

Sunday – May 25, 2025		
12:00 18:00	CONFERENCE REGISTRATION	
Monday – May 26, 2025		
07:30 09:00	CONFERENCE REGISTRATION	
09:00 09:30	<p><b>OPENING CEREMONY</b></p> <p><b>Can Ozgur Colpan</b>, <i>Congress Chair</i>  <b>Azize Ayol</b>, <i>Congress Chair &amp; Dean of Faculty of Engineering, Dokuz Eylul University</i>  <b>Bayram Yılmaz</b>, <i>Honorary Chair &amp; Rector of Dokuz Eylul University</i></p>	
09:30 09:50	<p><b>OVERVIEW TALK</b></p> <p><b>Ibrahim Dincer</b>, <i>President, National Hydrogen Association, Türkiye</i></p> <p><b>National Hydrogen Association and Critical Advantages of Hydrogen</b></p>	
09:50 10:20	<p><b>SPECIAL TALK</b></p> <p><b>Abdullah Bugrahan Karaveli</b>, <i>TENMAK President</i></p> <p><b>Türkiye's Long Term Energy Strategy and the Role of Hydrogen</b></p>	
10:20 10:40	Coffee Break	
KEYNOTE SESSION 1 Session Chair: TBA		
10:40 11:20	<p><b>Luigi Crema</b>, <i>Hydrogen Europe Research / Fondazione Bruno Kessler</i></p> <p><b>Overview on the European Research and Innovation in the Hydrogen Sector: Best Practices and Priorities</b></p>	EXHIBITION
11:20 12:00	<p><b>Adélio Mendes</b>, <i>University of Porto, Faculty of Engineering</i></p> <p><b>Given a North to the Energy Decarbonization</b></p>	
12:00 14:00	<b>LUNCH</b> ( <i>Lokal Çatı Restaurant, Dokuz Eylül University Rectorate</i> )	

