu & M.H. Chang*	**#9** "Development of Innovative Hydrogen Combustion Systems for Industrial Gas Turbines" *N. Tekin, A. Horikawa, M. Ashikaga & H. Funke* **#33** "Optimal Tracking of Grid Operated Load Demand with Hydrogen based Storage System Using Model Based Predictive Control" *M.B. Abdelghany, M. Sheshzad, V. Mariani, D. Liuzza, L. Glielmo* **#289 "**Performance Analysis on the Novel PEMFC Assisted Ground Source Heat Pump System" *J. Kim & Y. Kim* **#1620** "Solar Assisted Hydrogen Production via PV/T Assisted Small Scale Transcritical Power Cycle with Direct Steam Generation" *G. Soyturk, O. Kizilkan, M.A. Ezan & C.O. Colpan* **#352** "Modeling and Design Optimization of Carbon-Free Hybrid Energy Systems with Thermal and Hydrogen Storage" *H. Wang, J. Bryan, A. Meek, S. Dana & M.S.I. Sakir* **#35** "Dynamics of Ammonia Autoignition; the Effects of H_2O_2 Addition" *D.C. Kyritsis, D.A. Goussis, D.M. Manias & D.G. Patsatzis* **#46** "Green Hydrogen Production from Geothermal Power Plants" *R. Sengun & F.S.T. Haklidir* **#89** "The Ultra-Efficient FC-ICE Hybrid Cycle with Thermochemical Recovery of The Waste Heat - Finite-Time and Finite-Speed Thermodynamics Analysis" *L. Tartakovsky & D. Diskin*	**#391** "External Effects on the High Frequency EIS Response of a PEM Electrolysis Cell" *I. Franzetti, A. Chan, A. Pushkarev & S. Metz* **#1462** "A Comparative Lifecycle Assessment (LCA) for Green and Grey Hydrogen Production in The South African Context" *O. Mbaba & H. Von Blottnitz* **#90** "From Batch Reactor to Continuous Flow Microchannel Reactor for Dehydrogenation of Perhydro-Dibenzyltoluene: A Preliminary Study" *A. Ahsan, K. R. Ajith & H. J. Lee* **#345** "Experimental Studies of Well Integrity Issues Related to Cement During Underground Hydrogen Storage" *E. R. Ugarte, D. Tetteh & S. Salehi* **#28** "Labview Modeling and Simulation of a Stand Alone Photovoltaic/Wind System with Hybrid Storage H_2-Battery" *H. Azoug & H. Belmili* **#376** "Effect of Starting Raw Material in Mechanical Alloying of TiFe Hydrogen Storage Alloy" *K. Tsuchikawa, S. Zholdayakova & H. Uchida* **#1488** "Reaction Process of Ammonia Production from Iron Nitride and Carbonated Water" *H. Eba, T. Liu & K. Fukami* **#1518** "Influence of Different Additives in The Hydrolysis of Sodium Borohydride" *L. Gómez-Coma, D. Silva, A. Ortiz, A.M.F. R. Pinto & I. Ortiz*
19:00 **22:00**	**Welcoming Reception** *Location will be Announced*				

Tuesday – June 28, 2022 – Online Link	
08:30 09:00	**CONFERENCE REGISTRATION**
09:00 09:35	**PLENARY SESSION 3** **Session Chair: TBA** **Kazunari Domen** *The University of Tokyo & Shinshu University, Japan* **Photocatalytic Water Splitting for Large Scale Solar Hydrogen Production**
09:40 10:15	**TBA**
10:15 10:45	**Coffee Break**

Tuesday – June 28, 2022

PARALLEL SESSIONS – 3

	ROOM 1 – Online Link 1	ROOM 2 – Online Link 2	ROOM 3 – Online Link 3	ROOM 4 – Online Link 4	
	Panel Discussion Session **Hydrogen for Sustainable Development**	**Track 1. Hydrogen Production: Thermochemical and Photonic Methods** **Session Chair: TBA**	**Track 2. Hydrogen Production: Electrolysis** **Session Chair: TBA**	**Track 3. Hydrogen Production: Biological Methods and Biohydrogen** **Session Chair: TBA**	
10:45 **12:15**	Women in Green Hydrogen **Moderator** **Ilgi Karapinar** *Dokuz Eylul University, Turkey* **Panelists** **Yilser Devrim** *Atılım University, Turkey* **Inci Eroglu** *Middle East Technical University, Turkey* **Selmiye Alkan Gürsel** *Sabanci University, Turkey* **Sara Shahmohammadi** *Canada Renewable Hydrogen Alliance (CRENHA/IRENHA) (Co-founder), Canada* **Gökçe Mete** *Stockholm Environment Institute, Sweden* This panel, supported by Women in Green Hydrogen (WiGH), will focus on the importance of hydrogen on sustainable development.	**#130** "Photocatalytic Glycerol Reforming on Gold - Copper Nano Metallic TiO_2" *P. Ozdemir & R. Yildirim* **#138** "Novel Design Concept for Thermolysis Reactor in the Thermochemical Copper-Chlorine Cycle of Hydrogen Production" *E. Armoudli & O. Jianu* **#424** "Photonic Reactors for Hydrogen Production and Wastewater Treatment in Underground and Underwater Applications" *D. Erdemir & I.Dincer* **#1541** "Potential Hydrogen Production as Byproduct in Catalytic Microwave Assisted Pyrolysis of ABS Plastic Waste" *O. Tavakoli & V. Mortezaeikia* **#381** "Combined Autothermal and Sorption-Enhanced Reforming of Olive Mill Wastewater for the Production of Hydrogen: Thermally Neutral Conditions Analysis" *P.P. Cerqueira, L. Madeira & M. Soria* **#84** "Mechanistic Kinetic Modeling Framework for the Conversion of Waste Crude Glycerol to Value-added Hydrogen-Rich Gas" *H. Ibrahim, A. Odoom, M. Fabrik, A. Salama & E. Shirif*	**Invited Speaker** **S. Vasudevan** *CSIR-Central Electrochemical Research Institute, India* **Hydrogen Production by Electrolysis to Clean Reality** **#109** "Analysis of Experimental Application of Permanent Neodymium Magnets in Alkaline Electrolyzer for Green Hydrogen Production" *M. Paranos & A. Kovač* **#157** "SOEC as Enabler of Highly Efficient Hydrogen & E-Fuel Production" *J. Rechberge, J. Macherhammer, M. Rothbart, R. von Helmolt & M. Hauth* **#250** "Powder Metallurgy: An Efficient and Scalable Production Process of Electrodes for the Gigawatt Electrolysis Industry" *T. Rauscher, C. Bernäcker, J. Albers, M. Anders, T. Büttner, S. Loos, T. Weißgärber & L. Röntzsch* **#156** "Activity of Binary Non-Precious Metal Oxide-Based Electrode for Oxygen Evolution Reaction in Acid" *K. Matsuzawa, S. Hirayama, Y. Kohara & A. Ishihara*	**#358** "Valorization of Green Market Waste for Biohydrogen Production" *I. Hacıoğlu, S. Ozmıhçı, I. Karapınar, M. Küs, A. Keleş & I. Kargül* **#410** "Adaptation of Caldicellulosiruptor Bescii to Unpretreated Cattle Manure: A Novel Approach for Hyperthermophilic Biohydrogen Production" *B. Tunca & Y.D. Yilmazel* **#437** "Bioelectrochemical Hydrogen Production from Dark Fermentation Effluents in Hyperthermophilic Microbial Electrolysis Cells" *A. Kas, B. Tunca & Y.D. Yilmazel* **#114** "Green Hydrogen Production from the Non-Centrifugal Sugar Industry" *N. Sanchez, D. Rodríguez-Fontalvo, N. M. Cantillo, R. Y. Ruiz-Pardo & M. Cobo* **#136** "A Preliminary Techno-Economic Analysis of Photobiological Hydrogen Production" *S. Genç & H. Koku* **#255** "Inhibitory Effects of Free Acetic Acid on Dark-Fermentative Hydrogen Production by Mixed Cultures" *Y. Yin & J. Wang*	**EXHIBITION**
12:15 **14:00**	**LUNCH**				

Tuesday – June 28, 2022

PARALLEL SESSIONS – 3

	ROOM 5 – Online Link 5	ROOM 6 – Online Link 6	ROOM 7 – Online Link 7	ROOM 8 – Online Link 8	Digital Boards – Onsite
	Track 5. Hydrogen Separation and Purification **Session Chair: TBA**	**Track 6. Hydrogen Storage** **Session Chair: TBA**	**Track 7. Fuel Cells: PEMFC** **Session Chair: TBA**	**Track 8. Fuel Cells: SOFC and other types** **Session Chair: TBA**	**POSTER PRESENTATIONS – 3** **Session Chair: TBA**
10:45 12:15	**Invited Speaker** **Wei-Hsin Chen** *National Cheng Kung University, Taiwan* **Operation and System Optimization for Hydrogen Production and Separation** **#268** "Towards A Better Sustainability of Electroless Pore-Plated Membranes: Life Cycle Assessments on Fabrication Strategies" *D. Alique, P. Leo, D. Martinez-Diaz, R. Sanz & J.A. Calles* **#312** "Electrochemical Hydrogen Separation from Reformate Gas Using Polybenzimidazole/MOF Composite Membranes" *G.N.B. Durmuş, E.O. Eren, Y. Devrim, C.O. Colpan & N. Ozkan* **#333** "Development of Bimetallic Electrocatalysts for High-Temperature Electrochemical Hydrogen Purification" *I.B. Bal, G.N.B. Durmuş & Y. Devrim* **#426** "Development of Pd-Based Dense Metallic Membrane with Sulfur Resistant MOF Coated for Hydrogen Separation" *S. Kalkan & G.G. Gur*	**Keynote Speaker** **Hirohisa Uchida** *Tokai University / KSP Inc., Japan* **Hydrogen Storage by Hydrogen Storage Alloys – Fundamentals and Application** **247** "Mathematical Modelling of Electrochemical Hydrogen Compressor: Temperature Influence Simulation Analysis" *D. Marciuš, D. Brezak & A. Kovač* **#271** "Multicriteria Analysis Decision for Priorization of Liquid Organic Hydrogen Carriers" *M. Almansa-Ortegon, J.C. Osorio & D.F. Manotas-Duque* **#399** "Performance Analysis of a Solar Tower Power Plant Integrated with Hydrogen Energy Storage System" *M.H. Mirbagheri, E. Baniasadi & H. Genceli* **#1520** "Synthesis and Characterization of MIL-53(Cr) Metal-Organic Framework for Remarkable Hydrogen Storage" *A. Hussain, K.S. Lin, M.T. Tu, Y.S. Lin, Y. Ko & Y.C. Hsieh*	**#386** "Use of Two-Phase Cooling for the Fuel Cell System" *J. Gulden, A. Sklarow & T. Bogdanske* **#418** "Air Supply Module for Pressurizing Fuel Cells in Airborne Applications" *D. Frank, J. Schröter, C. Bauer & C. Willich* **#423** "The Optimisation of Graphene-Based Microporous Layers for Polymer Electrolyte Fuel Cells" *F.C. Lee & M. Ismail* **#339** "Platinum-Based Honeycomb-Like Nanocomposites Directed by Self-Assembly for Oxygen Reduction Reaction in Fuel Cells" *Z. Wang, Y. Yang & Z. Lu* **#222** "Investigation on Airflow Performance of Open Cathode Proton Exchange Membrane Fuel Cell" *E. Pinar & G. Şefkat* **#405** "Two-Dimensional Simulation of Cold Start Process for PEMFC Stack with Various Current Loading Modes" *J. Liu & T. Zhang*	**#366** "Accelerated Stress Testing of Solid Oxide Fuel Cells via Ex-Situ Chemical Redox Cycling of Ni-CGO Fuel Electrodes" *A.M. Ferrario, M.D. Pietra, D. Pumiglia, L.D. Seta & S. McPhail* **#1609** "A New Method for Manufacturing Anode Supported Solid Oxide Fuel Cells with AFL" *O.Y. Akduman, M.S. Uyanik, E. Kabakci & A.M. Soydan* **#1621** "Experimental and Exergy Analyses of Internal Reforming Solid Oxide Fuel Cell Fed with Reformate Gas" *A. Erdogan, F. Capotondo, A. Hagen & C.O. Colpan* **#1501** "Development of LSF-LSM Composite Cathodes for IT-SOFC" *R.B. Dizaj, F. Kilic & T. Ozturk* **#107** "Numerical Investigation of Ni Migration in SOC Fuel Electrode Using Phase Field Model and Lattice Boltzmann Model" *B. Zu, M. Ni, Y. Wang, S. Zhao, Z. Guo, Q. Du & K. Jiao* **#273** "Combinatorial Development of LSF/RP-LSF/SCSZ Composite Cathode for Intermediate Temperature Solid Oxide Fuel Cells" *F. Kilic & T. Ozturk*	**#1445** "Hydrogen Storage on Alkali Metal Decorated GeC Two-Dimensional: A First Principles Study" *L.G. Arellano, F.D. Santiago, F.A. Serrano, J. Nakamura & M. Cruz-Irisson* **#1453** "Analysis of the First Step of Hydrogen Release of Ammonia Borane for PCA with Different Heating Rates" *R. Hinojosa-Nava, E. V. Mejía-Uriarte & R.Y. Sato-Berrú* **#359** "Heat Source Free CO_2 Methanation Over Hydrogen Storage Alloy" *K. Sawahara, R. Gemma & H. Kawanami* **#406** "Methanation of CO_2 over $LaNi_5$/V Layered Film" *S. Kaneta, H. Baba, S. Yamada & R. Gemma* **#407** "CO_2 Methanation over Surface Modified $LaNi_5$ Films with Pd" *H. Baba, S. Kaneta, S. Yamada, A. Motoshige & R. Gemma* **#1500** "Methods Study of Economic and Technical Analysis of Power-to-Gas Integrated Energy System" *H. Wang* **#1536** "Influence of Biogas Composition to Catalytic Methanation Process" *J. Kulas, L. Polák & A. Doucek* **#124** "Experimental Dynamic Load Cycling and Current Density Measurements of a Novel Bioinspired PEMFC Design", *B. Toharias, C. Suárez, A. Iranzo, A. Chesalkin, J. Pino & F. Rosa* **#1454** "A Study on Corrosion Durability Improvement of CrAl Coated Metal Bipolar Plate for PEMFC by 3D Laser Cladding Method" *H. Kang, J.H. Choi, H.W. Min, D.J. Kim & Y.S. Yoon*
12:15 14:00	**LUNCH**				

