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# 8<sup>th</sup> International HYDROGEN TECHNOLOGIES Congress

12-15 May 2024

Dicle University, Diyarbakır, Türkiye

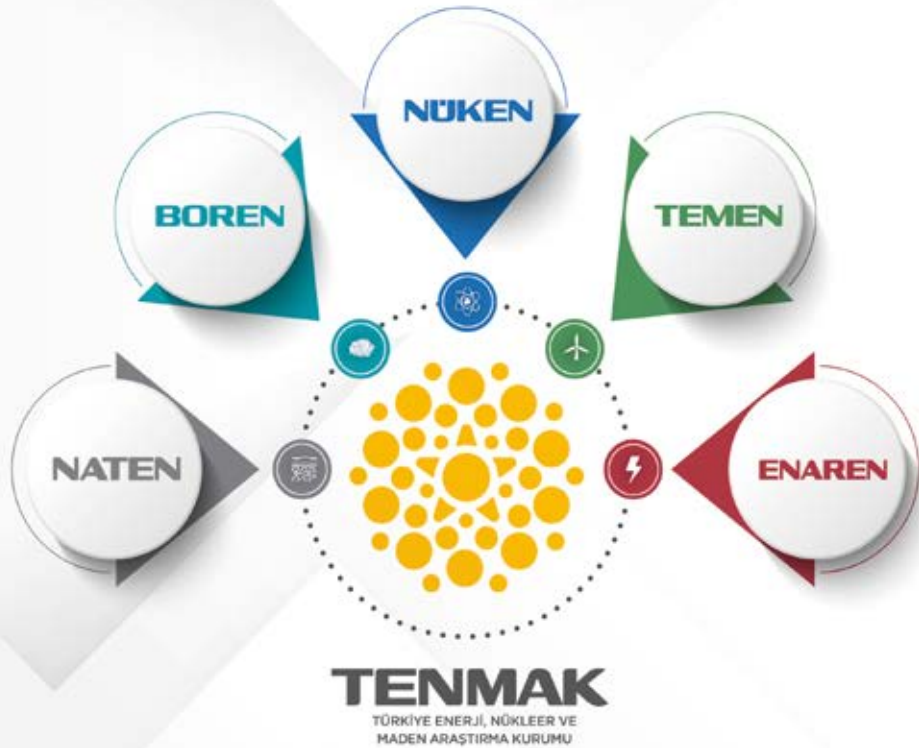
## SCIENTIFIC PROGRAM



**TENMAK**  
TURKISH ENERGY, NUCLEAR AND  
MINERAL RESEARCH AGENCY

Day 1- Sunday May 12, 2024

# ENERJİ, NÜKLEER VE MADEN TEKNOLOJİLERİNİN AR-GE KURUMU



	Registration Desk
13:00-17:00	Registration

Day 2 - Monday May 13, 2024

	HALL A
09:15-10:00	<b>Opening Talks</b> <b>Heybet KILIÇ</b> (Congress Chair) <b>İbrahim DİNÇER</b> (President, National Hydrogen Energy Association) <b>Nedim TÜZÜN</b> (Deputy General Manager, DEDAŞ) <b>Gökhan Kürşat DEMİR</b> (Deputy Production Manager, ETİ Bakır) <b>Mehmet KARAKOÇ</b> (Rector, Dicle University) <b>Ali İhsan SU</b> (Governor of Diyarbakir, to be confirmed)
10:00-10:35	<b>Theme Speaker / Abdulkadir BALIKÇI</b> (Energizing Türkiye's future:The Green Hydrogen Revolution)
10:35-10:55	<b>Coffee Break</b>
	<b>Chair: Wei-Hsin Chen</b>
10:55-11:35	<b>Keynote Speaker / İbrahim Dincer</b> (Hydrogen Energy Technologies: New Perspectives)
11:35-12:15	<b>Keynote Speaker / Seeram Ramakrishna</b> (Electrospun Nanomaterials for the Hydrogen Economy)
12:15-13:45	<b>Lunch</b> <b>Board Meeting of Hydrogen Technologies Association</b> (Invite only)

PARALLEL SESSIONS	
HALL A	HALL B
13:45-15:30	Session 1A: TENMAK Session
	Chair: Adnan Midilli
	Turkish Energy, Nuclear and Research Agency (TENMAK) Bahadır SAYGI
	Energy and Technology Policies of TENMAK Celal ERBAY
	Funding Programmes of TENMAK Gülten ÖZÇAYAN
	Session 1B: Green Hydrogen-I
	Chair: Ramazan Solmaz
	(Invited Talk) Potential of membrane engineering in the field of hydrogen generation and purification: strategies to meet the targets of the European Clean Hydrogen Alliance in the framework of the European Green Deal / <b>Adolfo Lulianelli</b>
	#212 Evaluation of Hydrogen Energy Concept from Elementary School to University: Opinions of Energy Systems Engineers on Hydrogen Energy Concept / <b>Eylem Kılıç</b>
	📶 #37 Biohydrogen Production in a Biofilm Photobioreactor with Functionalized Microfiber Flock / <b>Emrah Sagır</b> , Harun Koku Tuba Bayramoğlu et.al.
	#47 Fabrication of Graphene Oxide Based Composite Membranes for Anion Exchange Membrane Water Electrolyzers / Yılser Devrim and <b>Nisa Gökçen Önel</b>
	📶 #48 A Novel Bi/W/Cd Photocatalyst for Hydrogen Production Via Water Splitting / Ceren Sakallı and <b>Halit Eren Figen</b>

PARALLEL SESSIONS	
HALL C	HALL D
	Session 1C: Fuel Cells-I
	Chair: Bestami Özkaya
	#31 Prediction of Short-Term Voltage Loss of PEM with Single-Step and Multi-Step LSTM Networks / <b>Yurdagül Benteşen Yakut</b>
	📶 #16 Investigation of a Sacrificial Template Material Suitable for Fabrication of Anode Support Microtubes in Microtubular Solid Oxide Fuel Cells / <b>Ahmet Alp Sunecli</b> , Cigdem Timurkutluk, Tolga Altan, Sezer Onbilgin and Bora Timurkutluk
	#79 PEMFC Performance of Pt Catalyst Decorated on Heat-Treated Carbon Black / <b>Ayşenur Öztürk Aydın</b> and Ayşe Bayrakçeken
	📶 #32 Investigation of the Current Effect on Electrochemically Deposited Pt Catalyst Properties for PEMFCs / <b>Jülide Hazal Özdemir</b> and Aysel Kantürk Figen
	#41 Integration of an SOFC with Closed Brayton and Rankine Cycles for Hydrogen Production: Thermodynamic Analysis and Heat Recovery Considerations / Mohammad Ali Sabbaghi, Ehsan Baniasadi and <b>Hadi Genceli</b>
	#201 2D Transition Metal Carbide (MXene) as Promising Catalyst for Fuel Cells / <b>Emre Oguz Koroglu</b>
	📶 #12 Investigation of Thermal Integration between Fuel Cell and Metal Hydride Hydrogen Storage Tank System for Lightweight Vehicles / <b>Sera Ayten Çetinkaya</b> , Mehmet Akif Ezan, Mustafa Umut Karaoğlan and Can Ozgur Colpan
	Session 1D: Modeling, simulation and optimization-I
	Chair: M. Sıraç Özerdem
	#6 0-D Mathematical Modeling of Anion Exchange Membrane Water Electrolyzer / <b>Ceren Celebi</b> , Can Ozgur Colpan and Yılser Devrim
	#135 Analyzing Energy Efficiency in Hydrogen Energy from Agriculture: A Bibliometric Approach / Masud Kabir and <b>Sami Ekici</b>
	📶 #55 Exploring the Impact of Channel Geometry and Temperature on Solid Oxide Electrolyzer Cell Performance / <b>Berre Kumuk</b>
	#186 Thermodynamic Performance Assessment of PEMFC Powered Air to Water Heat Pump / <b>Anil Erdogan</b> , Ozge Ozcan Bilgilioglu, Oguz Yildirim, Suleyman Aykut Korkmaz, Omer Can Inci and Can Ozgur Colpan
	📶 #21 Development of Electrolytic Cation Exchange Integrated Reactor for H <sub>2</sub> Generation and CO <sub>2</sub> Extraction / <b>Hilal Sayhan Akci Turgut</b> and Ibrahim Dincer
	#139 Evaluation of Exergy Efficiency of a PEM Fuel Cell System / Sinan Kapan, <b>Zehra Ural Bayrak</b> and Nevin Çelik
	📶 #104 Estimating the Remaining Useful Life of PEM Fuel Cell with LSTM Method / <b>Mehmet İsmail Gürsoy</b>