**Monday – May 26, 2025**

**PARALLEL SESSIONS – 1**

	HALL A	HALL B	HALL C	HALL D	HALL E	
	<b>Session 1. Strategic Stakeholder Presentations</b>	<b>Session 2. Fuel Cells and Applications – I</b>	<b>Session 3. Sustainable Hydrogen Technologies – I</b>	<b>Session 4. Hydrogen Carriers – I</b>	<b>Session 5. Modeling, Simulation, and Optimization – I</b>	
	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	
	<b>Emre Yıldırım</b> <i>TENMAK, Türkiye</i>	<b>#146</b> "Development of Hydrogen Powered Ejection System for Air Platform" <i>T. Kala, H. Özcan, S. Çelik</i>	<b>#217</b> "Design and Analysis of a Biomass-Based Integrated Plant for Green Hydrogen Generation and Beneficial Commodities" <i>F. Yılmaz, M. Ozturk, R. Selbas</i>	<b>#134</b> "NH <sub>3</sub> Synthesis with Ca <sub>2</sub> NH Supported Ru Catalyst Under Mild Conditions" <i>T. A. Boyunueğri, J.T.S. Irvine, G. Irvine, S. Jowitt, O. Magdysyuk, H. Ünsal, A. Long</i>	<b>#241</b> "Machine Learning-Based Modeling and Performance Analysis of Solid Oxide Electrolysis Cells (SOECs)" <i>M. T. Dumaz, M. S. Akkuş</i>	
	Hydrogen Technologies and R&D Studies	<b>#230</b> "Optimized Event-Triggered Control for Enhancing Solid Oxide Fuel Cell Performance and Stability" <i>H. Kılıç, İ. Poyraz, M.E. Asker</i>	<b>#224</b> "Enhancement of Ionic Conductivity in Anion Exchange Membranes: Effect of Modified MOF Structures in PBI Membranes" <i>H. Altınışık, Y. Devrim</i>	<b>#165</b> "A Study on Fe-Zr/Al <sub>2</sub> O <sub>3</sub> Catalyst for Hydrogen Production via Sodium Borohydride Methanolysis" <i>E. Ertun, Ö. Şahin</i>	<b>#267</b> "Design and Performance Analysis of Hybrid Renewable Energy System with Hydrogen Storage: A Case Study In İzmir" <i>Y. A. Yıldız, Ş. E. Hayber</i>	
	Politic Documents and Calls for Energy Technologies	<b>#233</b> "Investigation of Carbon Felt Fabric as a Gas Diffusion Layer in PEM Fuel Cells: Stability and Coating Capability" <i>A. Şirin, J. H. Özdemir, O. K. Özdemir, N. Alp, M. Alp, E. Akarsu</i>	<b>#268</b> "Theoretical Insights into ZIF-71: Adsorption Potential for H <sub>2</sub> and H <sub>2</sub> S as well as Its Response to External Electric Field" <i>O. S. Sarısoy, Y. Gürdal</i>	<b>#196</b> "Various Metal Oxide Catalysts Supported on Al <sub>2</sub> O <sub>3</sub> for Hydrogen Generation from Alkaline NaBH <sub>4</sub> Solution" <i>S. Salt, H. Erdoğan, H. E. Figen, M. K. Elibol</i>	<b>#270</b> "Fuzzy Logic-Controlled Load Management in a Hybrid Microgrid with Fuel Cell, Wave, Solar, and Wind Power Integration" <i>S. Ataç, M. Güçyetmez</i>	
	TBA	<b>#234</b> "Investigation of Fuel Cell Performances by Recycling Used Membranes" <i>B. Aktaş, O. K. Özdemir, J. H. Özdemir</i>	<b>#287</b> "Applications of MWCNTs in HHO Dry Cell Technology" <i>M. K. Baltacıoğlu, O. Bulut, Ç. Conker</i>	<b>#216</b> "Investigation of the Activity of Composite Nanofiber Catalysts Synthesized by Electrospinning Technique for Hydrogen Production from Boron Fuels" <i>B. E. Ülgen, B. C. Filiz, A. K. Figen</i>	<b>#272</b> "H <sub>2</sub> Sorption Potential of ZIFs Revealed Through Grand Canonical Monte Carlo Simulations" <i>G. Tunç, Y. Gürdal</i>	