Tuesday – June 28, 2022

PARALLEL SESSIONS – 4

	ROOM 1 – Online Link 1	ROOM 2 – Online Link 2	ROOM 3 – Online Link 3	ROOM 4 – Online Link 4	
	COMPANY OVERVIEW PRESENTATIONS **Session Chair: TBA**	**Track 1. Hydrogen Production: Thermochemical and Photonic Methods** **Session Chair: TBA**	**Track 2. Hydrogen Production: Electrolysis** **Session Chair: TBA**	**Track 3. Hydrogen Production: Biological Methods and Biohydrogen** **Session Chair: TBA**	
14:00 **15:30**	**Yasushi Yamaki** *AGC Chemicals Europe, Ltd., Netherlands* AGC – Advancing Membrane Technology for Green Hydrogen **Mary-Rose de Valladares** *ATOME Energy, PLC, UK* ATOME: Pure-Play Hydrogen Producer **Oben Uluc** *Ballard Power Systems Europe, Germany* Fuel Cell Technology: Ballard's Vision for Zero-Emission Trucks **Aziz Kılıç** *BCS Enerji Mühendislik, Turkey* Hydrogen Burner and Combustion Systems **Sara Shahmohammadi** *Canada Renewable Hydrogen Alliance (CRENHA/IRENHA)* Democratization of Renewable Hydrogen through an International Renewable Hydrogen Alliance **Camel Makhloufi** *Eit Innoenergy – European Green Hydrogen Acceleration Center, France* A Value Chain Approach for a Sustainable Green Hydrogen Economy	**Invited Speaker** **Saim Özkar** *Middle East Technical University, Turkey* **Noble Metal Nanocatalysts for Hydrogen Generation from the Hydrolysis of Ammonia Borane** **#158** "Chemical Kinetics of two-step Thermochemical Decomposition of H_2S over Nickel Sulfide" *A.A. Blooshi, K.A. Ali, G. Palmisano, A. AlHajaj & M.A. Zahra* **#1512** "Photocatalysis vs Photovoltaics: Why Not Make It a Symbiosis?" *P. Hazemann, C. Brochier, L. Peruchon & E. Puzenat* **#216** "A Novel Nanoporous Mg-Li Material for Efficient Hydrogen Generation" *X. Song* **#29** "Ammonia Decomposition over Ru-Coated Metal Structured Catalysts for Cox-Free Hydrogen Production" *K.Y. Koo, H.B. Im, D. Song & U. Jung*	**#19** "The Use of Nanostructured Nickel-Molybdenum Oxide as an Efficient and Low Cost Electrocatalyst for the Hydrogen Evolution Reaction in the Acidic Medium" *M. Rammal & S. Omanovic* **#70** "Modeling of H_2O and CO_2 Electrolysis in a Molten Carbonate Electrolyzer" *D. Monzer & C. Bouallou* **#218** "Electrochemical Performance of 3-D Printed Electrode Geometries in View of Enhanced Gas Evacuation during Alkaline Water Electrolysis" *F. Rocha, N. Wauthy, R. Delmelle, C. Georgiadis & J. Proost* **#231** "Electrocatalytic Ammonia Oxidation Coupled with Hydrogen Production - Moving Towards a Carbon Neutral Water Treatment Cycle" *E. Latvyté, X. Zhu, L. Wu, P. Vale & J. Graves* **#167** "A Novel Hydrogen Economy Based on Electrochemical Cells Integrated with Fossil Fuel Assets and Wastewater Resources" *L.A. Jolaoso, P. Kazempoor & J. Asadi* **#224** "Experimental Research on 100-Bar High Pressure Differential Proton Exchange Membrane Electrolyzer" *J. Dang, F. Yang & Y. Jiang*	**#264** "Optimization of Biohydrogen Production Yields with Locally Isolated Thermophilic Bacteria from Hot Springs" *I. Akacin, S. Ersoy, T.K. Gundogdu & M. Gungormusler* **#154** "Comparison of Wild Type and Uptake Hydrogenase Deficient Mutant Strains of Rhodobacter Capsulatus for Hydrogen and Phb Production" *E. Tarlan, E. Hoşafcı, T.H. Bayramoglu & H. Koku* **#1450** "Modeling of H_2 Production from Wastewater Using Microbial Electrolysis Cell (MEC) and Concurrent Cod Reduction Applying Artificial Neural Network (ANN)" *A.K.M.K. Islam, P. S. M. Dunlop, N. J. Hewitt & C.Brandoni* **#51** "Towards Scalable Bio-Hydrogen: Transparent PVA Cryogel as Immobilisation Matrix for Photofermentative Bacteria" *JP. du Toit & R. Pott* **#52** "A Thermosiphon Based Photobioreactor for Photofermentative Hydrogen Production" *B. A. Cho, C. Bosman, S. Bradshaw & R.W.M. Pott* **#254** "Focusing on a New Biohydrogen Production Strategy Using Chlamydomonas Reinhardtii Mutants" *C. Yarkent, I. Oral, D.S. Oncel & S.S. Oncel*	**EXHIBITION**
15:30 **16:00**	**Coffee Break**				

Tuesday – June 28, 2022

PARALLEL SESSIONS – 4

	ROOM 5 – Online Link 5	ROOM 6 – Online Link 6	ROOM 7 – Online Link 7	ROOM 8 – Online Link 8	Digital Boards – Onsite
	Track 8. Fuel Cells: SOFC and other types **Session Chair: TBA**	**Track 6. Hydrogen Storage** **Session Chair: TBA**	**Track 7. Fuel Cells: PEMFC** **Session Chair: TBA**	**Track 9. Integrated Hydrogen Energy Systems** **Session Chair: TBA**	**POSTER PRESENTATIONS – 4** **Session Chair: TBA**
14:00 **15:30**	**#173** "Efficient Regenerative Hydrogen/Vanadium Fuel Cell Using Trichome-Like Electrodes for Enhanced Vanadium Electrolyte Utilization and Its System Integration" *B.K. Chakrabarti, Y.S. Hajimolana, M. Ouygang, J.R. Garcia, A.K. Singh, Y. Xia, N.P. Brandon & V. Yufit* **#294** "Identification of Oxygen Ion Conductivity of Two Layers Yttria Stabilized Zirconia Matrix Impregnated by Lithium/Potassium Electrolyte for Molten Carbonate Fuel Cells" *J. Milewski* **#1572** "Development of Novel Membrane Structures Via Radiation Induced Grafting and Electrospinning Technique for Anion Exchange Membrane Fuel Cells" *A.C. Kirlioglu, N. Rajabalizadeh, S.A. Gursel & B.Y. Kaplan* **#7** Development of Highly Durable and Dense GDC Buffer Layer for Anode-Supported Planar SOFC" *R.H. Song, A. Hussain, M.Z. Khan, D.W. Joh, J.E. Hong, S.B. Lee & T.H. Lim* **#1581** "Development of Bromine Resistant Anode Catalyst for Hydrogen Oxidation and Reduction Reactions in Hydrogen Bromine Flow Batteries" *B. Kirtoklu & B. Ficicilar* **#1511** "Effect Partial Substitution of Lanthanum on the Thermal Properties of $La_{0.7-x}Ln_xCa_{0.3}MnO_3$ (Ln= Pr or Sm) Perovskites" *J.R. Hernandez, A.M.T. Huerta, S.B.B. Sibaja, M.A.D. Crespo, D.P. Ramirez, W. Cruz & F.G. Galicia*	**#416** "Compatibility of Polymers and Composites with Hydrogen in Transport and Storage Equipment" *X. Lefebvre, M.H. Klopffer & C.C. Lopez* **#441** "Numerical and Experimental Evidence of Defects Creation in EPDM After Hydrogen Decompression" *Q. Gardavaud, M. Melnichuk, F. Thiébaud & D. Perreux* **#1459** "Numerical Simulation on Pressure Reduction Phenomenon with Large-Scale Liquefied Hydrogen Tank" *K. Tani, T. Himeno, T. Watanabe, H. Kobayashi, S. Unno, S. Kamiya, Y. Nakashima, O. Muragishi & K. Kanbe* **#369** "Development and Implementation of Metal Hydride Materials and Technologies in South Africa" *M. Lototskyy, V. Linkov & S. Pasupathi* **#221** "High Surface Area Zeolitic Imidazolate Frameworks for Hydrogen Storage at Room Temperature" *S. Pinjari, T. Bera, R. M. Badhe & E. Kjeang* **#263** "Experimental Proof of Concept of a Novel High-Density, Low-Pressure Hydrogen Storage System Utilizing Thermochemical Heat Storage" *M. Lutz, M. Linder & I. Bürger*	**#297** "Effect of Chitosan on the Corrosion Inhibition for Aluminium Alloy in H_2SO_4 Medium" *G.A. Arwati, E.H. Majlan, L.K. Shyuan, K. Ariffin, T. Husaini, S. Alva, W. Muhammad & N.A.M. Radzuan* **#1457** "Numerical Investigation on the Effects of Inhomogeneous Gas Diffusion Layer and Impact of Interfacial Contact Resistance on Performance of Polymer Electrolyte Fuel Cells" *U. Shinde, P. Padavu & P.K. Koorata* **#1461** "Performance Evolution of PEM Fuel Cells with Straight and Wavy Parallel Flow Channels of Various Wavelengths Using CFD Simulation" *R. Kaiser, G.M. Jeon & J.C. Park* **#1471** "Highly Dispersed PtCo Nanoparticles on Self-Assembled Hierarchically Ordered Mesoporous Carbon Support for Polymer Electrolyte Membrane Fuel Cells" *Y. Yang, Z. Wang, C. Yan & L. Shen* **#1489** "Investigating the Water Flooding Effects on the Performance of Low-Temperature Proton Exchange Membrane Fuel Cells" *A.N. Desai, S. Mohanty, V. Ramadesigan, S. Singh & M. Shaneeth* **#230** "Effect of Platinum Particle Gradient Distribution in Low Platinum Loading Cathode Catalyst Layer On MEA Performance" *R. Lin & S. Liu*	**#108** "Design and Optimization of Green Hydrogen-based Hybrid Energy System" *C. Ceylan & Y. Devrim* **#176** "Numerical Investigation of Thermal Performance of Hydrogen-Fueled Micro-Combustor with Trapezoidal Rib" *A. Lachraf & M.S. Ameur* **#1479** "Performance Assessment of a Calcium-Iron Bromide Cycle Based Multigeneration System" *F. Sorgulu & I. Dincer* **#1604** "Mathematical Modeling and Dynamic Simulation of a PV-based Hydrogen Generation and Storage System" *G. Soyturk, O. Kizilkan, M.A. Ezan & C.O. Colpan* **#1607 "**Thermodynamic Analysis of a New Compressed Air Energy Storage-based Combined Plant for Multigeneration with Hydrogen Generation" *M. Koc, Y.E. Yuksel & M. Ozturk* **#1522** "Thermodynamic Analysis of a New Geothermal Energy Based Integrated Plant for Compressed Hydrogen Production" *F. Yilmaz & M. Ozturk*	**#1464** "Superhydrophobic Fluorinated Carbon for Improved Microporous Layers in Polymer Electrolyte Fuel Cells" *E.M. Can, K. Sasaki & S. M. Lyth* **#1498** Evaluation of Ethanol Microfluidic Device at Low Electrocatalysis Loading, "*A.M. Lázaro, J.L. García, L.G. Arriaga & A. Arenillas* **#217** "Simulation Analysis and Applications of 40 kW Pem Fuel Cell Stack in Series System with Hydrogen Recovery" *J.K. Kuo & T.H. Lin* **#325** "Optimization of Low-Grade CGO Transport Properties for SOFC Applications" *J.C.C. Abrantes, E. Gomes, D. Ramasamy & A.A.L. Ferreira* **#326** "Electrical Conductivity of Y-Doped CGO Based Materials Sintered by Hot Press" *J.C.C. Abrantes, E. Gomes, D. Ramasamy & A.A.L. Ferreira* **#321** "Intelligent Monitoring of Hydrogen/Vanadium Redox Flow Battery" *C.Y. Lee, C.H. Chen, C.L. Hsieh, Y.C. Chen & S.Y. Chen* **#172** "Vertically Integrated Projects as A Transformative Pedagogy for Green Hydrogen Study Abroad Programs" *S.F. Bauserman, J.N. Ortiz, J.C.R. Saravia, J.W. Sheffield & M.J. Mereu* **#76** "A Novel Combined Biomass-Based Hydrogen/Ammonia Production and Renewables Multi-Generation System" *D. Wen & M. Aziz*
15:30 **16:00**	**Coffee Break**				