15:30-15:50 Coffee Break	
PARALLEL SESSIONS	
HALL A	HALL B
15:50-18:05	15:50-18:05
Session 2A: Fuel Cells-II	Session 2B: Green Hydrogen-II
Chair: İnci Eroğlu	Chair: Nevin Çelik
#45 Boron-Based Hydrogen Storage Materials as a Hydrogen Source in Synthetic Fuel Production / <b>Berfin Ekin Ülgen</b> , Bilge Coşkuner Filiz, Korkut Açıklalın, Hülya Civelek Yörüklü and Aysel Kantürk Figen	#132 Synthesis of Titanium Dioxide (TiO <sub>2</sub> ) Based Photocatalyst and Investigation of Hydrogen Production Activity / <b>Beyza Yıldırım</b> , Muhammed Iberia Aydın and Aysel Kantürk Figen
📶 #119 Enabling Interactive G2V and V2G Integration Through Smart Fault Protection and Bi-Directional Power Flow Control in EV Charging Stations / Samet Öner and <b>Gokay Bayrak</b>	#220 Second-Life Battery Utilization in Solar Power Plants: Economic Analysis, Revenue Optimization, and Profit Increase / Feyza Turan, <b>Ali Rifat Boynueğri</b> , Ali Furkan Tetik, Ozan Erdincand Yavuz Ates
#90 Proton Exchange Membrane Fuel Cell Applications of Multirotor UAV / <b>Merve Yıldırım</b> , Harun Koku and İnci Eroğlu	📶 #123 Optimization of Electrospinning Parameters to Get Nano Hematite Fibers as a Photo Anode for Hydrogen Production Through Water-Splitting / <b>Sükrü Kaya</b> and Cevat Sarıoğlu
📶 #69 Oxygen Mobility Behavior of Calcium Doped BaZrO <sub>3</sub> Perovskite Electrocatalysts / Enes Emre Yılmaz, <b>Elvan Burcu Koşma</b> and Meltem Karaismailoğlu Elibol	#116 Fault Diagnosis Method for Polymer Electrolyte Membrane Fuel Cells Using Deep Learning Technologies / <b>Meltem Yavuz Çelikdemir</b>
📶 #27 De-noising of a Fuel Cell Hybrid Microgrid, Including Energy Generation, Consumption, and Storage Units / Sitki Akkaya, <b>Mehmet Güçyetmez</b> , Murat Uyar and Şekip Esat Hayber	📶 #33 Investigation of Hydrogen Production Performance of KBH <sub>4</sub> Hydrolysis with Thin Film TiO <sub>2</sub> Catalyst / <b>Ayşenur Şeşe</b> and Meryem Sena Akkus

PARALLEL SESSIONS	
HALL C	HALL D
Session 2C: Modeling, simulation and optimization-II	Session 2D: Renewable Hydrogen Technologies and Application-I
Chair: Muhsin Tunay Gençoğlu	Chair: İbrahim Kaya
#138 Catalyst Selection for Microplastic Photodegradation Via MCDM Analysis / <b>Hülya Civelek Yörüklü</b>	#185 Investigation of Hydrogen Production Potential by Using the Concentrated Multi-Junction Photovoltaic Solar Cell / <b>Cihangir Kale</b> and Hikmet Esen
#120 CFD Combustion Model Optimization for Hydrogen Blended Combustion in Furnace Experimental System / <b>Onur Salcı</b> and Semiha Öztuna	#51 Journey to a Sustainable Future: The Importance of Renewable Hydrogen in Industrial and Domestic Applications / <b>Nesrin İlgin Beyazıt</b>
#128 Design of a New MPPT Controller in PEM Fuel Cell System / <b>Servan Marşil</b> , Cem Haydaroğlu and Heybet Kilic	#53 Machine Learning Analysis of Biogas Tri-reforming for Syngas Production / Ahmet Coşgun, M. Erdem Günay and <b>Ramazan Yıldırım</b>
#130 A new controller design based on Fuel Cells / <b>Serhat Doğan</b> , Cem Haydaroğlu and Bilal Gümüş	📶 #68 Synthesis and Characterization of La and Ga Promoted Copper-Containing Catalysts for Methanol Steam Reforming Reaction / <b>Orhan Özcan</b> and Ayşe Nilgün Akın
📶 #156 Numerical Analysis of the Energy Increase of Hydrated Ethanol from the Production of Hydrogen by Autothermal Reforming / Cristiano H. G. Brito, Marcela R. M. Vilela and <b>Sérgio M. Hanriot</b> .	#71 Operation modes and hup mutation determine H <sub>2</sub> and PHB production in Rhodobacter capsulatus / <b>Ertan Hoşafçı</b> , Etkin Tarlan, Tuba Hande Ergüder Bayramoğlu and Harun Koku

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PARALLEL SESSIONS / Continued..	
HALL A	HALL B
<b>Session 2A: Fuel Cells-II</b>	<b>Session 2B: Green Hydrogen-II</b>
<b>#106</b> Fuel Cell and Battery Powered Brushless Direct Current Motor Control for Light Electric Vehicle Applications / <b><u>Habip Şahin</u></b> , Muhammed Sefa Çetin, Muhsin Tunay Gençoğlu and Ozan Erdinç	<b>#178</b> Electrochemical Hydrogen Production Activity of Self-Assembled Monolayer Film Prepared from Bingöl Walnut Leaf Extract on Copper Surface / <b><u>Yeşim Aydın Dursun</u></b> and Ramazan Solmaz
<b>#28</b> The Detection of Power Quality Change During Multiple Disturbances for Microgrid Protection and Fuel Cell Health / <b><u>Sitki Akkaya</u></b> , Mehmet Güçyetmez, Murat Uyar and Şekip Esat Hayber	<b>#192</b> Power to Hydrogen: Assessing the Transition of Electric Charging Stations to Green Hydrogen / <b><u>Meltem Yavuz Celikdemir</u></b> and Hasan Gunduz
<b>#46</b> Optimum Design and Techno-economic Evaluation of PV Integrated On-Site Hydrogen Refueling Stations / Reyhan Atabay and <b><u>Yilser Devrim</u></b>	<b>#20</b> 4-E Assessment of a Cement Clinker Cooler Integrated Ploy-Generation Cycle to Produce Power, Cooling, Hydrogen, and Freshwater / Faizan Khalid, <b><u>Mohammad Uzair</u></b> and Mohd Rihan
<b>#113</b> Optimal Design of a Solar Powered On-Grid Hybrid Charging Station for Electric-Hydrogen Vehicles / <b><u>Habip Şahin</u></b> , Cihangir Kale and Hikmet Esen	<b>#5</b> Design and Thecno-Economic Analysis of a Combined Heat and Power System with Hydrogen Storage / <b><u>Mehmet Ali Köprü</u></b> , Dursun Öztürk and Burak Yıldırım
<b>19:00-21:00</b> Gala Dinner ( )	