14:00	TBA	<b>#262</b> "Parametric Estimation and Performance Analysis of Direct Ethanol Fuel Cells and Lithium Batteries for Hybrid Energy Systems" <i>M. Y. Çelikdemir</i>	<b>#288</b> "Enhancing HHO Dry Cell Efficiency with Graphene-Supported Electrolytes" <i>M. K. Baltacıoğlu, O. Bulut</i>	<b>#223</b> "Borohydrides as a Hydrogen Source for Highly Selective Catalytic Methanol Production: Inside into Perovskite-Type Catalyst" <i>G. Özdemir, B. C. Filiz, F. N. Tekeli, A. K. Figen</i>	<b>#278</b> "Feature and LSTM-Based Capacity Prediction for Lithium-Ion Batteries: Application of Linear Regression and LSTM Models, with Future Expansion to Fuel Cell Datasets and Optimization" <i>S. Akkaya, M. Uyar</i>	
16:00	<b>Serdar S. Çelebi</b> <i>Armelsan Energy, Türkiye</i>	<b>#263</b> "An Innovative Approach to Determine Effective Variables on Fault Detection of PEMFCs" <i>M. Y. Çelikdemir, S. Çelikdemir</i>	<b>#289</b> "Metaheuristic Optimization of PID Controllers for Temperature Regulation in HHO Dry Cells" <i>C. Conker, M. K. Baltacıoğlu</i>	<b>#329</b> "Modification of MOF-235 with Graphene Oxide for Enhanced Hydrogen Production from Sodium Borohydride Hydrolysis" <i>R. Özdemir, D. Unlu</i>	<b>#284</b> "A Data-Driven DA-LSTM Approach for Predicting PEMFC Degradation Trends in Dynamic Load Conditions" <i>N. K. Ekmekçi, M. Uyar</i>	
	Innovative Blue Hydrogen Production from Gas Hydrate – Methane	<b>#282</b> "Synergistic Effects of Temperature, Gas Flow, and Clamping Force on Fuel Cell Performance" <i>B. Yılgin, F. G. B. San, C. Celik</i>	<b>#290</b> "Development of Dopamine Modified Graphene Oxide Doped Composite Anion Exchange Membranes" <i>N. G. Önel, Y. Devrim</i>	<b>#247</b> "Hydrogen Production via Methanolysis of Sodium Borohydride Using La <sub>2</sub> O <sub>3</sub> and La <sub>2</sub> O <sub>2</sub> CO <sub>3</sub> Nanowire Catalysts" <i>E. Engintepe, S. Bingöl, A. N. Akın</i>	<b>#308</b> "Mathematical Modeling and Simulation of an Anion Exchange Membrane Water Electrolyzer Using COMSOL Multiphysics" <i>A. Demirtaş, C. O. Colpan, Y. Devrim, Y. N. Atak</i>	
	TBA	<b>#355</b> "Hybrid Plus Electrodes for Improved Fuel Cell Performance and Durability" <i>A. C. Ince, W. Liyanage, S. Babu, U. Pasaogullari, J. Spindelowl</i>	<b>#275</b> "Preparation of Pyridine Polybenzimidazole / Amine Functionalized Boron Nitride Composite Membrane" <i>R. Akay, A. H. Ali, H. N. Arkali, G. Aktaş, Z. Pekdemir, E. Erünel</i>	<b>#252</b> "Synthesis and Characterization of Nanostructured La <sub>2</sub> O <sub>3</sub> -Based Catalysts for Hydrogen Production via NABH <sub>4</sub> Methanolysis" <i>E. Engintepe, S. Bingöl, A. N. Akın</i>	<b>#184</b> "Simulation and Analysis of Methane Thermal Decomposition in an Aerosol Flow Reactor" <i>I. Ekmekçi, I. Karabay</i>	
	<b>Ali Rıza Arslan</b> <i>Hydrogenix</i>					
	Evaluations about Hydrogen and BESS Vehicles					
	<b>Ornov Maulik</b> <i>Anton Paar</i>					
	Characterizing Metal Hydrides and their Hydrogen Storage Capacity					
	<b>Nurettin Tekin</b> <i>Kawasaki</i>					
	Hydrogen Road of Kawasaki Heavy Industries					
16:00	<b>Coffee Break (with Poster Session-1)</b>					
16:30						