Tuesday – June 28, 2022

PARALLEL SESSIONS – 5

	ROOM 1 – Online Link 1	ROOM 2 – Online Link 2	ROOM 3 – Online Link 3	ROOM 4 – Online Link 4	
	COMPANY OVERVIEW PRESENTATIONS **Session Chair: TBA**	**Track 1. Hydrogen Production: Thermochemical and Photonic Methods** **Session Chair: TBA**	**Track 2. Hydrogen Production: Electrolysis** **Session Chair: TBA**	**Track 14. Hydrogen Industry, Commercialization and Marketing, Applications** **Session Chair: TBA**	
16:00 18:00	**Kahraman Çoban** *Enerjisa Üretim A.Ş., Turkey* Hydrogen Activities of Enerjisa Üretim A.Ş. **Meltem Küs** *GKE Energy, Turkey* Overview of Hydrogen Studies at the GKE R&D Center **Naveed Akhtar** *Hy-Hybrid Energy Scotland, United Kingdom* Hy-Hybrid Energy: Green Hydrogen & Zero-Emission Mobility **Leila Asdal Danielsen** *Hystar, Norway* Game-Changing PEM Electrolysers for Large-Scale Hydrogen Production **Ekain Fernandez** *TECNALIA, Spain* R&D activities on Hydrogen at TECNALIA **Hüseyin Devrim** *TEKSIS Ileri Teknolojiler, Turkey* The Current Status and Vision of TEKSIS in Hydrogen Energy Technologies **Erika Niino-Esser** *Thyssenkrupp Industrial Solutions, UAE* Large-scale Water Electrolysis by Thyssenkrupp **Camilla Røhme** *IFE, Institute for Energy Technology, Norway* Overview of R&D Activities on Hydrogen at IFE	**Invited Speaker** **Yun Hang Hu** *Michigan Technological University* **Thermo-Photo Catalytical Hydrogen Production** **#272** "Stationary Methanol Steam Reforming to Hydrogen Fuel for Fuel-cell Filling Stations" *A.A. Tountas, M. Sain & G. Ozin* **#1561** "The Effect of Thermal Oxidation Time in Air and Argon Atmosphere on PEC Efficiency of Hematite (Fe_2O_3) Photoanode" *F.B. Yilmaz & C. Sarioglu* **#1584** "Production of Hydrogen-Rich Synthesis Gas by Gasification of Waste Materials in a Rotary Kiln Reactor" *A. Bubalo, D. Maljkovic & D. Vouk* **#83** "Modeling Catalyst Poisoning During Methane Reforming for the Production of Hydrogen" *H. Ibrahim, A. Salama & M. Fabrick* **#281** "Hydrogen Synthesis by Hydrogen Sulfide Decomposition in Catalytic Membrane Reactor" *S. Khairulin, A. Salnikov, M. Kerzhentsev & Z. Ismagilov* **#396** "Sodium Formate Formation Vi in-SiTu Catalytic Hydrogen Production for Decarbonization" *A.K. Figen, O. Coskuner & U.B. Demirci*	**#382** "High-Pressure PEM Water Electrolysis Based on Hydraulic Single Cell Compression" *F.J. Wirkert, U. Rost, J. Roth & M. Brodmann* **#251** "Investigation of Electrolyte Forced Flow for Alkaline Water Electrolysis Using Computation Fluid Dynamics" *C. Georgiadis, F. Rocha, J. Lambrechts & J. Proost* **#209** "Membrane Electrode Assemblies for Pemwe Based on Glass Fibre Reinforced Pfsa/Ssps Composite Membranes" *C. Maximilian, D. Düerkop, N. Kazamer, F. Wirkert, U. Rost, M. Brodmann & A. Schmiemann* **#308** "Ir-Decorated Pt Nanoparticles as A Bifunctional Catalyst for Oxygen Evolution and Reduction Reactions" *L.B. Redondo, V. Matolin & Y. Lobko* **#334** "Development and Optimization of Semiconductor NS-TiO_2-IN_2O_3 Doped Photoelectrochemical Solar Cell for Hydrogen Production" *P. Chawla, K. Pooja & M. Tripathi* **#307** "A Numerical Energy and Exergy Analysis of The Effect of Phase Change Materials on A Photovoltaic Thermal Collector for Hydrogen Production in North Cyprus" *A. Sultan, M. Abid & M. Dagbasi* **#1449** "A High-Performance Electrolysis Cell Promises More Cost-Competitive Renewable Hydrogen" *G.F. Swiegers, A. Hodges, G. Tsekouras, K. Wagner, C.Y. Lee, P. Tiwari & G.G. Wallace* **#1487** "Improving Hydrogen Evolution Catalytic Activity of 2D Carbon Allotrope Biphenylene with B, N, P Doping: Density Functional Theory Investigations" *M. Singh, A.Shukla & B. Charkroborty*	**#12** "Analysis of the Hydrogen Purity at Hydrogen Refueling Stations" *H. Janßen, M. Kröner, A. Dyck, M. Wark & C. Agert* **#285** "Chiyoda's Approach for Hydrogen Supply Chain Business with "SPERA Hydrogen™" System" *O. Ikeda, M. Sara, M. Nagai & T. Morimoto* **#328** "Demonstrating the Liquefied Hydrogen Seaborne Supply Chain to Japan and Development of Future Commercialization" *T. Hasegawa, Y. Taira, N. Maruyama, N. Ueda, Y. Yoshino, K. Yoshimura, M. Nishimura & E. Harada* **#365** "Modified WSGG Gas Radiation Model for any Mixture of H_2/CH_4 Fuel for High-Temperature Industrial Furnaces" *B.L. Creurer & F. Ammouri* **#118** "Solenco Power: Hydrogen for The Decarbonization of The Energy Sector" *H. Vandenborre & F. López* **#166** "Green Hydrogen as a Fundamental Energy Vector for Algeria's Future Sustainable Energy and Industrial Systems (Hydrogen as a Fuel in The Transport Sector)" *A. Abdelmouiz & A. Hamdi* **#80** "Injection of Hydrogen into High Pressure Natural Gas Grids: Investigation the Impact on Materials and Equipment at Relevant Environment" *V. Gil, J. Sánchez-Laínez, A. Cerezo-Alarcón, M. D. S. de Gracia, E. Fernandez & V. Madina* **#200** "Air Carbon Recycling for Aviation Fuel Technology" *V. Gil, K. Tadanaga, H. Gröger, S. Wuttke, J. Gurauskis, P. Camargo, R. Giudici, F. Bonino & J. Hadermann*	**EXHIBITION**
19:00 22:30			**Banquet**		

Tuesday – June 28, 2022

PARALLEL SESSIONS – 5

	ROOM 5 – Online Link 5	ROOM 6 – Online Link 6	ROOM 7 – Online Link 7	ROOM 8 – Online Link 8	Digital Boards – Onsite
	Track 5. Hydrogen Separation and Purification **Session Chair: TBA**	**Track 6. Hydrogen Storage** **Session Chair: TBA**	**Track 7. Fuel Cells: PEMFC** **Session Chair: TBA**	**Track 9. Integrated Hydrogen Energy Systems** **Session Chair: TBA**	**POSTER PRESENTATIONS – 5** **Session Chair: TBA**
16:00 **18:00**	**#1502** "Development of Hydrogen Purification Membrane based on Pd-Mn-Ag Ternary System" *M.M. Kose, F. Piskin & T. Ozturk* **#236** "Mixed Matrix Membranes for Hydrogen Recovery from Industrial Waste Streams" *G. Moral, A. Ortiz, D. Gorri & I. Ortiz* **#1505** "Energy Analysis of a Membrane Reactor-based Hydrogen Production System" *Y.N. Atak, C.O. Colpan & A. Iulianelli* **#1559** "Parametric Investigation on the Purification Characteristics of $La_{0.9}Ce_{0.1}Ni_5$ Under Various Absorption/Desorption Conditions" *A. Kumar & P. Muthukumar* **#1566** "Investigation of Low-Temperature Polymer Electrolyte Membrane for Electrochemical Hydrogen Compressor" *A.C. Turkmen, C.E. Meydan, K. Agtoprak, H. Acidereli R.G. Akay, M.E. Kibar & C. Celik* **#1580** "Evaluation of the Effect of Temperature, Air Exposure and Gas Mixture on Pd_{82}-Ag_{15}-Y_3 for Hydrogen Separation" *O. Jazani, M. Adejumo & S. Liguori* **#1612** "Parameter Optimization of a PBI Membrane-Based High Temperature-Electrochemical Hydrogen Compressor Fed with H_2 and CO Mixture" *C. Kuzu, C.O. Colpan, G.N. B. Durmuş & Y. Devrim* **#1583** "Overview of Electrochemical Hydrogen Purifier Performance Diagnostics" *A.S. Pavasovic, I. Pivac & F. Barbir*	**#290** "Studies on Hydrogen Storage Performance of Catalyzed MgH_2" *S. K. Verma, M. A. Shaz & T. P. Yadav* **#317** "HYSTORIES Project: Technical Developments and Deployment Outlooks for Pure Hydrogen Storage in Depleted Fields and Aquifers" *A. Réveillère, J. Michalski, B. Löder, C. Vincent, M. Wagner, J. Simón & K. Luboń* **#332** "The Effect of Fiber Bandwidth on Stress Distribution and Layer Thickness Change at the Dome Part of Hydrogen Storage Vessel" *İ. Yılmaz, E. Pınar & O.V. Akgün* **#1466** "Metal Hydride Composite Materials for Thermo-Chemical Hydrogen Compression" *M. Lau, O. Ehrensberger & F. Heubner* **#145** "Investigation of Temperature and Pressure Effect on the Hydrogen Sorption Kinetics in the Interface of Mg/MgH_2 by Molecular Dynamics" *M.F. Kapçı & Z. Wu, B. Bal* **#282** "Numerical Simulation and Parametric Analysis of the Wall Strain Distribution of Vertically Placed Metal Hydride Based Hydrogen Storage Container" *S. Cao, X. Yin, F. Yang, L. Jian, Y. Wu, Z. Wu & Z. Zhang* **#1508** "Boron-Hydrogen Materials Towards Decarbonisation" *S. Kurtuluş, B.C. Filiz, H.C. Yörüklü, K. Açıkalın, H.E. Figen, U.B. Demirci & A.K. Figen* **#301** "Application of Mischmetal Based Low Pressure Metal Hydrides for Solar Energy Storage" *K. Sarath Babu & E. Anil Kumar*	**Keynote Speaker** **Xianguo Li** *University of Waterloo, Canada* **The Degradation and Durability of Hydrogen PEM Fuel Cells** **#371** "Influence of Operating Parameters on the Cold Start of Polymer Electrolyte Fuel Cell Systems for Transportation and Aerospace Applications" *G.M. Rios & J. Schirmer* **#375** "Effect of Humidification Temperature and Hydrogen Flow Rate on the Performance of a PEMFC Using Pt/C And CoFe/N-C Catalyst in the MEA" *D.D. Rohendi, D.H. Yulianti, N. Syarif, A. Rachmat, A. Sumboja, N.F. Sya'baniah, I. Amelia & J. Malik* **#1493** "Microwave-Assisted Synthesis of Porous Carbon from Peanut Shells" *H. Doğan & T. Meşeli* **#1494** "Facile Synthesis for Porous Carbon from Biomass Sugarcane Bagasse" *H. Doğan & T. Meşeli* **#1510** "Highly Porous Pt-CeO_2-C Thin Film Catalyst Prepared by Magnetron Co-Sputtering for Proton Exchange Membrane Fuel Cells" *X. Xie, Y. Yakovlev, P. Kúš, J. Nováková, K. Veltruská, Y. Lobko, V. Matolín, I. Khalakhan & I. Matolínová* **#1551** "Numerical Analysis of Liquid Water Permeation Process Through the Deformed Gas Diffusion Layer of PEM Fuel Cell" *Y. Liu, Y. Du, M. Wick & S. Pischinger*	**#293** "Improved Reactor Design for A Metal Hydride Refrigeration System in Hydrogen Powertrains" *I. Burger, A. Wimmer, S. Feierfeil & M.Linder* **#309** "Thermodynamic Analysis of an Integrated System with Solar Methane Cracking and Co-Electrolysis of CO_2/H_2O for Methanol and Electricity Production" *A.Banu & Y.Bicer* **#1443** "An Application and Evaluation of Blending Biogas and Hydrogen into the Natural Gas for Combustion Applications" *M. Ozturk & I. Dincer* **#1456** "Comparative Analysis of a Multi-Generation System Using Different Conventional and Nano-based Working Fluids" *T.A.H. Ratlamwala, H. Javed, S. Naseem & K.Kamal* **#175** "Fuel Cell-Battery Hybridization for an Unmanned Surface Vehicle Powerplant" *D.T. Guzman, L. Vargas, E.M. Lopez, F. Isorna, V. Garcia, A. Gimenez, M. Martinez, L. Domenech, F. Sanchez & J. Renau* **#69** "Design of A New Hydrogen Driven Integrated Powering System for Ferry Applications" *A.E. Karaca & I. Dincer* **#47** "Thermal Balance in Fuel Cell Vehicles with Liquid Hydrogen Utilisation" *V. Yanchuk, S. Artyushevskiy, A. Unitsky & I. Kavalcuk* **#201** "Novel Teg Heat Exchanger in Cu-Cl Cycle of Hydrogen Production" *A. Mohammadi, E. Armoudli & O.A. Jianu*	**#295** "Formability and Performance Testing of Stainless-Steel Bipolar Plate for Air-Breathing PEMFC" *C.Y. Chen, N.H. Wu & K.J. Huang* **#310** "Proton-Conducting Solid Oxide Fuel Cells with NLSCF Cathode" *S.W. Lee, W.Y. Huang, Y.C. Huang & C.J. Tseng* **#238** "Characteristic and Performance of $Ce_{0.6}Mn_{0.3}Fe_{0.1}O_2$ for Solid Oxide Fuel Cells Anode Electrode" *K.Y. Chao, D. Mohantya, I.M. Hung & T.N. Lin* **#177** "Technical and Economic Assessment of a Solar Hydrogen Production Plant in a Peruvian Mining Company" *E.P. Ochoa, P. Alarcon, J. Gonzales, A. Malpartida, M. Campos, G. Bancayan, L. Machaca, D. Tafur, I. Puente, S. Bauserman, J. Gamarra, H. Bravo, J. Ramos & J. Sheffield* **#1444** "A Comparative Life Cycle Assessment of Hydrogen Production Using the Spectrum of Hydrogen Colors" *H. Karasu & I. Dincer* **#1611** "Towards Ethical Energy Storage Materials – Cobalt Free Cathode Active Material LKMNO" *K. Charzewska, O. Surma, G. Moskal, A. Węgrzyn & M. Molenda*
19:00 **22:30**	**Banquet**				