PARALLEL SESSIONS / Continued..	
HALL C	HALL D
<b>Session 2C: Modeling, simulation and optimization-II</b>	<b>Session 2D: Renewable Hydrogen Technologies and Application-I</b>
<b>#166</b> Renewable Energy Supported and Hydrogen Energy Storing Off-Grid Smart City Design / <b><u>Emrullah Kocaman</u></b> , Hüseyin Yağlı, Recep Yumrutaş, Ali Koç and Yıldız Koç	<b>#77</b> A Study on Geothermal-Based H <sub>2</sub> S-FeCl Hybrid Process for Hydrogen Production and H <sub>2</sub> S Removal / <b><u>Sulener Asal</u></b> , Adem Acir and Ibrahim Dincer
<b>#167</b> Development of Optimization-Based Energy Management System in Hybrid Charging Stations / Abuzer Çalışkan and <b><u>Hasan Bektaş Perçin</u></b>	<b>#221</b> Enhanced Battery State-of-Health Estimation Using Artificial Intelligence and Multiple Charge/Discharge Features / <b><u>Cafer Budak</u></b>
<b>#179</b> Advancing Power System Reliability with AI-Driven Monte Carlo Simulations for Hydrogen Fuel Cell Integration / Dogan Urgan and <b><u>Gokhan Gungor</u></b>	<b>#174</b> Cooperative Games to Support the Development of the Hydrogen Economy / <b><u>Sofía De-León Almaraz</u></b> , Andrea Gelei and Tamás Solymosi
<b>#95</b> A New Approach to Determine Model Parameters of Proton Exchange Membrane Fuel Cells Using Convolutional Neural Network / <b><u>Mustafa Tan</u></b> and Cem Emeksiz	<b>#129</b> Hydrogenation of Safflower Oil for Sustainable Biocomposite Production: Process Optimization and Characterization / <b><u>Ercan Aydoğmuş</u></b> and Cenk Yanen



HALL A		
Chair: Fariborz Haghighat		
09:00-09:40	<b>Keynote Speaker / Zhe Chen</b> (Hydrogen- A Carrier in Future Clean and Sustainable Energy Systems)	
09:40-10:20	<b>Keynote Speaker / Wei-Hsin Chen</b> (Hydrogen Production and Separation Optimization for Decarbonization and Net Zero)	
10:20-10:40	Coffee Break	
PARALLEL SESSIONS		
HALL A	HALL B	
10:40-12:35	<b>Session 3A: Company Overview Presentations-I</b> Chair: Adnan Midilli <b>Anton Paar</b> Seda GİRAY ÖZEN Application and Sales Specialist <b>TEK-SİS</b> Hüseyin DEVRİM General Manager <b>Bataryasan Enerji</b> Mehmet Fatih KAYA General Manager <b>Aspilsan</b> Emre ATA Hydrogen and Fuel Cell Development Center Manager <b>YEO Teknoloji</b> Ali KELEŞ	<b>Session 3B: Renewable Hydrogen Technologies and Application-II</b> Chair: Mehmet Nergiz <b>#121</b> Hydrogen Blended NG Fuelled a Process Heating Application / <b>Onur Salcı</b> , Semiha Öztuna and Mustafa İlbaş <b>#217</b> Assessing the Environmental Footprint of Catalysts in Photoelectrochemical Hydrogen Production Through Life Cycle Analysis / <b>Muhammed Iberia Aydin</b> and Ibrahim Dincer <b>#109</b> Supervised Learning Based PEM Fuel Cell Model / Soner Çelikdemir, <b>Burak Özdemir</b> and Mahmut Temel Özdemir

PARALLEL SESSIONS	
HALL C	HALL D
<b>Session 3C: Energy, exergy and economic analyses-I</b> Chair: HüseyinTuran Arat <b>#10</b> A Comprehensive 4E Analysis and Multi-Objective Optimization of a Hybrid Trigenation System Powered by a Solar Tower and Wind Turbine for Producing Green Hydrogen, Electricity, and Cooling / Faizan Khalid and <b>Syed Abuzar Suhail</b> <b>#49</b> Experimental Studies and Comprehensive Analysis of Energy, Exergy, Environmental, and Enviroeconomic Aspects of Diesel Fuel, Waste Tyre Pyrolytic Oil, and Oxy-Hydrogen Gas Mixture Used for Diesel Engine / <b>Salih Özer</b> , Halil Erdi Gülcan, Samet Çelebi and Usame Demir <b>#54</b> Catalytic Activity of W-O and Fe-O in H <sub>2</sub> S Decomposition / <b>Yaren Ataseven</b> , Mert Yekta Doğan, Sena Yaşyerli, H. Mehmet Taşdemir, Hüseyin Arbağ and Nail Yaşyerli	<b>Session 3D: Conventional hydrogen technologies and applications</b> Chair: Aysel Kantürk Figen <b>#58</b> Colorless Distributed Combustion (CDC) Effects on Hydrogen – Methane Composite Fuel Mixture Combustion Characteristics / <b>Osman Kumuk</b> and Serhat Karyeyen <b>#102</b> Thermodynamic Assessment of an Improved Solar Powered Multi-Generation System Using a Thermoelectric Generator / Mohammad Ali Sabbaghi, Ehsan Baniyasi and <b>Hadi Genceli</b> <b>#110</b> Preparation and Performance Investigation of Self-supported CoB Catalysts for Sodium Borohydride Hydrolysis Reaction / Jülide Hazal Özdemir, Hüseyin Elçiçek, Görkem Kökkülünk and <b>Oğuz Kaan Ozdemir</b>

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PARALLEL SESSIONS / Continued..	
HALL A	HALL B
Session 3A: Company Overview Presentations-I	Session 3B: Renewable Hydrogen Technologies and Application-II
	<p>📶 #140 Heterojunction Cr<sub>2</sub>O<sub>3</sub>/Cu<sub>o</sub> Photocathode for Photoelectrochemical Hydrogen Production / <b>Ender Faki</b>, Fatih Tezcan, Gökmen Sığircık and Gülfeza Kardaş</p>
	<p>📶 #152 Enhancing Operation Reliability of PV/PEMFC/Battery-Based Distributed Generation via Deep Supervised Learning Approach / <b>Alper Nabi Akpolat</b></p>
	<p>📶 #154 Multi-optimization of Hydrogen Production of a Solar-based S-I Thermochemical Cycle / Ramazan Çakiroğlu, Gamze Şener, <b>Oğuz Kaan Çinici</b> and Adem Acır</p>
	<p>#164 Modeling and Control of the PEMFC Energized Mobile Robot / <b>Tevfik Yiğit</b></p>
	<p>#171 Hydrogen-based Mobile Fast Charging Station for Disasters and Emergencies / <b>Tevfik Yiğit</b>, Hakan Celik and Zehra Ural Bayrak</p>
12:35-14:30	<p><b>Lunch</b> Meeting Between Hydrogen Technologies Association and Companies (Invite only)</p>