Wednesday – June 29, 2022

PARALLEL SESSIONS – 6

	ROOM 1 – Online Link 1	ROOM 2 – Online Link 2	ROOM 3 – Online Link 3	ROOM 4 – Online Link 4	
	TUTORIAL SESSION **Virtual & Physical Platform for Fuel Cell System Development**	**Track 1. Hydrogen Production: Thermochemical and Photonic Methods** **Session Chair: TBA**	**Track 3. Hydrogen Production: Biological Methods and Biohydrogen** **Session Chair: TBA**	**Track 8. Fuel Cells: SOFC and other types** **Session Chair: TBA**	
09:00 **10:15**	**Organizers** **Simon Clark, Mike Gerhardt & Yash Raka** *SINTEF SINTEF Industry / Sustainable Energy Technology, Trondheim* **Nadia Yousfi Steiner & Daniel Hissel** *UBFC, Univ. Bourgogne Franche-Comté, FEMTO-ST, FCLAB, CNRS, Belfort, France* **Part1** **Electrochemical Modelling Theory Basics** Nadia Yousfi Steiner **Part2** **Introduction to Open Modelica and VFCS Library** Yash Raka & Mari Juel **Part3** **VFCS Battery and FC Model** Yash Raka & Mari Juel **Part4** **VFCS Range extender Model** Yash Raka & Mari Juel For more information, please visit https://whecistanbul.org/tutorial-session/	**#1545** "Shape Dependent Electrocatalytic Hydrogen Evolution by Copper-Antimony Sulfide" *E. Aslan, F. Ozel & I.H. Patir* **#415** "A Thermodynamic Evaluation of Boron Based Thermochemical Hydrogen Production Cycle" *O.Oruc & I. Dincer* **#85** "Application of DFT and Machine Learning to Predict Optimum Operating Conditions for Methane Pyrolysis Using Molten Metals for Carbon-Free Hydrogen Production" *H. Ibrahim, L. Ugwu & Y. Morgan* **#1537** "Ni-Based Catalysts for CO_2 Reforming of Glycerol to H_2" *A.K. Avci & O. Selcuk* **#202** "Thermodynamic Analysis of Biogas-to-Methanol Conversion with CH_4 Recycling Using ASPEN HYSYS" *H. Ibrahim & P. Rosha*	**#53** "Biological Hydrogen Production by Immobilized Rhodopseudomonas Palustris: Comparison of a Packed Bed and Fluidized Bed Photobioreactor System" *B. Ross & R. W.M. Pott* **#261** "Biogas and Biohydrogen Production Using Spent Coffee Grounds" *L. Vanyan, A. Cenian & K. Trchounian* **#346** "Inhibitory Effects of Free Acetic Acid on Dark-Fermentative Hydrogen Production" *J. Wang & Y. Yin* **#1529** "Batch Dark Fermentative Biohydrogen Production from Fig (Ficus Carica): The Effect of C/N Ratio" *W.A. Abibu, M. Kaya, Y. Karadas & I. Karapınar* **#374** "Assessment of Biohydrogen Production Routes from Organic Solid Waste: The Case of Cartagena, Colombia" *C. Lizarazo, W. Hurtado, O. Vanegas, O. Pupo-Roncallo & L. Corredor*	**#1503** "A New Class of Amourphous/Nanocrystalline (La,Sr)CoO_3 Based Cathodes for IT-SOFCs" *D. Sari, Z.C. Torunoglu, B. Yasar, Y. Eren & T. Ozturk* **#1467** "A Highly Stable Cobalt Spinel-GDC Nanocomposite Cathode for Intermediate-Temperature Solid Oxide Fuel Cells" *S.B. Lee, S.U. Rehman, M.H. Hassan, H.S. Kim, R.H. Song, J.E. Hong & S.J. Park* **#1564** "Investigation of Palladium Coated Nickel Foam Anode Electrode Application for Direct Ethanol Fuel Cells" *C. Kilic, K.C. Ata, A.C. Turkmen, S. Demirel & C. Celik* **#1452** "Theoretical and Experimental Analyses of Ethanol-Fueled SOFC Micro-Cogenerator" *A.Coralli, S.A. Venancio & P.E.V. de Miranda* **#1499** "Effect of a Reduction of the Catalyst Loading on the Performance of a Mini Passive Direct Methanol Fuel Cell" *V.B. Oliveira, C.S. Moreira & A.M.F.R. Pinto*	**EXHIBITION**
10:15 **10:45**	**Coffee Break**				

Wednesday – June 29, 2022

PARALLEL SESSIONS – 6

	ROOM 5 – Online Link 5	ROOM 6 – Online Link 6	ROOM 7 – Online Link 7	ROOM 8 – Online Link 8	Digital Boards – Onsite
	Track 14. Hydrogen Industry, Commercialization and Marketing, Applications **Session Chair: TBA**	**Track 6. Hydrogen Storage** **Session Chair: TBA**	**Track 7. Fuel Cells: PEMFC** **Session Chair: TBA**	**Track 15. Hydrogen Economy, Logistics, Infrastructure** **Session Chair: TBA**	**POSTER PRESENTATIONS – 6** **Session Chair: TBA**
09:00 **10:15**	**#1442** "Use of Hydrogen for Green Steel Production" *P. Duarte, S. Maggiolino & J. Martinez* **#1495** "Large Scale Low-Carbon Hydrogen Export from Qatar to The Asia-Pacific, and Europe - Techno-Economic Assessment" *A. Sleiti, W. Al-Ammari & M. Al-Khawaja* **#388** "Real-World Energy Measurements and Local Hydrogen Cost as Input Parameters for Regional Vehicle Fleet Optimization" *R. von Helmolt, M. Rothbart, H. Beck, F. Bindges & L. Lerminiaux* **#442** "Fraunhofer Hydrogen Labs: Unique test infrastructure for the entire hydrogen value chain" *V. Kohler, K. Schalk, M. Kuhnel, J. Hoflinger & S. Schmidt* **#387** "Hydrogen-Methane Mixture Storage in Depleted Reservoirs: An Option for Converting Decommissioned Offshore Platforms" *A. C. Uggenti, G. Rech, R. Gerboni, A. Carpignano, A. Aliberti, A. Tortora & G. Ballocco*	**#303** "Study of the Effect of Zr_3Fe Addition on Hydrogen Storage Behavior of Ti_2CrV Alloys" *D.B. Monsalve, J. Huot & A.D.M. Amariz* **#378** "Introduction of SPERA Hydrogen System for Massive Hydrogen Storage and Transportation" *Y. Okada, K. Imagawa, H. Kawai, T. Mikuriya, F Yagi & N. Kaji* **#355** "Study on Hydrogen Storage Performance of C14 Type $Ti_{0.24}V_{0.17}Zr_{0.17}Co_{0.17}Fe_{0.8}Mn_{0.17}$ High Entropy Alloy" *A. Kumar, N.K. Mukhopadhyay & T.P. Yadav* **#1540** "Plain Coiled Tube Heat Exchanger for Metal Hydride Reactors" *K.V. Krishna, V. Pandey & M.P. Maiya* **#361** "Thermodynamic Analysis of a Metal Hydride Based Hydrogen Compressor Using $La_{1-x}Ce_xNi_5$ Hydrides" *D. Dashbabu & E.A. Kumar*	**Invited Speaker** **Frano Barbir** *University of Split, Croatia* **Common Misconceptions about Hydrogen and How to Debunk Them** **#27** "Thermal Management of Edge-Cooled 1 kW Portable Proton Exchange Membrane Fuel Cell Stack" *I. Tolj, Z. Penga & F. Barbir* **#143** "Optimizing Fuel Cell Membranes Through Thickness and Cation Doping", *X. Luo, A. Katzenberg, A. Crothers, V. Ehlinger, A. Weber, R. Borup & A. Kusoglu* **#385** "Synthesis and Characterization of Cationic Membranes with Poly(Indene) Sulphonated Polyelectrolyte for Fuel Cell Application" *H. Thomaz, J. de Souza, A. Ferreira & F.J.B. Brum*	**#185** "Optimization of a Hydrogen Supply Chain: A Case Study for Italy" *R. Luise, A. Brisse, P. Quaglia & C. Azzaro-Pantel* **#191** "Life Cycle Costing Approaches of Fuel Cell and Hydrogen Systems: A Literature Review" *Y. Ishimoto, C. Wulf & W. Kuckshinrichs* **#243** "Modeling for the Development of Heavy-Duty Refueling Protocols" *A. Charolais, F. Ammouri, E. Vyazmina, A. Grab, A. Ruiz, A. Kvasnicka, C. Spitta, R. Tawk, Q. Nouvelot, N. Benvenuti & T. Guewouo* **#225** "The Techno-Economic Evaluation of Hydrogen Production Cost Towards Anion Exchange Membrane Electrolyzer" *B. Yang, R. Zhang & C. Zhang* **#241** "Syngas Production via Chemical Looping Dry Reforming of Methane Using Iron-based Oxygen Carriers" *P. C. Tsou, R. Y. Chein & W. H. Chen*	**#1507** "Graphite Based-Polymer Composite Bipolar Plates for PEM Fuel Cells" *M. G. Rodriguez, A.M. Darabut & Y. Lobko*" **#1521** "Materials Based on Pt-Ru-Ir, Made by Thermal Pyrolysis to be used in URFC" *A. Fernandez & A. Altamirano* **#1530** "Experimental Validation of a 2-D Multi-Layer Model for Fuel Cell Diagnosis Using Magneto-Tomography" *A. Plait & F. Dubas* **#1569** "Development of Hydrogen Range Extender for a Specialized Multipurpose Vehicle" *L. Polak, A. Doucek & S. Kříž* **#1623** "Optimization of Characterization Routines for Carbon Blacks Used in Energy Related Applications" *F. Ozcan, A. Said & D. Segets* **#1587 "**Experimental Study on Hydrogen Enriched Natural Gas Combustion in Industrial Burner" *S. Bryne, Q. Ullah & D. Patel* **#1625** "Thermodynamic Assessment of a New Small Modular Reactor for Hydrogen and Electricity" *I. Khan & F. Khalid* **#327** "Optimization of Low-Grade Tetragonal Zirconia by Praseodymium Oxide Additions" *J.C.C. Abrantes, E. Gomes, D. Ramasamy & A.A.L. Ferreira* **#1460** "Machine Learning as a Tool for Interpreting Variables in Hydrogen Sorption Data" *M.I.M. Kusdhany & S.M. Lyth*
10:15 **10:45**	**Coffee Break**				

Wednesday – June 29, 2022

PARALLEL SESSIONS – 7

	ROOM 1 – Online Link 1	ROOM 2 – Online Link 2	ROOM 3 – Online Link 3	ROOM 4 – Online Link 4	
10:45 12:15	**Workshop on Development of Solar & Hydrogen-based Integrated Energy Systems** **Miro Zeman** *Delft University of Technology, Netherlands* Energy System Based on Renewables for Built Environment: Role of Hydrogen **Doria Marciuš** *University of Zagreb, Croatia* H_2 Lab: Croatia **Onder Kizilkan** *Isparta University of Applied Sciences, Turkey* Dynamic Modeling and Simulation of Solar and Hydrogen Energy-Based Electricity and Hot Water Generation System for Off-Grid Applications **Alfredo Ortiz & Sainz de Aja** *Universidad de Cantabria, Spain* R&D on Hydrogen Technologies at the Advance Separation Processes Research Group **Leila Abdolmaleki** *Ryerson University, Canada* Green Hydrogen Production Integrated with Photovoltaic Panels	**Track 1. Hydrogen Production: Thermochemical and Photonic Methods** **Session Chair: TBA** **#284** "Experimental Investigation of a Fe_2O_3 Carbothermic Reduction Cycle for Hydrogen Production" *L.M.V. Cardona, B. Narváez-Romo, M. Mourão & J.R. Simões-Moreira* **#1548** "Application of Different Catalysts in Biomass Gasification in Updraft/Downdraft Fixed Bed Reactors" *O. Tezer, N. Karabag, A. Ongen & A. Ayol* **#311** "Utilization of Al_2O_3 and MgO as Structural Promoters of Fe into 2 and 3 Steps Chemical Looping Hydrogen Process: Pure and Green H_2 Production" *M. Damizia, B. Caprariis, M.P. Bracciale, F. Anania, L. D'Alvia, Z.D. Prete & P. Filippis* **#400** "Hydrogen and Methane Production from Anaerobically Digested Water Plant by Hydrothermal Gasification" *F.G. Bodur, T.G. Madenoglu, G. Ozdemir, N. Kabay & L. Ballice* **#420** "A Novel Solar Energy Driven Thermochemical Hydrogen Production System Integrated with Electric Vehicle Charging Station" *F. Razi & I. Dincer* **#319 "**Glycerol Steam Reforming for the Production of Hydrogen over Remarkably Active and Stable Perovskite Supported Ni Catalysts**"** *N.D. Charisiou, I. Luisetto, A.I. Tsiotsias, A. Beka, K. Polychronopoulou & M.A. Goula*	**Track 2. Hydrogen Production: Electrolysis** **Session Chair: TBA** **#1576** "A New Experimental Investigation on Hydrogen Production of NaCl, KCl and $CaCl_2$ Solutions Through Chloralkali Reactor" *M. Erden & M. Karakilcik* **#1578** "Flow Channel Effect on Performance of PEM Water Electrolysis" *S.K. Kim & S.Y. Jung* **#1598** "On the Potential of Coupling Solar Chimney and Wind Energy to Produce Hydrogen as Green-to-Green System" *M. Ramadan, A. Haddad, M. Alkhedher* **#1509** "Anion Exchange Membrane (AEM) Water Electrolysers: Current Status and Future Perspective" *C. Karakaya, I. Vincent, I. Velasco & E. Fernandez* **#344** "Green Hydrogen for Ammonia Production- A Case for The Netherlands" *G. Pagani, C. Acar & Y. Hajimolana* **#1594** "Effect of Molybdenum Oxide Addition to Metal-Supported Zeolite Catalyst for Reverse Water Gas Shift Reaction" *M.R. Harada, A. Okemoto, N. Hiyoshi, Y. Hasegawa & K. Sato*	**Track 13. Hydrogen Strategies and Policies** **Session Chair: TBA** **#304** "From Fossil Fuel Energy to Hydrogen Energy: Transformation of Fossil Fuel Energy Economies into Hydrogen Economies Through Social Entrepreneurship" *J.E.G. Baquero & D. Bellon Monsalve* **#392** "Hydrogen Potential as Vector for a Biomass-Based Decarbonisation of Transport in Brazil" *S.T. Coelho, A. Stuchi, D. Perecin, K.L. Mascarenhas & J. Meneghini* **#1478** "Argentine Activities in the Field of Hydrogen" *J.C. Bolcich* **#1535** "Could Green Hydrogen and Its Derivative Improve Energy Systems in North Africa, Case of Morocco, Egypt and Tunisia" *A. Lahnaoui, W. Kuckshinrichs* **#1599** "Green Ammonia to Advance the Energy Transition in China: An Analysis from a Complex System Engineering Perspective" *H. Zhao, L. M. Kamp, Z. Lukszo* **#329** "Ways to Improve the Competitiveness of China's Hydrogen Energy Industry" *X. Meng A. Gu, M. Chen & X. Wu*	**EXHIBITION**
12:15 14:00	**LUNCH**				

Wednesday – June 29, 2022

PARALLEL SESSIONS – 7

	ROOM 5 – Online Link 5	ROOM 6 – Online Link 6	ROOM 7 – Online Link 7	ROOM 8 – Online Link 8	Digital Boards – Onsite
	Track 14. Hydrogen Industry, Commercialization and Marketing, Applications **Session Chair: TBA**	**Track 6. Hydrogen Storage** **Session Chair: TBA**	**Track 7. Fuel Cells: PEMFC** **Session Chair: TBA**	**Track 15. Hydrogen Economy, Logistics, Infrastructure** **Session Chair: TBA**	**POSTER PRESENTATIONS – 7** **Session Chair: TBA**
10:45 **12:15**	**#1513** "A CFD Study on Hydrogen Addition to The Methane-Air Mixtures" *E. Colak & I. Karagul* **#1483** "Extension of Lean Limit Using Hydrogen Addition for Gasoline Direct Injection Engine and Emission Reduction" *J. Stanley, L.J. Martin & E.G. Varuvel* **#1490** "Hydrogen as Future Energy carrier for Mobility" *T. von Unwerth* **#168** "Gaps and Opportunities Across Hydrogen End-Uses: A Bottom-Up Analysis of the Existing Business Activities in Europe" *D. Tonelli, S. Braccio, D. Proverbio, P. Pino & P.D. Porta* **#1496** "Progress and Perspectives in Using Hydrogen-Enriched Biogas from Waste to Engine in Agriculture" *S.M. Ayad, C. Belchior, I. Tougri, R. Amoah & I. Bryant* **#1468** "Analysis of Hydrogen Combustion as Fuel to Preheat Air in Power Generation Plants in Micromix Injection Technology" *G. Jimenez, E. Cantillo, R. Howard, L. Corredor, A. Gonzalez-Quiroga & V. J. Pugliese*	**#1533** "Development of the NEC/12H-NEC LOHC System at Canadian Nuclear Laboratories" *L. Stolberg, B. Ibeh, H. Li, D. Ryland & S. Suppiah* **#1614** "Investigation of Infrastructure Study and Operation Planning of Underground Hydrogen Storage Area" *H. Karakılçık* **#390** "Performance of Benzyltoluene as Pure Hydrocarbon Liquid Organic Hydrogen Carrier (LOHC) in Storage Cycles" *T. Ruede, P. Preuster, M. Wolf & P. Wasserscheid* **#427** "Catalytic Properties of B-Doped G-C_3N_4 on Methanolysis of $NaBH_4$ to Produce H_2" *S. Demirci & N. Şahiner* **#1565** "Numerical Optimization of Multistage Magnetic Refrigeration System in the Temperature Range of Liquid Hydrogen" *W. Zheng, J. Shen, Z. Li, K. Li, W. Dai, P. Hai & H. Huang* **#1619** "Investigation of Hydrogen Kinetics of Copper Pellets with ENG Additives" *G. Atalmis, N. Yelegen, M. Demiralp & Y. Kaplan*	**#1455** "Investigation of Waste Heat Recovery from Proton Exchange Membrane Fuel Cell Using Organic Rankine Cycle with Zeotropic" *T.A.H. Ratlamwala, M. F. Siddiqui, S. M. Ali, M. M. Vohra, A. Sami & K. Kamal* **#276** "Highly Efficient Low Metal Loading Nanostructured Electrocatalysts" *A. Valenzuela-Muñiz, H. Valenzuela-Ramos, M. Zi-Chi, M. Miki-Yoshida & Y.I Verde Gomez* **#1567** "Modeling of H_2/Br_2 Redox Flow Battery in Fuel Cell Mode" *A.C. Turkmen, K. C. Ata & C. Çelik* **#277** "Multi-objective Optimization of PEM Fuel Cell Components Based on Response Surface Methodology" *M. Ghasemi, J. Choi, J. Lee, K. Lim & H. Ju* **#91** "Giantleap Project: Development of a Fuel Cell Range Extender for a Battery Electric Bus" *F. Barbir, F. Zenith & N. Steiner* **#440** "Controlling and Comparison of PEM Fuel Cell Based DC-DC Cascade Boost Converter with Classic Control Methods" *S. Kart, İ. Kocaarslan, N. Genç & H. Üzmuş*	**#260** "Influence of the Turbulence Model in the CFD Simulation of Hydrogen Tank Filling by an Impinging Oblique Jet" *J. Martin, Q. Nouvelot, V. Ren, G. Lodier, P. Carrere, A. Charolais, F. Ammouri, E. Vyazmina, A. Grab & A. Ruiz* **#351** "Transactive Mobility with Hybrid Electric and Hydrogen Charging Infrastructures" *H.A. Gabbar* **#153** "Numerical Model and Experimental Validation of Ultra-Lean Air-Hydrogen Combustion in Catalytic Monoliths" *F. Battistella, A. Donazzi, A. Ravidà, G. Groppi & G. Valenti* **#397** "Economic and Environmental Evaluation of Fueling Options for Hydrogen Fuel Cell Heavy-Duty Vehicles" *A. Elgowainy & K. Reddi* **#409** "Analysis of the Demand of Hydroged as Fuel for Transport in the UAE" *M. Awad, A. Bouabid, A. Sleptchenko, A. Almansoori & A. Alhajaj* **#439** "Grid based Risk Assessment of a Hydrogen Supply Chain" *E. Gecici, M. Güray Gluer & A. Erdoğan*	**#322** "Development of Monitoring Tool for High Voltage Proton Exchange Membrane Water Electrolyze" *C.Y. Lee, C.H. Chen, S.Y. Chen & Z.Y. Huang* **#357** "Optimization and Fabrication of Composite Graphite Plates for PEMFC Applications" *M. Momenifar, M. Ghadimi, M. M. Barzegari & K. Mohammadi* **#360** "Hydrogen Crossover Diagnosis in a PEMFC Using Galvanostatic Method", *M. Gholami, M. Sedighi, M. R. Firozjaei & V. K. Firozjaei* **#395** "Studying Proton Conductivity of Sulfonated/Fluorinated Proton Exchange Membranes by Artificial Neural Networking" *M. Mohammadi, N. Mohammadi & S. Mehdipour-Ataei* **#165** "Hydrogen Energy from Waste to Value" *M.R. Kabakcioglu, K. Cicekdag, S. Uruden, S. Kâhya & B.A. Uzuner* **#244** "Pseudo-Dynamic Modeling and Optimization of Heavy Paraffin Dehydrogenation Process for Selective Olefin and Hydrogen Production in Conventional Reactors" *M. Dehdashti, M. Farsi & M. Binazadeh* **#380** "A Brief Overview of Renewable Hydrogen Production Prospects and Challenges" *R. Maihan & S.Y.Uysal* **#106** "Photocatalytic Hydrogen Production by TiO_2/CdTe Quantum Dots" *M.J. Rivero, J. Corredor, C.R. Tezanos & I. Ortiz*
12:15 **14:00**	**LUNCH**				

Wednesday – June 29, 2022

PARALLEL SESSIONS – 8

	ROOM 1 – Online Link 1	ROOM 2 – Online Link 2	ROOM 3 – Online Link 3	ROOM 4 – Online Link 4	
	COUNTRY OVERVIEW PRESENTATIONS **Session Chair: TBA**	**Track 1. Hydrogen Production: Thermochemical and Photonic Methods** **Session Chair: TBA**	**Track 2. Hydrogen Production: Electrolysis** **Session Chair: TBA**	**Track 4. Hydrogen Production: Nuclear** **Session Chair: TBA**	
14:00 15:30	**Inci Eroğlu** *Turkish Hydrogen Technologies Association* Turkey's Role in the Hydrogen Age **Kilian Crone** *German Energy Agency* The German National Hydrogen Strategy: The Import Gap and how to close it **Rolf Strittmatter** *Hamburg Invest* Green Hydrogen Hub Hamburg – Establishing a Hydrogen Economy in Northern Germany **Alok Sharma** *Centre for High Technology, India* Hydrogen Interventions in Oil and Gas Sector in India **Ko Sakata** *The Institute of Applied Energy (IAE) & Hydrogen Energy Systems Society of Japan (HESS)* Significance of Introduction of Large Amount of Hydrogen to Japan **Robin J. White** *Luxembourg Institute of Science & Technology* Materials RDI for the Hydrogen Economy in Luxembourg	**#1586** "$Cd_xZn_{1-x}S$ with Bulk-Twinned Homojunctions and Rich Sulfur Vacancies for Efficient Photocatalytic Hydrogen Production" *M.A. Hamid, I. Boz & Y. Zengin* **#1600** "Investigation of Hydrogen Production Potential from Medical Waste in an Updraft Plasma Gasifier" *A.A. Erdogan & M.Z. Yilmazoglu* **#1601** "Solar Light Driven Photocatalytic Hydrogen Evolution in Situ Deposited Pt on Perovskite Type Oxides" *A. Keles, T. Kuru, E. Aslan & I.H. Patir* **#1527** "Kinetic Characterization of Pt/Al_2O_3 Catalyst for Hydrogen Production via Methanol Aqueous-Phase Reforming" *P. Lakhtaria, P. Riberirinha, J. Souza & A. Mendes* **#1515 "**Promotion of Copper-Zinc Catalyst with Sm and Gd for Steam Reforming of Methanol**"** *K.S. Lin, Y.S. Lin, W.T. Hong, Y. Ko, A. Hussain & Y.C. Hsieh* **#81** "Thermodynamic Analysis of Biogas-to-Syngas Conversion with Dry Oxidative Reforming and CH_4 Recycling Using ASPEN HYSYS" *H. Ibrahim & P. Rosha*	**#1469** "Enhancing the Electrocatalytic Hydrogen Evolution Activity of Bare Copper Electrodes Through Ultrafast Femtosecond Laser Nanostructuring" *S. Ahmad, M. Egilmez, M.F. Orhan & A.S. Alnaser* **#1481** "Thin Film Coating of Platinum on 3D Printed Polymeric Anode Electrodes for PEMWE" *N. Demir, B. Hüner & M.F. Kaya* **#1573 "**Development of Pt-Cr Coated SS316L Electrodes for PEM Electrolyzers by Selective Laser Melting Method" *M.F. Kaya, M. Kıstı, E. Ozdogan & S. Uysal* **#1517** "Iridium-Ruthenium Catalyst on Sputter-Etched Membrane for Proton Exchange Membrane Water Electrolyzers" *T. Hrbek, P. Kúš, V. Matolín & I. Matolínová* **#144** "Hydrogen Generation in Membrane-Free Microfluid Electrolysis Cell" *B.S. De, N. Khare, A. Elias & S. Basu* **#1543 "**Understanding Research Evolution in Hydrogen Production from Water Electrolysis: A Bibliographic Study" *B. Kim, I. Ulah, M. N. Nasser, J. Kim & J-B. Pyo*	**Keynote Speaker** **Shannon Bragg-Sitton** *Idaho National Laboratory, USA* **The Essential Role of Nuclear-generated Clean Hydrogen in Achieving a Net-Zero Economy** **#1628** "Nuclear-Solar PV Powered Electrolytic Hydrogen Production at High Temperature" *R. Boudries & A. Khellaf* **#1484** "A Hybridized Solar-Nuclear Energy System for Generating Multiple Useful Outputs with Hydrogen" *M. Temiz & I. Dincer* **#131** "Study on The Catalytic Performance of Sulfuric Acid Decomposition in Iodine-Sulfur Cycle Hydrogen Production" *Q. Gao, P. Zhang, W. Peng & G. Zhao* **#1593** "Nuclear Hydrogen Projects to Support Clean Energy Transition" *A. Constantin*	**EXHIBITION**
15:30 16:00	**Coffee Break**				