PARALLEL SESSIONS / Continued..	
HALL C	HALL D
Session 3C: Energy, exergy and economic analyses-I	Session 3D: Conventional hydrogen technologies and applications
<p>#237 Impact of Green H<sub>2</sub> on Global Warming and Production: Transportation Challenges / <b>Zaheer Abbas</b></p>	<p>#155 Novel Bi<sub>2</sub>S<sub>3</sub> and NiBiS<sub>3</sub> Electrocatalysts for Alkaline Hydrogen Evolution Reactions / <b>Goncagül Aksaray</b>, Mehmet Erman Mert, Başak Doğru Mert and Gülfeza Kardaş</p>
<p>#14 Hydrogen Fuel Quality, Testing, Reference Materials Production, Proficiency Testing Scheme / <b>Erinc Engin</b>, Thomas Bacquart, Abigail Morris and Pierpaolo Modugno</p>	<p>#157 NiP Cathode Catalyst for Alkaline Water Electrolyser / <b>Goncagül Aksaray</b>, Ender Faki, Yakubu Sawadogo Adam, Patrick Marcel Seumo Tchekwagep, Murat Farsak and Gülfeza Kardaş</p>
<p>#4 Assessing the Thermodynamic Examination of Solar Heliostat-based Multigeneration Plant Integrated with LNG Regasification Cycle for Hydrogen Generation / <b>Fatih Yılmaz</b>, Murat Ozturk and Resat Selbas</p>	<p>📶 #163 Design, Data Analysis and Prototype Manufacturing of Off-Grid Domestic Refrigerator Systems / <b>Burak Halis Güneş</b>, Bahattin Sevinçli, Ufukhan Acar, Tahsin Altuğ Özden, Olgun Konur, Suleyman Aykut Korkmaz, Anil Erdoğan and Rüstem Aşık</p>
<p>#161 Thermodynamic Analysis of the Integration of Reverse Osmosis Desalination, Reverse Electrodialysis and Photo-Chloralkaline System Using Renewable Energy for Enhanced Brine Management and Hydrogen Production / <b>Nadira Salsabila</b>, Muhammad Usman Sajid and Yusuf Bicer</p>	<p>📶 #162 The Effect of TiO<sub>2</sub> Coating on PEC Efficiency of Hematite Photoanode Produced by Thermal Oxidation of Electrodeposited Fe Thin Films / <b>Uğur Oktay</b> and Cevat Sarıoğlu</p>
<p>#9 A Sustainable Geothermal Based Multigeneration Plant for Green Hydrogen Generation; Energy and Exergy Analysis / <b>Fatih Yılmaz</b>, Murat Ozturk and Resat Selbas</p>	<p>📶 #175 Nano Iron Powder Usage in HHO Dry Cell Electrolyte Solution / Mustafa Kaan Baltacıoğlu and <b>Onur Bulut</b></p>
<p><b>Lunch</b> Meeting Between Hydrogen Technologies Association and Companies (Invite only)</p>	<p><b>Lunch</b> Meeting Between Hydrogen Technologies Association and Companies (Invite only)</p>

PARALLEL SESSIONS	
HALL A	HALL B
<b>14:30-16:15</b>	<p><b>Session 4A: Company Overview Presentations-II</b></p> <p><b>Chair: Can Özgür Colpan</b></p> <p><b>Dicle Elektrik</b> Ahmet KIRAT Deputy General Manager, DEDAŞ</p> <p><b>Filament Technology</b> Yusuf Can UZ-CEO</p> <p><b>Hydrogenix</b> Ali Rıza ARSLAN General Manager</p> <p><b>TRL Instruments</b> Bülent ATAMER Consultant</p> <p><b>TÜPRAŞ</b> Ela AYRAL R&amp;D Researcher   Project &amp; Incentives Management- Clean Hydrogen Team</p>
	<p><b>Session 4B: Hydrogen vehicles-I</b></p> <p><b>Chair: Bilal Gümüş</b></p> <p><b>#44</b> Emission Analyses of Hydrogen Fuels Obtained From Different Sources for Various Vehicles / <b>Sumeyya Ayca</b> and Ibrahim Dincer</p> <p><b>#225</b> Thermal Performance of a Biogas-Fed Multi-generation Plant for Power, Cooling, and Hydrogen Generation with LNG Cold Energy Recovery / Shoab Khanmohammadi, <b>Gamze Soy Turk</b> and Onder Kizilkan</p> <p><b>#63</b> Accelerating Towards Hydrogen: A Qatar Scenario-Based Life Cycle Cost Comparison between Conventional, Electric, and Hydrogen Fuel Cell Vehicles / <b>Yusuf Bicer</b>, Carlos Mendez, Brenno Castrillon Menezes, Marcello Contestabile</p> <p><b>#224</b> A novel SOFC based multi-generation system with recompression sCO<sub>2</sub>-BC, reheat tCO<sub>2</sub>-RC, HDH unit and H<sub>2</sub> production / <b>Gamze Soy Turk</b> and Onder Kizilkan</p> <p><b>#80</b> Simulational Analyses of Hybrid Fuel Cell Locomotive / Mustafa Tunahan Başar, <b>Mustafa Kaan Baltacıoğlu</b> and Hüseyin Turan Arat</p> <p><b>#114</b> Comparative Environmental Impact Evaluation of Diesel Fuels and Liquid Hydrogen in Transportation / <b>Assem Abdurakhmanova</b> and Ibrahim Dincer</p> <p><b>#169</b> Fuel Cell Powered Visible Light Communication System Design / <b>Yavuz Erol</b></p>
<b>16:15-16:35</b>	<b>Coffee Break</b>

PARALLEL SESSIONS	
HALL C	HALL D
<b>Session 4C: Hydrogen storage and materials</b>	<b>Session 4D: Hydrogen thermodynamics</b>
<b>Chair: Sedat Bingöl</b>	<b>Chair: Mehmet Karakılıç</b>
<p><b>#13</b> Characterisation of a Graphite Electrode Coated with a Nickel-Modified Nickel-Iron Alloy and Catalytic Effect in an Alkaline Medium / Ali Topak and <b>Serap Toprak Döşlü</b></p> <p><b>#50</b> Hydrogen Storage and Metal Hydride Storage / <b>Nesrin İlgin Beyazit</b></p> <p><b>#66</b> Retrofitting Analysis of LNG FSRU with On-Board Ammonia and Hydrogen Storage Tanks / <b>Dindhya Andriani</b>, Omer Abedrabboh and Yusuf Bicer</p> <p><b>#70</b> Effect of different Solvents on Hydrogen Production from Hydrolysis of Potassium Borhydride with a New and Active Ni-Based Catalyst Synthesized by Green Synthesis / Ömer Şahin, <b>Selma Ekinci</b>, Mehmet Sait İzgi and Erhan Onat</p> <p><b>#89</b> Well-Integrity Issues in the Underground Hydrogen Storage Sites / <b>Sukru Mery</b> and Hakkı Aydın</p> <p><b>#100</b> Optimizing Underwater Hydrogen PEMFC Applications: A 2-D Mathematical Modeling Framework for Metal Hydride-Based Hydrogen Storage Systems / <b>Berna Sezgin</b>, Tayfur Öztürk and İnci Eroğlu</p> <p><b>#141</b> Hydrogen Generation from Ethylenediamine Bisborane Solution with Metal Catalyst Coated on Metal Oxide / Reduced Graphene Oxide / <b>Burak Uygur Mert Yorgun</b>, Gülay Özkan and Göksel Özkan</p>	<p><b>#26</b> A Solar Integrated System with a New Hydrogen Generator / <b>Mehmet Gursoy</b> and Ibrahim Dincer</p> <p><b>#82</b> The Investigation of Hydrogen Production by Using Proton Exchange Membrane Electrolysis Cell Technology / Hacı Soğukpınar, İsmail Bozkurt, Serkan Çağ, Mustafa Yavaş, Ayhan Atız and <b>Mehmet Karakılıç</b></p> <p><b>#83</b> A Superadiabatic Hydrogen Sulfide Combustion System for Clean Hydrogen Production / <b>Muhammad Ishaq</b> and Ibrahim Dincer</p> <p><b>#99</b> Developing Exergetic Sustainability Indicators of Anion Exchange Membrane Electrolyzer / <b>Furkan Şengüler</b> and Adnan Midilli</p> <p><b>#108</b> Investigation of the Effects of Hydrogen and Water Vapor Addition on Compression Engine Performance and Exhaust Emissions / Zafer Akbalık and <b>Orhan Arpa</b></p> <p><b>#158</b> The Effect of Using Nanofluid in a Parabolic Trough Collector on Its Thermodynamic Performance and Hydrogen Production / <b>Orhan Şahmerdan</b>, Canan Cimsit and Müslüm Arıcı</p> <p><b>#159</b> The Performance Comparison of a Hydrogen Production System Utilizing Solar Energy with Nanofluid in Its Parabolic Trough Collector for Antalya and Kocaeli / <b>Orhan Şahmerdan</b>, Canan Cimsit and Müslüm Arıcı</p>
<b>Coffee Break</b>	<b>Coffee Break</b>