Wednesday – June 29, 2022

PARALLEL SESSIONS – 8

	ROOM 5 – Online Link 5	ROOM 6 – Online Link 6	ROOM 7 – Online Link 7	ROOM 8 – Online Link 8	Digital Boards – Onsite
	Track 9. Integrated Hydrogen Energy Systems **Session Chair: TBA**	**Track 6. Hydrogen Storage** **Session Chair: TBA**	**Track 7. Fuel Cells: PEMFC** **Session Chair: TBA**	**Track 15. Hydrogen Economy, Logistics, Infrastructure** **Session Chair: TBA**	**POSTER PRESENTATIONS – 8** **Session Chair: TBA**
14:00 **15:30**	**#379** "Exergy Analysis of Reversible SOFC Coupled with Organic Rankine Cycle and Hydrogen Storage for Renewable Energy Storage" *S.S. Bhogilla & U.R. Singh* **#389** "Scientific and Technological Synergies Connecting Electrolysers, Fuel Cells and Electrochemical Compressors for Hydrogen Use" *R. Schlatmann & S. Calnan* **#348** "System Integration and Validation of Hydrogen Fuel Cell Niche Vehicles and Related Refuelling Infrastructure at HYSA Systems/ South Africa" *V. Linkov, M. Lototskyy & S. Pasupathi* **#412** "Hydrogen and Oxygen (HHO) Gas Influence on Engine Characteristics While Fueled on Petrol Ant Bioethanol Lean Mixtures" *G. Mejeras, A. Rimkus & J. Matijosius* **#411** "Effect of the Addition of Hydrogen-Containing Gas on Indicated and Effective Parameters of A Gasoline Engine" *J. Matijosius, Y. Gutarevych, Y. Shuba, A. Rimkus & O. Syrota* **#398** "Preliminary Assessment of the Green Hydrogen Production Potential in Kazakhstan" *S. Danenova, Y. Abuov, A. Tleubergenova & W. Lee*	**#1602** "Comparative Study on Active and Passive Thermal Management Options of a Metal Hydride Hydrogen Storage Tank" *T. Dişli, S.A. Çetinkaya, M.A. Ezan & C.O. Çolpan* **#1603** "Design Parameters Optimization of Phase Change Material Integrated Metal Hydride Hydrogen Storage Tank" *S.A. Çetinkaya, T. Dişli, M.A. Ezan & C.O. Çolpan* **#1547** "Introduction of SPERA Hydrogen System for Massive Hydrogen Storage and Transportation" *Y. Okada, K. Imagawa, H. Kawai, T. Mikuriya, F. Yagi & N. Kaji* **#1557** "A Simple Dynamic Model for Predicting the Absorption and Desorption Behaviour of Metal Hydride Systems" *A. Parida, S. P. Jenne & M. Palanisamy* **#1539** "Evaluation of Basic Physical Properties of Ammonia Borane Stored in Liquid Ammonia" *F. Guo, Y. Wang, T. Ichikawa, H. Miyaoka, Y. Shimizu, S. Takamine, T. Nakagawa & T. Ichikawa* **#1446** "Effective Hydrolysis of Alkaline Sodium Borohydride: CoB-Triton Catalyst" *C. Kaya, J. H. Türkcan, H. Elçiçek, O. K. Özdemir & G. Kökkülünk*	**#1585** "A Scalable Analytical Model for Rapid Multiphysical Analysis and Structural Optimization of PEM Fuel Cells" *M. Kohrn, Y. Liu, M. Wick & S. Pischinger* **#103** "Synthesis and Characterization of MWCNT-Supported PBI Membranes for HT-PEM Fuel Cells" *M.T. Goruryilmaz, S. Ozenler & B. Zeytuncu* **#353** "Optimum Serpentine Flow Field for PEM Fuel Cells According to Critical Parameters" *M. Ghasemian, M.R. Esboee, S. M. Rahgoshay & K. Dadashi* **#1617** "Modeling Oxygen Transport in Carbon Support Microstructure of Proton Exchange Membrane Fuel Cell Electrodes Using Pore Networks" *A.C. Ince, M. Serincan, H. Hasnain, H. Edward, J. Spendelow, U. Pasaogullari & W. Kort-Kamp* **#1558** "The Impact of Ambient Temperature on High-Temperature PEM Fuel Cell" *P. J. Alphonse, M. Taş & G. Elden* **#1542** "Multi-Criteria Structure Selection for Non-Precious Metal Electrocatalyst for Proton Exchange Membrane Fuel Cells" *E. Sağır, S. Alipour, A. Sadeghi & S. T. K. Alghorayshi*	**#1525** "Techno-Economic Analysis of 350 bar LOHC-Supplied Hydrogen Refueling Stations for Heavy Duty Vehicle Fleets" *S. Aschbrenner, T. Eissler, M. Schneider & C. Voglstätter* **#1470** "Assessment of Hydrogen Delivery Options" *E. Weidner, F. Dolci, R. O. Cebolla & A. Arrigoni* **#1632** "What is the Key Role of Hydrogen Energy in Metaverse" *F.C. Iskenderoğlu, H.T. Arat & M.K. Baltacioğlu* **#1485** "Techno-Economic and Process Simulation of Small-Scale Hydrogen Production from NH_3 Decomposition" *M. El-Shafie* **#1458** "Analysis of a Hydrogen Supply Chain with Random Demand: A Case Study" *B.T. Özbek & M.G. Güler* **#1562** "Evaluation of Potential Hydrogen Production Methods in Turkey by using a Hybrid Method Based on Pythagorean Fuzzy AHP and Interval Type-2 Fuzzy TOPSIS" *A. Yildiz, Y. Demir & G. Işik*	**#419** "Theoretical Approach of Light Metal Functionalized Siligene for Hydrogen Storage" *B.J. Cid, Á.R. Montoya, M.C. Crisóstomo, L.A. Pérez & Á. Miranda* **#127** "AISI 442 and 446 Ferritic Stainless Steels as a Support for Bipolar Plates in Proton Exchange Membrane Water Electrolyzers" *C. Craciunescu, S. Laedre, N. Vaszilcsin, T. Khoze, M. Dan, A. Kellenberger, D. Delia & A. Ercuta* **#97** "TiO_2 Substrate for Thylakoid Membrane with New Pore Making Agent" *R. A. Voloshin, A. Bozieva, M. Rodionova, S. Zharmukhamedov & S. Allakhverdiev* **#129** "Evaluation of Biohydrogen Production via Dark Fermentation of Palm Oil Mill Effluent at Mesophilic and Thermophilic Temperature in Batch System" *A. Akhbari, F. M. Jais, O. C. Chuen, S. Ibrahim, A. Zainal, L. Yahya & N. Omar* **#208** "Enhanced Hydrogen-Rich Syngas Produced by Developed Plasma Reformer System" *A. Alharbi, N. Alqahtani, A. Alkhedhair, A. Alabduly, A. Almaleki, M. Almadih, M. Albishi & A. Almayeef* **#220** "Production of "Green" Hydrogen in the Process of Low-Temperature Catalytic H_2S Decomposition" *A.N. Startsev* **#223** "Structure Regulation of Ultrathin Graphitic Carbon Nitride for Significantly Enhanced Photocatalytic H_2 Evolution Under Visible-Light Irradiation" *J. Shi*
15:30 **16:00**	**Coffee Break**				

Wednesday – June 29, 2022

PARALLEL SESSIONS – 9

	ROOM 1 – Online Link 1	ROOM 2 – Online Link 2	ROOM 3 – Online Link 3	ROOM 4 – Online Link 4	
	COUNTRY OVERVIEW PRESENTATIONS **Session Chair: TBA**	**Track 1. Hydrogen Production: Thermochemical and Photonic Methods** **Session Chair: TBA**	**Track 2. Hydrogen Production: Electrolysis** **Session Chair: TBA**	**Track 17. Social Dimensions** **Session Chair: TBA**	
16:00 **18:00**	**Frano Barbir** *Croatian Hydrogen Association* Hydrogen Activities in Croatia **Roel van de Pas** *NWBA – Dutch Hydrogen and Fuel Cell Association* H2olland – An Introduction to the Dutch Hydrogen Economy **Syed Zafar Ilyas** *Pakistan Hydrogen Society* Hydrogen Energy Progress in Pakistan **Javier Brey** *Spanish Hydrogen Association (AeH2)* Status of Hydrogen Economy Deployment in Spain **Ekain Fernandez** *TECNALIA, Spain* H24NEWAGE – Development of Advanced Technologies for Hydrogen Production, Storage and Distribution, and Technology Transfer to Industry for the New Era of Hydrogen in Spain **Guadalupe Ramos Sánchez** *Mexican Hydrogen Society* 23 Years of Hydrogen Research in Mexico **Zong Qiang Mao** *Tsinghua University, China* Current Situation of Hydrogen energy in China **Eniya Listiani Dewi** *Indonesia Fuel Cell Hydrogen Energy Association (IFHE)* **TBA**	**#199** "Photoelectrochemical Water Splitting: Short Review on Current Density and Stability of Photoelectrodes" *A. Kovac, D. Brezak & D. Marcius* **#195** "Hydrogen Production by Oxidation of Aluminum Nanopowder in Water under the Action of Laser Pulses" *Y. Kraft, B. Aduev, D. Nurmukhametov, G. Belokurov & Z. Ismagilov* **#430** "Synthesis of SnS_2 Photocatalyst for Photocatalytic Hydrogen Production" *C. Sarioglu & A.C. Ok* **#291** "Economically Viable Low Temperature Hydrogen Production Using Aluminum-Water Splitting Methods" *J. Kandasamy, R.N. Mutlu, E. Eroglu, M. Karaca, H. Ustunel & I. Gokalp* **#287** "On-Solar Simulator Data for Kinetic Studies of CdSZnS-Pt Waters Splitting", *K. Kakosimos & T. Mohammed* **#232 "**The Effect of Heating Profile on Hydrogen Production in A Membrane-Integrated Steam-Methane Reformer (MISMR)" *R.B. Mansour, S. Paglieri, A. Harale, M. Habib, E. Mokheimer & M. Haque* **#248 "**Hydrogen Production by Steam-Carbon Dioxide Conversion of Methane: Creating an Effective Catalyst Using the Ex-Solution Approach" *E.V. Matus, I. Ismagilov, O. Sukhova, M. Kerzhentsev, V. Ushakov, S. Yashnik, E. Gerasimov, O. Stonkus, A. Nikitin & Z. Ismagilov* **#256** "Integration of Catalytic Hydrocarbon Decomposition and Subsequent Use of Carbon Nanomaterials Produced for Pure Hydrogen Formation" *O. Podyacheva, S. Khairulin & Z.Ismagilov*	**#72** "Investigation of Electricity, Hydrogen and Clean Water Production with Renewable Energy System Integrated onto a Ship: Mobile Energy Production on a Ship" *R. Campana & M. Erden* **#74** "Parabolic Through Solar Collector Integrated with Solar Pond for Electricity and Hydrogen Production Based on Solar Energy" *A. Atız, M. Karakılçık & S. Damarseçkin* **#340** "TiO_2-CeO_2 Admixed Photoelectrode for Optimization of Hydrogen Production in Regards to Photoelectro-chemical Solar Cell" *M. Tripathi, P. Chawla & K. Pooja* **#159** "Development of Fe Over Ni/Si-Al Nanocatalysts for The Hydrogen and Liquid Fuel Generation from Pyrolysis-Catalytic Steam Reforming of Polyethylene Terephthalate Plastic Waste Dissolved in Phenol" *M.W. Ali, W. Nabgan, M.W. Ali, A.A. Jalil & T.A.T. Abdullah* **#1538** "Exergetic Analysis of a Solar Energy-Based Hydrogen Production System" *H. Akçi, H. Gunerhan & A. Hepbasli* **#180** "Preparation and Analysis of Electrocatalysts for PEM Water Electrolysers Based on Laser-Generated Iridiumoxide Nanoparticles for the Oxygen Evolution Reaction" *N. Kazamer, S. Reichenberger, M. Spree, U. Rost, M. Tack, T. Bopardikar, F. Wirkert, H. Salih, L. Böhm, M. Cieluch, J. Roth, T. Zoz, T. Hülser, S. Barcikowski & M. Brodmann* **#128** "Chemically Stabilised Short Side Chain Aquivion® Membranes for Operation in Water Electrolysis" *S. Siracusano, A.S. Aricò, C. Oldani & S. Tonella* **#393** "Efficiency of The Production Process and Management of Green Hydrogen Through Simulation and Balance of Plants (BOF)" *M.T. Cadenas, C. Castañeda, J.J Ramos-Valencia, M.T Cadenas- González, G. L. Avelino*	**#239** "Assessing Public Acceptance on Hydrogen Economy in Japan: A Comparison of Past Survey in 2015" *J. Yap & B. McLellan* **#71** "Teachy - A Flagship Project for Teaching Fuel Cell and Hydrogen Technology" *I. Iordache, R. Steinberger-Wilckens, V. Dumbrava, N. Al-Mufachi, A. P. Vellayani, M. Santarelli, L.N. Cleeman, Y. Brodnikovskyi, K. Bouzek, V. Molkov, O. Jedicke, J.V. Herle, F. Druart & J.L. Delplancke* **#1473** "Green Hydrogen, An Economic Paradigm Shift – New Perspectives for the Global South?" *K. Thoms, A. Stamm, E. Oyan & R. Strohmaier* **#1474** "Green Hydrogen in Costa Rica – Perspectives of an Economic Paradigm Shift for a Small Developing Country" *K. Thoms, A. Stamm & F.L. Moreno* **#1477** "Turkey's Potential to Produce Geothermal-Based Green Hydrogen: Insights from Inside" *E. Oyan* **#1631** "Effects of Social Media Platforms About Attendance to WHEC 2022 Conference" *F.C. İskenderoğlu, M.K. Baltacıoğlu & H.T. Arat* **#48** "The Public Acceptance Challenges of Hydrogen Fuel Cell Cars: A Case Study in Alaçati- Izmir (Turkey)" *F.S. Tut Haklidir; A. Karakoyun, M. A. Berk & A. F. Erol* **#193** "Social Life Cycle Assessment of a Solid Oxide Electrolysis Cell Stack" *F. Campos-Carriedo, G. Puig-Samper, E. Bargiacchi, D. Iribarren & J. Dufour*	**EXHIBITION**

Wednesday – June 29, 2022

PARALLEL SESSIONS – 9

	ROOM 5 – Online Link 5	ROOM 6 – Online Link 6	ROOM 7 – Online Link 7	ROOM 8 – Online Link 8	Digital Boards – Onsite
	Track 12. Codes, Standards and Regulations **Session Chair: TBA**	**Track 6. Hydrogen Storage** **Session Chair: TBA**	**Track 7. Fuel Cells: PEMFC** **Session Chair: TBA**	**Track 9. Integrated Hydrogen Energy Systems** **Session Chair: TBA**	**POSTER PRESENTATIONS – 9** **Session Chair: TBA**
16:00 **18:00**	**Invited Speaker** **Karen Quackenbush** *Fuel Cell and Hydrogen Energy Association (FCHEA), USA* **Codes and Standards for Hydrogen Energy Systems** **#25** "The German Hydrogen RCS Roadmap" *R. Wurster & E. Hof* **#213** "European Regulatory Framework for Hydrogen Underground Storage" *S.M. Casasnovas, J. Simón, A. Réveillère & F. Ostapoff* **#258** "Testing of Blended Green Hydrogen in Gas Pipelines: Considering the End-Users Limits" *A. Ekhtiari, E. Syron & L. Nolan* **#338** "Hydrogen Fuel Quality for Transport: NPL Accreditation ISO 17025, Reference Materials, Proficiency Testing and New Sampling System" *T. Bacquart, A. Morris, N. Moore, M. Hookham, Y. Hristova, R. Wilmot, F. Omoniyi & A. Murugan* **#368** "Metrology for Hydrogen Vehicle 2: Achievements and Progresses" *T. Bacquart, M. De Huu, K. Arrhenius, T. Aarhaug, J. Viitakangas & A. Murugan* **#1563** "Safe Energy Relations: Unfolding the Precautionary Principle with the Advent of Hydrogen Technologies" *A.Ş. Kart & İ. Gökalp*	**#269** "Contribution to Modeling Hydrogen Permeation and Barrier Layer Optimization in Blow Molded Plastic Liners for an On-Board Compressed Hydrogen Tank" *Z. Benrabah, A. Bardetti, F. Ilinca & S. Bournival* **#364** "The Effect of Different Organic Acids on the Hydrolysis of Magnesium Hydride" *M. W. Davids, T.K. Sekgobela & M. Lototskyy* **#1491** "Effect of Iron Particle Shape and Alloy Composition on Hydrogen Production Efficiency in the Water-Iron Reaction" *H. Yagi & H. Eba* **#1528** "Synthesis of Calcium Borohydride with Boron-Floride Exchange at High Pressures" *G. Gizer, F. Karimi, C. Pistidda & J. A. Puszkiel* **#1506** "Modeling of a Hydrogen Storage System Based on Metal Hydride and Phase Change Material" *W.H. Wiersma & C. Acar* **#1465** "CFD-Assisted Hydrodynamic Characterization of a Centrifugal Liquid Organic Hydrogen Carrier Dehydrogenation Unit" *L.V. Hoecke & P. Perreault* **#126** "Hydrogen Absorption/Desorption of the $(TiVNb)_{85}Cr_{15}$ Multicomponent Alloy" *B. H. Silva, C. Zlotea, W. J. Botta, Y. Champion & G. Zepon* **#1532** "Structural Evolution of a Magnesium-Carbon Composite Material Over 1000 Hydrogen Storage Cycles" *R. Carson, B. Ellis & S. Persaud*	**#1590** "Study of Catalyst Loading and GDL Porosity Gradient Variation Effect to PEMFCs Performance Through Recurrent Neural Network (RNN) Data-Driven Assisted Modelling" *H. Lei* **#1591** "Sulfonated Silica/Nafion® Based Composite Electrospun Membranes for PEM Fuel Cells" *N.R. Mojarrad, A.C. Kırlıoğlu, S.A. Gursel & B.Y. Kaplan* **#305** "Design, Integration and Validation of a Testing Setup for PEMFC Stack Characterization at Heavy Duty and Maritime Load Profiles" *P. Bujlo & Ø. Ulleberg* **#41** "Refinery Hydrogen as Fuel for Low-Temperature Polymer Electrolyte Membrane Fuel Cells" *S. Meenakshi, S. Chugh, A. Sharma, G.S. Kapur, S.S.V. Ramakumar* **#1582** "Non-Traditional Machining Methods for Metallic Bipolar Plate Materials" *O. Çakır* **#1579** "GDL Degradation Effect on Flows Inside Flow Channel on Polymer Electrolyte Membrane Fuel Cell" *J.W. Moon, S.K. Kim & S.Y. Jung* **#1570** "Transient Characteristics of In-Plane Water Transport in the Gas Diffusion Layer of PEM Fuel Cells" *S. Y. Jung & M. Mortazavi* **#1571** "Aqueous Ammonia Droplet Evaporation from Gas-Diffusion Layer Surfaces" *A. Santamaria & M. Mortazavi*	**#1472** "Simulation of PEMFC Integrated Trilateral Cycle (TLC) in MATLAB/Simulink Environment" *K. Kamal, A. Sheikh, M.N. Saleem, A. Naseer, T.A.H. Ratlamwala & A.A. Zaidi* **#270** "Green Military Site Supporting Public Hydrogen Mobility" *M. Mori, U.Z. Baskovic, B. Drobnic, R. Sipec & T. Katrasnik* **#18** "Reactor Evaluation for Alternative Fuel Synthesis of Methanol and Dimethyl Ether (DME) from CO_2 and Renewable Hydrogen" *S. Weiske, N. Beltermann, R. Becka, R.C. Samsun, R. Peters & D. Stolten* **#302** "Pilot-Scale Hybrid System for CO_2H_2 Mixture Production- First Experiences in the "Tennessee" Project" *L. Bartela, J. Zdeb, J. Milewski, A. Martsinchyk, W. Smolka & L. Rybak* **#318** "Thermodynamic Considerations of the CO_x Hydrogenation Reaction to Light Olefins Using Carbon-Neutral Feedstock Mixtures" *E. Mandela, G. Varvoutis, A. Lampropoulos, E. Papista, C. Athanasiou, D. Ipsakis, M. Konsolakis & G. Marnellos* **#330** "Process Simulation and Assessment of An Integrated Power System Combining Olive Kernel Pyrolysis, Gasification and Solid Oxide Fuel Cell" *A. Lampropoulos, G. Varvoutis, E. Mandela, S. Spyridakos, D. Ipsakis, C. Athanasiou, M. Konsolakis & G.E. Marnellos* **#428** "Experimental Study on Spray Characteristics of Internal Mixed Hydrogen-Assisted Fuel Injection System" *Z. Liu, T. Qui & Y. Lei* **#435** "Analysis of An Integrated Gas Turbine-Locomotive Engine Using Sustainable Fuel Blends with Hydrogen" *S. Seyam, I. Dincer & M.A. Chaab*	**#64** "Optimization of Energy Management Strategy for Fuel Cell-Range Extended Electric Vehicle" *Y. Sun & C. Xia* **#93** "Assessment of Natural Hydrogen and Mantle Helium Resources in the Afar Triangle, Djibouti" *K.M. Hassan, E. Deville & A. Prinzhofer* **#210** "Evaluation of Hydrogen Production Processes for Use in Automotive Sector" *F.E.B. Feitosa & A.L. Costa* **#63** "Green Hydrogen Production in Hydropower Station" *E.M. Barhoumi, I.B. Belgacem, P.C. Okonkwo & M. Zghaibeh* **#66** "Future Economic perspective of Power-to-gas system based on Molten Carbonate Electrolyzer" *D. Monzer & C. Bouallou* **#215** "Electrolyte In-Situ Replenishment to Extend MCFC Lifetime" *S.P. Yoon, K.I. Kim, J.K. Bae, A. Emilio, S.W. Choi, H.W. Kim, H.S. Park, S.C. Jang & Y.S. Cho* **#313** "Economic Optimization of a Hybrid Fuel Cell-Gas Turbine System for Power and Heating Production" *L. Khani, G.G. Akkurt & M. Mohammadpourfard* **#141** "Novel Emergency Gas-to-Power MH-Storage and Fuel Cell System: Modeling and Experimental Validation" *D.M. Dreistadt, J. Puszkiel, J.M. Bellosta von Colbe, G. Capurso, G. Steinebach, S. Meilinger, T.T. Le, M.C. Guarneros, T. Klassen & J. Jepsen* **#252** "Safety Analysis of Fuel Cell Hydrogen Supply System" *C. Zhang & X. Cao* **#38** "Steam Methane Reforming integration and increase of carbon dioxide production" *M. Tagliabue*

Thursday – June 29, 2022

PARALLEL SESSIONS – 10

	ROOM 1 – Online Link 1	ROOM 2 – Online Link 2	ROOM 3 – Online Link 3	ROOM 4 – Online Link 4	
	Track 9. Integrated Hydrogen Energy Systems **Session Chair: TBA**	**Track 2. Hydrogen Production: Electrolysis** **Session Chair: TBA**	**Track 11. Hydrogen Safety** **Session Chair: TBA**	**Track 16. Environmental Impact and Sustainable Development** **Session Chair: TBA**	
09:00 **10:30**	**#148** "Integration of a Renewable Methanol Production Process with a Low CO_2 Emissions CRGT Power Plant" *V. Tola & F. Lonis* **#37** "Coke Oven Gas as Potential Fuel for Stationary SI Engines" *R.O. Imedio, A. Ortiz, D. Gorri & I. Ortiz* **#204** "Integration of PEM Electrolyzer and Fuel Cell to a Solar-Geothermal Combined System for a Zero-Energy Building: An Exergy-Economic Analysis" *E. Baniasadi, M.Z. Rad, M.A. Behvand & N. Javani* **#179** "Performance Analysis and Comparison on Energy Storage Devices in Hydrogen-Based Integrated Energy Systems" *X. Dong, K. Shao, J. Zhang, Z. Xu & J. Wu* **#1626** "Design of a New Helical Methane Fixed Bed-Reactor" *A. Bolt, I. Dincer & M.A. Chaab* **#1606** "A Newly Developed Brayton Cycled-based Combined Plant Including Hydrogen Production and Compression: Energy and Exergy Analyses" *Y.E. Yuksel, M. Ozturk & I. Dincer* **#1523** "Modeling of A Sustainable Integrated Plant With S-CO_2 and T-CO_2 Cycles for Hydrogen Generation" *F. Yilmaz, M. Ozturk & R. Selbas*	**#13** "Enhanced Water Oxidation Reaction by Nickel Oxide Nanorod Arrays Electrocatalyst" *K. Hemmati, O. Moradlou & A. Moshfegh* **#78** "Hydrogen Production Flat Plate Solar Collector Integrated with PV-T", *A. Atız, M. Karakılçık & M. Erden* **#68** "Nickel Cobalt Oxide Nanocubes as an Efficient Electrocatalyst for Hydrogen Evolution in Alkaline Solution" *N. Kalaycıoğlu, K. Hemmati, H. Faraji & K. Mirabbaszadeh* **#1627** "Energy Perspective and Analyses of Seawater Electrolyzer for Sea Vehicle" *M.G. Sürer & H.T. Arat* **#434** "Parametric Analysis of Biomethanol Production Unit Using Biomass Gasifier and High-Temperature Electrolyzer" *H. Ghiasirad & A. Skorek-Osikowska* **#150** "H2BASQUE – Technologies for Boosting the Hydrogen Economy in the Basque Country: Green Hydrogen Production" *E. Femandez, B.C. Sanchez, F. Alcaide, S. Doppiu, M. Oregui-Bengoechea, E. G-Berasategui, E. Unzueta & J. Irigoyen* **#1629** "The Experimental Studies on Electrolyser Mode Operation of Unitized Regenerative PEM Fuel Cell" *N. Yelegen, E.S. Altuntop, G. Atalmış & Y. Kaplan*	**#296** "Risk Evaluation of Hydrogen Dispersion from Compressed Hydrogen (H_2) Storage Vessels" *R.Md. Kasmani, A. Ahmad, N. Norazahar, A.A. Jalil, T.A.T. Abdullah & M.F.A. Kamaroddin* **#1514 "**Aspects of Risks Using Magnesium Hydride for Zero Emission Mobility" *B.A. Gran, K. Løvold & S. Deledda* **#1519 "**Hydrogen Sensing Properties of Ultrathin Pt-Co Alloy Films" *M. Erkovan, C. Deger, S. Cardoso & N. Kilinc* **#408** "Assessment of Overpressures Resulting from Hydrogen Explosions Using Artificial Neural Networks" *T. Abbasi, T. Abbasi & S.A. Abbasi* **#1560** "Numerical Investigations on Flashback Limits of Premixed Methane-Hydrogen-Air Laminar Flames" *T.B. Kıymaz, E. Böncü, D. Güleryüz, M. Karaca, B. Yılmaz, C. Allouis & İ. Gökalp* **#436** "Metal Nanoparticle Decorated ZNO Nanorods for Hydrogen Sensor Applications" *S. Özturk, A. Kösemen, N. Kilinç & Z.Z. Özturk* **#1534** "An Experimental Apparatus for In-Situ Studies of Hydrogen Ingress, Dissolution and Precipitation at Controlled Temperature and Applied Tensile Stresses" *J. Lang, M. Gharghouri & H. Fritzsche*	**#1480** "Reduction of Hydrogen Carbon Footprint in Europe via International Shipping" *A. Arrigoni, E. Weidner, F. Dolci, R. O. Cebolla, U. Eynard & F. Mathieux* **#1549** "Life Cycle Assessment of Different Hydrogen Conversion Technologies from Biomass Gasification" *M.U. Öztürk, A. Ayol & O. Tezer* **#1589** "Life Cycle and Economic Assessment of Hydrogen Fuel Cell Buses" *A. Khoshnevisan, P. Ahmadi & N. Javani* **#197** "The International Energy Agency's Hydrogen Technology Collaboration Programme" *P. Lucchese & M. Holgado* **#394** "Environmental Evaluation of the Production and Liquefaction of Green Hydrogen" *J. I. Valverde, S. Senthilkumar, G. Tsatsaronis & T. Morosuk* **#1492** "Hot Gas Desulfurization Performance of SBA-15 Supported/Mixed Metal Oxides (Cu, Fe, Mn, and Zn)" *A. Kanca & G. Korkmaz* **#1516** "The Effect of Hydrogen and Ammonia Combustion on Performance and Emissions" *K. Bayramoglu, A. Bahlekeh, K. Masera*	**EXHIBITION**
10:30 **11:15**	**Coffee Break**				