PARALLEL SESSIONS	
HALL A	HALL B
<b>16:35-18:35</b>	
<b>Session 5A: Hydrogen in smart grids</b>	<b>Session 5B: Green Hydrogen-III</b>
<b>Chair: Mesut Şeker</b>	<b>Chair: Habip Şahin</b>
<b>(Invited Talk)</b> Energy Ships for Hydrogen Production / <b>Wolfram Reiners</b>	📶 <b>#42</b> Development of Electro-biomembrane Integrated Renewable-based System to Produce Fresh Water and Biohydrogen for Sustainable Communities / <b>A. Yagmur Goren</b> , Ibrahim Dincer and Ali Khalvati
	📶 <b>#93</b> Investigation of Methane Catalytic Decomposition over Mesoporous Carbon Supported Ni/La Based Catalysts / <b>Hazal Pınar Köse</b> and Dilek Varışlı
<b>#133</b> Impacts of Hydrogen Fuel Stations on Distribution Networks / <b>Halil İbrahim Tekin</b> and Bilal Gümüş	📶 <b>#94</b> Development of Bimetallic Catalysts for CO <sub>x</sub> -free Hydrogen Production by Microwave-Assisted Catalytic Methane Decomposition / <b>Ceren Acar</b> and Dilek Varışlı
📶 <b>#145</b> Analysis of Real Grid Voltage Fluctuation Problem with Nickel Hydrogen Batteries Using DIGSILENT Program / <b>Hulusi Faik Orhan</b> and Abuzer Çalışkan	📶 <b>#111</b> Synthesis of Cd <sub>0.7</sub> Zn <sub>0.3</sub> S/MoS <sub>2</sub> Catalysts and Investigation of Their Activities in Photocatalytic H <sub>2</sub> Production / <b>İbrahim Kaba</b> and Özge Kerkez Kuyumcu
<b>#226</b> Applications and Challenges in High Pressure Gas Sorption / <b>Seda Giray Özen</b>	📶 <b>#97</b> Leveraging Renewable Energy for Turkey's Future Hydrogen Supply Chain: A Stochastic Programming Model / <b>Busenur Türkali Özbek</b> , Ahmet Erdoğan and Mehmet Güray Güler

PARALLEL SESSIONS	
HALL C	HALL D
<b>Session 5C: Fuel Cells-III</b>	<b>Session 5D: Hydrogen separation and purification</b>
<b>Chair: Zehra Ural Bayrak</b>	<b>Chair: Can Özgür Colpan</b>
📶 <b>#118</b> The Effective Parameter Estimation for a PEMFC Based on Archimedes Optimization Algorithm / Abuzer Çalışkan and <b>Hasan Bektaş Perçin</b>	📶 <b>#18</b> Gas Chromatographic Separation of Trace Levels of Hydrogen Isotopes Using Plasma Activated Al <sub>2</sub> O <sub>3</sub> Columns At 77.4 K / <b>V. Gayathri Devi</b> , Vrushank Mehta, Aravamudan Kannan and Amit Sircar
<b>#131</b> Control Parameters Optimization of HHO Dry Cell by Metaheuristic Algorithms / Çağlar Conker and <b>Mustafa Kaan Baltacıoğlu</b>	<b>#40</b> Development of Polybenzimidazole Containing MOF Membranes for Anion Exchange Membrane Water Electrolysis / <b>Hasan Altınışık</b> and Yılsar Devrim
📶 <b>#136</b> Use of Rotor Wound Synchronous Motor in Fuel Cell Electric Vehicles / <b>Kıvanç Doğan</b> , Ahmet Orhan and Abuzer Çalışkan	📶 <b>#75</b> Sonic Hydrogen Production: An Experimental Investigation / <b>Moslem Sharifishourabi</b> , Ibrahim Dincer and Atef Mohany
📶 <b>#146</b> Identifying the Battery Status and Battery Capacity in Discharge based on Battery Current by Machine Learning Methods / <b>Yasin Sönmez</b>	📶 <b>#205</b> Activated Carbon from Sugar Beet Pulp for CO <sub>2</sub> Capture / Fahriye Dönmez Dayı, <b>Salahaldeen Aljafreh</b> , Damla Dumlu and Nezihe Ayasşablona
📶 <b>#148</b> Comparative Analysis of YSZ and SCSZ Electrolytes in Solid Oxide Fuel Cells (SOFCs) with Novel PrCeMn Electrocatalyst / <b>Esra Balkanlı Unlu</b> , Meltem Karaismailoglu and Halit Eren Figen	<b>#56</b> Evaluation of Hydrogen Production by Cobalt Chloride Thermochemical Method in a Fusion Reactor / <b>Medine Özkaya</b> and Adem Acir

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PARALLEL SESSIONS / Continued..	
HALL A	HALL B
<b>Session 5A: Hydrogen in smart grids</b>	<b>Session 5B: Green Hydrogen-III</b>
<b>#107</b> Evaluation of a Decarbonized Combined Heat and Power (CHP) Plant, Incorporating Photovoltaic Panels and Hydrogen Re-electrification / Maryam Karami, Parsa Fathi and <b><u>Parisa Heidarnejad</u></b>	<b>#168</b> Some Policies About Green Hydrogen Use for Decarbonization of Steel Industry / <b><u>Ali Eren Aluç</u></b> and Adnan Midilli
<b>#115</b> Exploring Novel Sustainable Energy Management Techniques: Unlocking the Potential of Black Sea Hydrogen Sulfide into Usable Energy / <b><u>Elifnaz Unay</u></b> , Bestami Özkaya, Doğukan Tunay and Oğuz Kaan Özdemir	<b>#34</b> Hydrogen Transport Using Ammonia / <b><u>Miray Deşer Karip</u></b> and Mustafa Kaan Baltacıoğlu
<b>#127</b> Analysis of a Microgrid with Hydrogen Storage from a Technoeconomic Perspective / <b><u>Elifnur Bayraktar</u></b> , Cem Haydaroğlu, Yahya Akil, Faruk Barlaz, and Heybet Kilic	<b>#137</b> Thermodynamic Analysis of Hydrogen Production with Different Solar Collectors / <b><u>Arif Karabuga</u></b>
<b>#150</b> Utilization of Modular Floating Offshore Energy Islands with High Green Hydrogen Penetration: A P2X example / <b><u>Alper Nabi Akpolat</u></b>	<b>#191</b> Assessment of Sensitivity to Temperature and Feedstock Characteristics in Biomass Pyrolysis using Aspen Plus / <b><u>Kaan Erdem</u></b> , Duygu Gündüz Han and Adnan Midilli
<b>18:35-19:40</b>	<b>Board Meeting of Hydrogen Technologies Association (Invite only)</b>