Thursday – June 30, 2022

PARALLEL SESSIONS – 10

	ROOM 5 – Online Link 5	ROOM 6 – Online Link 6	ROOM 7 – Online Link 7	ROOM 8 – Online Link 8	Digital Boards – Onsite
	Track 6. Hydrogen Storage **Session Chair: TBA**	**Track 14. Hydrogen Industry, Commercialization and Marketing, Applications** **Session Chair: TBA**	**Track 9. Integrated Hydrogen Energy Systems** **Session Chair: TBA**	**Track 9. Integrated Hydrogen Energy Systems** **Session Chair: TBA**	**POSTER PRESENTATIONS – 10** **Session Chair: TBA**
09:00 10:30	**#133** "Easy Up-Scaleable Approach to Improve the Properties of Metal-Alloys for Hydrogen Storage" *J. Warfsmann, M. Passing, P.S. Krause, E. Wienken, J. Jepsen, T. Klassen & J. A. Puszkiel* **#139** "Modeling and Parameterization of a Pem Fuel Cell Stack for a System Integration into a Metal Hydride Based Hydrogen Storage System" *M.C. Guarneros, D. Dreistadt, J.B. von Colbe, G. Capurso, M. Siegers, J. Jepsen, J. Puszkiel & T. Klassen* **#196** "Different Ways to Store Massive Quantities of Hydrogen" *L.F. Londe & A. Réveillère* **#234** "Elastic Brittle Behavior of an Iron – Titanium Alloy Dedicated to Hydrogen Storage" *L. Bebon, A. Maynadier, Y. Gaillard & D. Chapelle* **#1575** "Dynamic Study of Hydrogen Absorption in Metal Hydride-Based Storage Systems" *M. Kayfeci & F.A.M. Elhamshri* **#279** "Synthesis and Stabilization of Energy Fuel Material Aluminum Hydride: A Review" *Y. Liu, Y. Zhang, F. Yang, F. Zhao, Z. Wu & Z. Zhang* **#245** "Gaseous and Solid-State Hybrid Hydrogen Storage" *H. Liu & L. Xu*	**#1531** "Prediction of Carbon Di Oxide and Other Emissions Characteristics of Low Carbon Biofuel-Hydrogen Dual Fuel Engine - A Machine Learning Approach" *J.S. Bai, F. Josephin & E.G. Varuvel* **#1615** "Decarbonizing Hard Industrial and Commercial Thermal Loads" *D. Moretton* **#1554** "Chiyoda's Approach for Hydrogen Supply Chain Business with "SPERA Hydrogen™" System" *O. Ikeda, M. Sara, M. Nagai & T. Morimoto* **#1595** "Drive Cycle Simulation of a Small-Sized Fuel Cell Electric Vehicle" *E. Alpaslan, M.U. Karaoglan & C.O. Colpan* **#298** "Development of Hydrogen Energy in Russia" *D. Dunikov & V. Borzenko* **#267** "Hydrogen Energy Research and Development in Kazakhstan: Current Status" *S. Zholdayakova & B. Suleimenova* **#1552** "Evaluation of Kinetic Models via Computational Optimization Techniques for Direct Syngas-to-Olefins Process" *K. Bulbul, A. Z. Turan, A. Sarıoğlan, G. Behmenyar & O. Ataç*	**#1608** "A System Model for Simulating a Fuel Cell Boat" *S.A. Korkmaz, S.A. Cetinkaya, B. Goksu, O. Konur, K.E. Erginer & C.O. Colpan* **#1610** "Multi-Objective Optimization of an Integrated Downdraft Biomass Gasifier and Solid Oxide Fuel Cell System" *B. Dursun, A. Erdogan, C.O. Colpan & A. Ayol* **#1504** "Hydrogen Powered Vessels at Sea: Fuel Cell & Battery Upscaling" *C. Helleland, F. Iversen & S.O. Halstensen* **#1618** "A Study on Exergetic Sustainability Indicators of Solar Methane Cracking" *A. Banu, A. Midilli, Y. Bicer* **#373** "Offshore Wind Energy Prospects for Power-to-Direct Air Capture and Power-to-Gas" *M.F. Shehzad, H. Ishaq & C. Crawford* **#1555** "Deep Learning-based Binary Classification of Islanding Conditions in A Hydrogen Energy-Based Distributed Generation System" *G.Bayrak & A.Yilmaz* **#1556** "Thd Minimization of Vehicle-to-Grid (V2G) in Fuel Cell Evs with A Developed Elliptic IIR Filter" *G.Bayrak & A.Yilmaz*	**#1622** "Development and Performance Assessment of Integrated Renewable Energy System with Hydrogen Storage for Autonomous and Mobile 3D Printing System" *S.A. Khan & M. Koc* **#212** "The Role of Renewable Hydrogen-Based Systems to Achieve Low-Carbon Stationary Power Applications" *A. Ortiz, V.M. Maestre & I. Ortiz* **#1568** "PV-Fuel cell Hybrid System Modeling and Analysis" *B. Anlamaz, A.C. Turkmen, K.C. Ata & C. Celik* **#1624** "Negative Emissions Technology for Clean Energy Generation: Hydrogen Production via Direct Air Capture of CO_2" *A. Sodiqa, M.E. Naasb & A. Amhamed* **#363** "Fuel Cell Power System Design and Implementation Based on Multi-Layer Converter" *H.B. Farahabadi, A. Panhabi, R. Yonueszadeh & M.A. Alirezapouri* **#237** "Control Strategies for Thermal Coupling System of Fuel Cell and Metal Hydride Tank: A Review" *F. Yang, J. Liu, Z.Wu & Z.Zhang* **#121** "Optimal Configuration of Energy Storage and Hydrogen Production at Renewable Energy Sites in a Power System Without Fossil Fuels in Japan" *K.Harada, K.Yabe & Y.Hayashi*	**#323** "Optimization of Room Temperature Hydrogen Sensing Capability of Pd Thin Films" *V. Dixit, D.Jaiswal-Nagar, A. Jayakumar & S. Jose* **#377** "H_2-Index for the Evaluation of Hydrogen Projects in Mexico" *G.R. Ramos-Sanchez & R. de G. Gonzalez-Huerta* **#189** "Production of Cyanodiesel as a Promising Way to Create a Waste-Free Technology for Wastewater Treatment and Carbon Dioxide Utilization" *E. Zadneprovskaya, A. Bozieva, A. Krapivina, K. Bolatkhan, A. Sadvakasova, B. Zayadan, A. Kakimova, F. Sarsekeyeva, B. Kossalbayev, S. Alwasel & S. Allakhverdiev* **#198** "Study of Cyanobacteria Characteristics Important for Biofuel Production" *A. Bozieva, M. Sinetova, E. Kupriyanova, R. Voloshin, S. Zharmukhamedov & S. Allakhverdiev* **#246** "Pseudo-Dynamic Modeling and Optimization of Heavy Paraffin Dehydrogenation Process for Selective Olefin and Hydrogen Production Using Membrane Reactors" *M. Dehdashti, M. Binazadeh & M. Farsi*
10:30 11:15	**Coffee Break**				

Thursday – June 29, 2022

PARALLEL SESSIONS – 11

	ROOM 1 – Online Link 1	ROOM 2 – Online Link 2	ROOM 3 – Online Link 3	ROOM 4 – Online Link 4	
	Track 1. Hydrogen Production: Thermochemical and Photonic Methods **Session Chair: TBA**	**Tracks 10. Power to Gas** **Session Chair: TBA**	**Track 16. Environmental Impact and Sustainable Development** **Session Chair: TBA**		
11:15 12:45	**#433** "Progress of 5 m^3/h H_2 Production Testing Facility Through Iodine-Sulfur Thermochemical Water-Splitting Method" *Z. Wang, B. Ling, Y. He, J. Zhang, Y. Zhu & Z. Wang* **#1605** "Nickel-Based Grafted Catalysts for Dry Reforming of Methane Through High-Throughput Experimentation" *G. Celik, M. Ferrandon & M. Delferro* **#116** "In-Situ Development of Amorphous NiPi Co-Catalyst Layer on Hematite Surface for Enhanced Oxygen-Evolution in Solar Water Splitting" *A. Singh, S. Sarma, S. Karmakar & S. Basu* **#421** "CFD Simulation and Analysis of a Novel Photoelectrochemical Hydrogen Generating Reactor Design" *A.M.M.I. Qureshy & I. Dincer* **#82** "H2-Enriched Syngas Production by Algae-Plastic Waste Co-Gasification Using Aspen Plus" *H. Ibrahim & P. Rosha* **#160** "Effects of Preparation Conditions on the Efficiency of H_2 Generation of Ni-Modified $Zn_{0.75}Cd_{0.25}S$ Photocatalysts" *M.A. Mersel, L. Fodor & O. Horvath*	**#417** "Preliminary Design and Flowsheeting of a Sabatier Based Power-to-Gas System with Integral Heat Recovery and downstream Syngas Cleaning" *R. Capata, R. Melli & E. Sciubba* **#438** "Power to X: The Crucial Solution on the Way of Tunisian Energy Transition and Sustainable Development" *S. Salhi, E. Znouda & C. Bouden* **#249** "Hydrogen as Energy Storage for Resolving Electricity Grid Issues in Indonesia" *A. Darmawan, M. Huda, E. L. Dewi, A. H. Budiman, A. Hadi, Kurniawan & M. Aziz*	**#43** "Well to Wheel Comparison of Fuel Cell Buses Based on Multiple Hydrogen Pathways with Battery & IC Engine Buses in India" *S. Chugh, C. Chaudhari, T. Jindal, A. Sharma, G.S. Kapur & S.S.V. Ramakumar* **#283** "The Energy-Enviro-Economic Evaluation and Multi-Objective Optimization of the Hydrogen Production Process from Coal-Biomass Co-Gasification Considering Uncertainty in Carbon Prices" *H. Yang, M. Dai, F. Yang, Y. Yu, Z. Wu & Z. Zhang* **#314** "Effective Methods to Reduce NOx Emission in a Hydrogen Fueled Gas Turbine Engine" *A.K. Thakur & L.A. Vashishta* **#152** "Biomass gasification for green hydrogen production: A review" *S. Usmani, L. Fan & A.S. Masood* **#184** "H_2 Separation from CO_2 and CH_4 Mixtures Using a SAPO-34 Membrane" *P.F. Zito, A. Brunetti, A. Caravella & G. Barbieri*		EXHIBITION
12:45 13:00	**CLOSING CEREMONY**				

Thursday – June 30, 2022

PARALLEL SESSIONS – 11

	ROOM 5 – Online Link 5	ROOM 6 – Online Link 6	ROOM 7 – Online Link 7	ROOM 8 – Online Link 8	Digital Boards – Onsite
	Track 6. Hydrogen Storage **Session Chair: TBA**	**Track 7. Fuel Cells: PEMFC** **Session Chair: TBA**	**Track 9. Integrated Hydrogen Energy Systems** **Session Chair: TBA**		**POSTER PRESENTATIONS – 11** **Session Chair: TBA**
11:15 **12:45**	**#300** "Permeability of a Deformable Metal Hydride Bed During Hydrogen Absorption" *D. Dunikov & D. Blinov* **#413** "3D COFS for Photocatalytic N_2 Fixation: A Computational Study" *A.M.O. Mohamed & Y. Bicer* **#1463** "Influence of Hydrogen on Flexible Pipe Service" *C. Gabet, S. Kjenner* **#278** "Numerical Three-Dimensional Modeling and Simulations of Electrochemical Hydrogen Compressor Based on Proton-Exchange Membrane" *J. Lee, S. Yoon, S. Heo, A. Alam, J. Choi, K. Lim & H. Ju*	**#372** "Investigations on the Micro-Scale Surface Interactions and Tribological Size Effect in Micro-Stamping of SS316L Sheets" *M.F. Peker, H. Gedikli, Ö.N. Cora & M. Koc* **#262** "Surface Topography Evaluation During Long-Run Micro-Stamping of BPPs and Its Effect on Corrosion and Contact Resistance Characteristics" *F. Peker, H. Gedikli, Ö.N. Cora & M. Koç* **#30** "Electrospun Hybrid Electrodes with Low Platinum Loading for PEM Fuel Cells" *B. Yarar Kaplan, B.S. Said, N.R. Mojarrad, A. Yurum & S. Alkan Gursel* **#163** "Combined Numerical and Experimental Analysis of Liquid Water Distribution Inside PEMFCs" *Ž. Penga, I. Tolj, P. Bosnić, J. Penga, J. Šimunović & G. Radica* **#54** "Mass Transfer Analysis of Microporous Layers for Polymer Electrolyte Fuel Cells Using Pore Network Model" *H. Nakajima, S. Iwasaki, T. Kitahara* **#1596** "Preparation of Kaolin and Bentonite Added Nafion Composite Membranes" *F. Dönmez & N. Ayas*	**#1597** "Investigation of Simultaneous Hydrogen Production and Desalination of Saline Water via Electrodialysis Process" *R. Alshebli, B. Yuzer & Y. Bicer* **#1524** "Small Drone Conversion to Long Endurance Hydrogen Fuel Cell Powered Drone" *S. Zafar, S. Ali & P. Dawson* **#1550** "Energy Management of Green Hydrogen-based Power-to-Power Generation Systems" *A. Kafetzis, S. Chatzigavriel, P. Seferlis & K. Panopoulos* **#1476** "Co-Generation of Electricity Using Waste Heat from Hydrogen Fuel Cell in A Vehicle: A Simulink Model" *K. Kamal, A.A. Shaikh, M.U. Shaikh, S.Khan, A. Jawed, A.Y. Tariq, T.A.H. Ratlamwala & A.A. Zaidi* **#186** "Analysis of Transport Options for Liquid Hydrogen in Germany" *T. Busch, T. Grob, J. Linben & D. Stolten* **#1553** "Hydrogen and Freshwater Production from Tidal Energy" *C. Celik & M.E. Demir*		**#422** "Is the Temperature Measured at Onboard Compressed Hydrogen Storage' In-Tank Valve Representative of the Tank Temperature?" *B.A. Iborra, P. Moretto & R.O. Cebolla* **#227** "Performance Comparison of Ru and Ru-Ni Based Catalysts in Autothermal and Steam Reforming of Diesel Fuel" *A.A. Bozdag, T. Dogu & N.A. Sezgi* **#242** "Hydrogen Production by Glycerol Steam Reforming" *M.M. Draghia, G. Pasca, T. Marinescu & D. Cocarta* **#432** "Energy Supply is the Main Goal of Sustainable Development" *M. Nuriyev & S. Movlamov* **#403** "Improve Photocatalityc Hydrogen Production with Ti-Ni as Nanocomposite" *A. P. Larios, C. Belver, J. Bedia, R. Zanella & J.L. Rico* **#347** "Effects of Hydrogen-Methane Gas Blend on Wellbore Integrity in Underground Hydrogen Storage: An Experimental Investigation of Elastomer Performance" *D. Tetteh, E. Ugarte & S. Salehi* **#316** "Modeling of a Fuel Cell Forklift for Material Handling in Oil Refineries" *K. Sonkar, S. Chugh & T. Jindal* **#75** "Carbon-based Membranes for Hydrogen Purification from Steam Methane Reforming: Insights from Molecular Simulations" *D. Bahamon, M. Khaleel, E. S. Cho & L. F. Vega*
12:45 **13:00**	**CLOSING CEREMONY**				