PARALLEL SESSIONS / Continued..	
HALL C	HALL D
<b>Session 5C: Fuel Cells-III</b>	<b>Session 5D: Hydrogen separation and purification</b>
<b>#149</b> Circle-Inspired Optimization Algorithm for Parameter Estimation in Photovoltaic and Fuel Cell Systems / <b><u>Süleyman Yıldız</u></b>	<b>#147</b> Hydrogen Production with Cu-Cl Thermochemical Cycle Integrated into Next-Generation Nuclear Power Plant for Sustainable Cities / <b><u>Muhammet Mert Dincer</u></b> and Merve Ozturk.
<b>#29</b> Silicotungstic Acid-Incorporated Waste Tire-Derived Activated Carbon Catalysts for DME Production / Altay Usta, Baris Tekce, <b><u>Ogun Tastan</u></b> and Birce Pekmezci Karaman	<b>#189</b> HOPat: A New Feature Extraction Function Based on the Atomic Orbitals of the Hydrogen Atom / <b><u>Habip Sahin</u></b> , Şengül Doğan and Türker Tuncer
<b>#15</b> Effects of Volume Fraction and Particle Size on Triple-Phase Boundaries in Solid Oxide Fuel Cell Anodes / <b><u>Emre Ucar</u></b> and Bora Timurkutluk	<b>#61</b> Hydrogen Detection and Electrical Properties of Perovskite $TiSiO_4$ Schottky Diode / <b><u>Lütfi Bilal Taşyürek</u></b> and Necmettin Kilinc
<b>#105</b> Investigation of Hydrogen Production from Brine by Using Membrane Cell Process Technology / <b><u>Hacı Soğukpınar</u></b> , İsmail Bozkurt, Serkan Cag, Mehmet İsmail Gürsoy, Ayhan Atiz and Mehmet Karakılçık	<b>#73</b> Gas Leakage from Hydrogen Car Stored Tanks: A Bow-Tie Risk Analysis / <b><u>Mehmet Tunç</u></b> and Ramazan Solmaz

PARALLEL SESSIONS	
HALL A	HALL B
<b>09:00-10:25</b> <b>Session 6A: Sustainable hydrogen technologies</b> <b>Chair: Ramazan Solmaz</b> <b>(Invited Talk)</b> Past, Present and Future of Polymer Electrolyte Membrane Electrolyzers for Green Hydrogen Production / <b>Can Erkey</b>	<b>Session 6B: Renewable hydrogen technologies and applications-III</b> <b>Chair: Mehmet Karakılıçık</b> 📶 <b>#173</b> Off-grid cities with an Environmental Analysis Approach for Sustainability: A Review Considering Alternative Fuels, Renewable Energy Sources and Energy Storing / <b>Emrullah Kocaman</b> , İbrahim Furkan Korkmaz, Hüseyin Yağlı and Özkan Köse 📶 <b>#176</b> Exergetic Sustainability Indicators of E-methanol Production depending on green hydrogen / <b>Selçuk İnaç</b> and Adnan Midilli 📶 <b>#188</b> Fabrication of 3D Ordered Mesoporous 1T-phase MoS <sub>2</sub> /C for Electrochemical Hydrogen Evolution / <b>Derya Öncel Özgür</b> and Filiz Aktı <b>#207</b> Feasibility Studies for Potential Hydrogen Production Methods and Industrial Applications in Determining the Decarbonization Road Map in Turkey / <b>Huseyin Biyikci</b> , Yusuf Furkan Ergur, Alper Vahaplar and Yusuf Bicer
	📶 <b>#17</b> Developing a Visible Light Communication System for Grid Protection in a Green Hydrogen Powered EV Charging Station / Murat Daş and <b>Gokay Bayrak</b> <b>#195</b> Hydrogen Production of CaCl <sub>2</sub> and MgCl <sub>2</sub> Salts Through Chlor-Alkali Method / <b>Serdal Damarseçkin</b> , Mustafa Erden, Ayhan Atız, Hatice Karakılıçık and Mehmet Karakılıçık

PARALLEL SESSIONS	
HALL C	HALL D
<b>Session 6C: Hydrogen vehicles-II</b> <b>Chair: Hüseyin Turan Arat</b> <b>#124</b> Energy Management Strategy for Improving Flight Performance of Fuel Cell Hybrid Quadrotor UAV / Sencer Ünal and <b>Murat Kayaoğlu</b>	<b>Session 6D: Syngas technologies</b> <b>Chair: Fatih Sorgulu</b> <b>#7</b> Syngas Reforming on Microwave Cracking Bed Following Bubbling Coal and Biomass Pyrolysis Tar Mix / <b>Yildirim İsmail Tosun</b> and Fethullah Chichek
📶 <b>#134</b> A Review of Performance, Combustion, and Emissions of Diesel Engines Fuelled with Hydrogen / <b>Mert Gülüm</b>	📶 <b>#22</b> Reactivity of Nickel Based Monolithic Catalyst in the Oxidative Steam Reforming of Biogas with H <sub>2</sub> S / <b>Merve Doğan Özcan</b> , Orhan Özcan and Ayşe Nilgün Akın
<b>#153</b> Comparison of Diesel and Fuel Cell Powered Locomotives in terms of Environmental and Technological Change / Kenan Doğan and <b>Zehra Ural Bayrak</b>	<b>#25</b> CeCoO <sub>3</sub> as an Effective Catalyst Support for Ni in Methane Reforming Reactions / <b>Atalay Calisan</b> and Deniz Üner
<b>#122</b> Performance Evaluation for an Hybrid E-scooter Worked with FC/Battery Integration / Sencer Ünal and <b>Hilal Bıyık</b>	📶 <b>#35</b> Heating Tubes Design for Parametric Study of Steam Reformer at Small Scale / <b>Muhammed Murat Aksoy</b> and Onder Kaska

Continued on the next page

PARALLEL SESSIONS / Continued..	
HALL A	HALL B
<b>Session 6A: Sustainable hydrogen technologies</b>	<b>Session 6B: Renewable hydrogen technologies and applications-III</b>
<b>#67</b> Enhancing Photocatalytic Partial Oxidation of Methane to Methanol: Experimental Investigation of 2D and Oxide Catalysts / <b><u>Amira Chebbi</u></b> , Alessandro Sinopoli, Ahmed Abotaleb and Yusuf Bicer	<b>#198</b> Development of a High-Performance Fully Automatic PEM Water Electrolyser Control System for Solar Energy-Assisted Hydrogen Production / <b><u>Eda Nur Çakıraslan</u></b> , Emre Özdoğan, Eren Batuhan Orhan, Ahmet Altun, Murat Kisti and Mehmet Fatih Kaya
<b>#160</b> Effects of Chemical Machining Characteristics of Aluminum as Metallic Bipolar Material / <b><u>Deniz Okka</u></b> and Orhan Çakır	<b>#204</b> Steam Reforming of Sugar Beet Pulp in the Presence of Ni/Dolomite Catalyst for the Synthesis of Hydrogen-Rich Gas / <b><u>Tolga Kaan Kanatlı</u></b> , Nasrin Pourmoghaddam, Serkan Karadeniz and Nezihe Ayas
<b>#78</b> A Floating SMR and Ocean-Based Community Energy System with Hydrogen and Molten Salt Storage / <b><u>Mert Temiz</u></b> and Ibrahim Dincer	<b>#103</b> The Closed Loop Control for Enhanced Performance of Quasi-Switched Boost Inverters in PEM Fuel Cell-Based Residential Applications / <b><u>Melike Esen Güngör</u></b> , Ozan Gülbudak, Mustafa Gökdağ, Mehmet Özdemir and Ahmet Orhan
<b>#81</b> Hydrogen Gas Production from Agropyron repens by Dark Fermentation / <b><u>Nurten Dilara Kaplan</u></b> and Hidayet Argun	<b>#96</b> An Integrated Solution to Overcome Salt Lake Droughts with Hydrogen Production and Storage / <b><u>Dogan Erdemir</u></b> and Ibrahim Dincer
<b>10:25-10:40</b> Coffee Break	

PARALLEL SESSIONS / Continued..	
HALL C	HALL D
<b>Session 6C: Hydrogen vehicles-II</b>	<b>Session 6D: Syngas technologies</b>
<b>#170</b> Securing the Future a Comprehensive Study on the Implications of Cyber Intrusions on Battery Management in Fuel Cell Electric Vehicles / <b><u>Hasan Gunduz</u></b>	<b>#52</b> Development of SBA-15/ Cordierite Monolith Supported Catalysts and Their Use in Hydrogen Production by Partial Oxidation of Methane / <b><u>İlke Ilıcak Bayraktar</u></b> and Halit Eren Fige
<b>#24</b> Hetero-junction Catalysts for H <sub>2</sub> -N <sub>2</sub> Cyclic Energy Storage with Artificial Solar N <sub>2</sub> Fixation / <b><u>Bilge Coskuner Filiz</u></b> , Korkut Açıkalın, Hulya Civelek Yoruklu, Murat Çalıřkan and Serço Sekis Yeřilkaya	<b>#59</b> Numerical Study for Low-Emission Coke Oven System Using Combustion of Coke Oven Gas under CDC Conditions / <b><u>Osman Kumuk</u></b>
<b>#76</b> Catalytic Ammonia Decomposition Over Nickel and Ruthenium Supported on Al <sub>2</sub> O <sub>3</sub> Pellets for Hydrogen Production / Ali Turgay řan, Mehmet Çakır and <b><u>Halit Eren Figen</u></b>	<b>#193</b> Experimental Investigation of Distinct Surface Geometries of Nickel Coated 3D Printed Electrodes / <b><u>Ibrahim Eren Dincer</u></b> and Martin Agelin-Chaab
<b>#218</b> Electroplating of Copper- Based Materials and Investigation of Their HER Performance / <b><u>Zeynep Kuyumcu</u></b> , Hurmus Gursu, Muhammed Iberia Aydin and Ibrahim Dincer	<b>#202</b> A Strategy Study on Green Hydrogen Valleys / <b><u>Adnan Midilli</u></b>
<b>Coffee Break</b>	

PARALLEL SESSIONS	
HALL A	HALL B
<b>10:40-12:15</b>	<b>Session 7A: Fuel Cells-IV</b>
<b>Chair: Hüseyin Turan Arat</b>	<b>Session 7B: Modeling, simulation and optimization-III</b>
<b>Chair: Hüseyin Turan Arat</b>	<b>Chair: Anil Erdoğan</b>
<b>#172</b> Comparative Evaluation of Non-Precious Material Catalysts for PEM Fuel Cells in Terms of Cost, Stability and Activity / <b>Erman Çelik</b>	<b>#182</b> Integrating RLS and FCS-MPC for Enhanced Control in Hydrogen Fuel Cell and Grid Inverter Systems / <b>Sulman Shahzad</b> and Muhammad Abbas Abbasi
<b>#177</b> Ni-Modified Self-Assembled Monolayer Films of Bingöl Pollen on Copper Substrate as a Novel Anode Catalyst for Methanol Electrooxidation Reaction / <b>Yeşim Aydın Dursun</b> and Ramazan Solmaz	<b>#60</b> Numerical Simulation of Methane Dry Reforming over Supported Nickel Catalyst / <b>Ahmed Aheed Ali Mohammed</b> , Mohammed Al-Marri and Anand Kumar
<b>#38</b> Maximizing Power Efficiency: The FC+PV+WT Hybrid Renewable Energy System / <b>Ayşe Kocalmis Bilhan</b>	<b>#210</b> Current Sharing and Voltage Regulation Based on Dynamic Consensus Algorithm in PV-Fuel Cell-Battery Sourced DC Microgrid / <b>İlhami Poyraz</b> and Mehmet Emin Askerşablona
<b>#206</b> Performance of Nanometric Ti/TiN Bilayer Cathodic Arc Evaporated Coating on 304SS as Bipolar Plate for PEMFC / <b>Enis Furkan Uçar</b> , Erkut Yılmaz and Özden Kısacık	<b>#112</b> Synthesis of CuS/CuInS <sub>2</sub> /TiO <sub>2</sub> Catalysts and Investigation of Their Activities in Photocatalytic H <sub>2</sub> Production / Elif Tuğba Yılmaz, <b>İbrahim Kaba</b> and Özge Kerkez Kuyumcu
<b>#211</b> Enhanced Performance Prediction for Proton Exchange Membrane Fuel Cells: A Comparative Study of LSTM and Conventional Methods / Masud Kabir and <b>Sami Ekici</b>	<b>#165</b> Use of Hydrogen as Secondary Fuel in Internal Combustion Engines: A Approach on Combustion, Performance and Emissions / Süleyman Şimşek and <b>Muhammed Uçum</b>
<b>#219</b> Proton Exchange Membrane Water Electrolysis System: Steady-State Modeling and Assessment / <b>Nurettin Sezer</b> and Sertac Bayhan	<b>#190</b> Alternative Fuel Mixtures and Sustainable Development: An Energy and Environmental Perspective Evaluation of Diesel, Biodiesel, and Alcohol Blends / <b>Halis Deviren</b>
<b>#216</b> Modeling and Simulation Photovoltaic-Electrolyzer-Fuel Cell in Microgrids / <b>Musa Yılmaz</b>	<b>#235</b> Green Hydrogen The Innovation of Green Energy / <b>Syed Muhammad Ahmer Ali</b>
<b>12:15-12:35</b>	<b>Awards and Closing Ceremony</b>
<b>14:00-19:00</b>	<b>Sur İçi Cultural Trip</b>

PARALLEL SESSIONS	
HALL C	HALL D
<b>Session 7C: Energy, exergy and economic analyses-II</b>	<b>Panel Session</b>
<b>Chair: M. Ali Arserim</b>	<p><b>Challenges and Opportunities for The Region in the New Hydrogen Economy (This panel will be held in Turkish)</b></p> <p><b>Moderator:</b> <b>Adnan MİDİLLİ</b> İstanbul Technical University</p> <p><b>Panelists:</b> <b>Hüseyin DEVRİM</b> TEK-SİS, Türkiye</p> <p><b>Can ERKEY</b> Koç University, Türkiye</p> <p><b>Ali Rıza ARSLAN</b> Hydrogenix, Türkiye</p> <p><b>Ragıp KIZILTAŞ</b> TENMAK – Clean Energy Research Inst. (TEMEN)</p>
<b>#199</b> Solar Tracking Systems Applications in Planar Solar Panels / <b>Gizem Gül Katırcıoğlu</b> , Mehmet Daş and Ebru Akpınar	
<b>#208</b> Analysis and Assessment of a Biomass-Based Cogeneration System with Hydrogen-Fueled Gas Turbine / <b>Fatih Sorgulu</b> and Ibrahim Dincer	
<b>#142</b> Investigation of the Use of Carbon-Based Supports in the Catalytic Hydrolysis of Ethylenediamine Bisborane / <b>Bensu Naz Örs</b> , Gülay Özkan and Göksel Özkan	
<b>#197</b> Economic and Strategic Evaluation of Underground Hydrogen Storage Areas / <b>Hatice Karakilcik</b>	
<b>#228</b> Assessing the Environmental Footprint of Catalysts in Photoelectrochemical Hydrogen Production Through Life Cycle Analysis / <b>Ayşe Kocalmis Bilhan</b>	
<b>#57</b> One Step Towards a Green Future: Retrofitting of the Internal Combustion Engines for the Utilization of the Hydrogen Fuel / <b>Hilmi Ersin Oktar</b> , İbrahim Hakkı Tonyalı and Ahmet Hamit Apaydın	
<b>#101</b> Hydrogen Quality Effect to Generator Performance / <b>Kerim Kenan Kiremit</b>	



## Poster Session (Online)

<b>#8</b> Syngas Desulfurization following Microwave Cycled Gas Bubbling on Coal and Biomass Pyrolysis / Yildirim İ. Tosun and Fethullah Chichek
<b>#11</b> A System Design for CO <sub>2</sub> Capture with Hydrogen and Methanol Production in a Cement Plant / Ibrahim Akgun and Ibrahim Dincer
<b>#23</b> Biohydrogen and Biomethane Production Using An Integrated Bioelectrochemical and Anaerobic Digestion Reactor From Poplar and Cow Manure Wastes / Ahmet Faruk Kilicaslan, Aysegul Kara, Ibrahim Dincer and Ali Khalvati
<b>#36</b> Design of a Novel Solar-Based Sustainable Energy System with Energy Storage / Ayse Sinem Meke and Ibrahim Dincer
<b>#39</b> Electric Airplane Energy Storage and PEM Fuel Cell Island Airport Microgrid Load Frequency Control / Cem Haydaroglu
<b>#43</b> Design and Simulation of a Novel Copper-Chlorine Thermochemical Cycle for Hydrogen Production / Sibel Uygun Batgi and Ibrahim Dincer
<b>#62</b> Design of an Integrated Multigenerational Energy System for Oleic Acid and Hydrogen Production / Kubilay Karayel and Ibrahim Dincer
<b>#64</b> Electrolytic Hydrogen Production with Coaxial Cylinder Electrolyzers: A CFD Study / Mohamed M. Ismail and Ibrahim Dincer
<b>#65</b> Design and Analysis of a New Multigeneration System for a Hospital / Andre Bolt, Ibrahim Dincer and Martin Agelin-Chaab
<b>#74</b> An Integrated Plant for Urea and Ammonium Acetate Production Designed with Renewables / Zunayed Zakir Arnab and Ibrahim Dincer
<b>#91</b> Green Hydrogen Production System for A Village / Inci Eroglu, Harun Koku and Esra Gül Sendesen
<b>#92</b> Techno-Economic Analysis of Green Hydrogen Integration in Smart Grids: Pathways to Sustainable Energy Systems / Muhammad Raza Zaffar, Mohsin Raza Zaffar, Sulman Shahzad and Heybet Kilic
<b>#98</b> Case Study of a Self-Powered Building Using Hydrogen as an Energy Carrier / Inci Eroglu, Harun Koku and Mine Keles
<b>#117</b> Green Hydrogen: A Keystone in Pathways to Decarbonized Offshore Power Transmission - Technologies, Policies, and Future Directions / Yusuf Yurtsever, Jalal Sahebkar Farkhani and Heybet Kilic
<b>#125</b> Design and Theoretical-Economic Analysis of Hydrogen Storage Power System : The Case of Dicle University / Faruk Barlaz, Cem Haydaroglu, Yahya Akil and Heybet Kilic
<b>#143</b> Determining the Hybrid Energy Potential of Türkiye's Blue Homeland in the Aegean Sea / Soner Çelikdemir and Mahmut Temel Özdemir
<b>#144</b> Strategic Importance of Hydrogen within the Scope of Turkey's New Century Vision / Mehmet Fırat Doğan
<b>#180</b> A Recurrent Neural Network Model Predictive Control (RNN-MPC) Strategy for Efficient Energy Management in Hybrid Battery-Hydrogen Systems / Sulman Shahzad and Heybet Kilic
<b>#181</b> Model-Free Predictive Control of a Hydrogen Energy Nano Grid System / Sulman Shahzad and Heybet Kilic

## Poster Session (Online)

<b>#183</b> Green Hydrogen: Innovations, Challenges, and Opportunities in a Low-Carbon World / Sulman Shahzad and Heybet Kilic
<b>#187</b> Hydrogen and Hydrogen Technologies in Healthcare Institutions / Duygu Yıldırım, Cem Haydaroglu, Burak Yıldırım, Mahmut Temel Özdemir and Ozan Erdinc
<b>#203</b> Energy Management in Microgrids with Hybrid Energy Storage Systems Utilizing Batteries and Proton Exchange Membrane/Fuel Cells / ÖmerFaruk Özcan, Heybet Kilic and Ömer Faruk Özgüven
<b>#209</b> Investigation of the Photocatalytic Activity of Pd(0) NPs-Decorated Benzene Ring Doped Nanosheet g-C <sub>3</sub> N <sub>4</sub> (Pd@BD-g-C <sub>3</sub> N <sub>4</sub> ) in the Hydrolysis Reaction of Ammonia Borane / Halil İbrahim Önal and Feyyaz Durap
<b>#213</b> Power Flow Control for Renewable Energy Hydrogen based Dual Active Bridge used DC Microgrids / Heybet Kilic and Mehmet Emin Aske
<b>#214</b> Utilizing Battery-Super Capacitor Energy Storage for Hybrid Photovoltaic, Wind, and Fuel Cell Systems / Mehmet Emin Asker
<b>#215</b> Improving Power Quality in Microgrids with PEM Electrolyzer/Fuel Cell System / Heybet Kilic
<b>#222</b> Evaluation of Hydrogen Transportation by Trucks in terms of Occupational Health and Safety: A Preliminary Hazard Analysis / Mehmet Tunç and Ramazan Solmaz
<b>#223</b> Safety Risks in Solar-Hydrogen Energy System: Fine Kinney Risk Analysis / Mustafa Doğrubaş, Mehmet Tunç, İbrahim Yasin Erdoğan and Ramazan Solmaz
<b>#227</b> The Energy Trilemma Approach Assessment of Hydrogen Production Potential in Türkiye /Kadir Akgün, Bestami Özkaya and Fatma Zehra Küçük
<b>#229</b> Production of Black Phosphorus Doped Metal Chalcogen Hybrid Materials and Their Use in Photocatalytic Hydrogen Production / Ecem Demirel, Bahadır Keskin and Atif Koca
<b>#230</b> Small-Scale Electricity Generation with Biohydrogen using PEM Fuel Cell / Bugra Yilmaz, Barbaros Durmus and Muhsin Tunay Gencoglu
<b>#231</b> Integrated System Design that Produces Electricity with Solar, Wind, Hydrogen and Biomass Energy / Bugra Yilmaz and Muhsin Tunay Gencoglu
<b>#194</b> Classification of Organic and Recyclable Waste used in Green Hydrogen Production with Deep Learning Models / Hüseyin Fırat

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