EXHIBITION

Monday – May 26, 2025

PARALLEL SESSIONS – 2

	HALL A	HALL B	HALL C	HALL D	HALL E	
	<b>Session 6. Catalysts for Hydrogen Applications – I</b>	<b>Session 7. Hydrogen Vehicles and Mobility – I</b>	<b>Session 8. Combustion of Hydrogen and Fuel Mixtures – I</b>	<b>Session 9. Photocatalysis and Water Splitting</b>	<b>Session 10. Green Hydrogen Technologies</b>	
	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	
	<b>Invited Speaker</b> <b>Saim Özkar</b> Middle East Technical University, Türkiye	<b>#10</b> "Assessment of Metaheuristic Algorithms of Fuel Cell Vehicles: A Short Review" <u>O. Yasar, M.U. Karaoglan, C.O. Colpan</u>	<b>#113</b> "Numerical Simulations of Reacting Flows in Hydrogen Enriched Methane Blends and Pure Hydrogen Combustion" <u>H. Monteiro, L. Marcon, F. Oliveira, L. Vaz</u>	<b>#17</b> "Solid Solution Oxide Catalysts for Enhanced Visible-light-driven Hydrogen Evolution by Water Splitting" <u>T.P. Perng</u>	<b>#67</b> "Sustainable Energy Solutions: 3D Printed PLA-NiMo@Ag for Green Hydrogen Production" <u>B. Doğru Mert, H. Nazlıoğlu, G. Aksaray, M.E. Mert, M. Seydazvar, G. Kardaş</u>	
	<b>Recent Advances in Catalyzing the Hydrolytic Dehydrogenation of Ammonia Borane</b>	<b>#34</b> "Environmental Assessment of a Hybrid Ship Electrification System Integrating Molten Carbonate Fuel Cells, Battery, and Waste Heat Recovery" <u>O. Yuksek, E. Blanco-Davis, V. Shagar, A. Spiteri, D. Hitchmough, M.C. Di Piazza, M. Pucci, N. Tsoulakos, J. Wang</u>	<b>#136</b> "Effects of Hydrogen Enrichment and Gravity on Soot Formation in n-dodecane Laminar Diffusion Flames: A CFD Study" <u>A. Korucu</u>	<b>#164</b> "Green Synthesis of MnVS and Co-Doped MnVS Nanoparticles: Applications in Photocatalysis and Hydrogen Production via Methanolysis" <u>M. Çokyasa, Ö. Şahin, A. Ekinçi, O. Baytar</u>	<b>#70</b> "Application of Response Surface Methodology in Hybrid Green Hydrogen System Design and Optimization" <u>M. Güll, E. Akyüz</u>	
	<b>#190</b> "The Synthesis of Ni-Co-B Catalyst for Ammonia Borane Dehydrogenation" <u>L. Nas, R. Kiziltas, A. Koç, E. Yildirim</u>	<b>#59</b> "Numerical Investigation of Exhaust Emissions of Hydrogen-Diesel Dual Fueled Medium-Speed Marine Diesel Engine under Different Fumigated Hydrogen Mass Fractions" <u>E.F. Pehlivan</u>	<b>#176</b> "Non-Premixed Hydrogen Combustion for an Industrial Ceramic Furnace: A Numerical Analysis" <u>S. Yılmaz, T. Bayramoğlu, K. Bayramoğlu, A. Özarslan, B. Kılıç, A. Akbay</u>	<b>#205</b> "LaNiO <sub>3</sub> -Perovskite Type Photoelectrode Synthesis and Photoelectrochemical (PEC) Performance for Hydrogen Production" <u>B. Yıldırım, M. İ. Aydın, A. K. Figen</u>	<b>#71</b> "Spatial Multicriteria Decision-making for Green Hydrogen Production: A Case Study of Southern Marmara, Türkiye" <u>M. Güll, E. Akyüz</u>	
16:30	<b>#191</b> "Development of Rhodium-Based Catalyst for Ammonia Borane Dehydrogenation" <u>A. Koç, R. Kiziltas, I. Nas, E. Yildirim</u>	<b>#68</b> "Simulation of Wheeled and Tracked Fuel Cell Vehicles: A Comparative Study Using Proposed a New Tool Called PADSIP" <u>B. Acik, M.U. Karaoglan, Z.S. İşleyen</u>	<b>#319</b> "Predictive Modelling for Enhanced Petrol Engine Reliability with Petroleum and Hydrogen Fuels Mixture" <u>J. Matijošius, T. Žvirblis, A. Rimkus, U. Kale, A. Kilikevičius</u>	<b>#209</b> "Ga-Doped ZnO Coated Stainless Steel Electrodes for Photoelectrochemical Hydrogen Production" <u>S. Ayca, I. Dincer</u>	<b>#145</b> "Determination of Green Hydrogen Production Capacity by Wave Energy Prediction: Model Development with an Adaptive Hybrid Method" <u>M. Tan</u>	
18:45	<b>#81</b> "The Effect of Different Types of Metal Phthalocyanine on the Electrodecomposition of H <sub>2</sub> S to H <sub>2</sub> and Polysulfides" <u>F. Nazari, A. Sarioglan, M.S. Yazici</u>	<b>#72</b> "A Dual-Layered Control Strategy for Ultracapacitor/PEMFC Hybrid Systems in Micro-FCEVs" <u>A. Yılmaz, N. Aksoy, G. Bayrak</u>	<b>#344</b> "Bayesian Optimization Framework for Hosting Capacity Evaluation in Hydrogen-Electricity Integrated Networks" <u>S. Shahzad, H. Kilic</u>	<b>#303</b> "Design of a New Photonically Enhanced Electrolyser with ZnS Photocatalyst" <u>M. Gursov, I. Dincer</u>	<b>#149</b> "Solar Driven Green Hydrogen Production: TiO <sub>2</sub> @MOS <sub>2</sub> Nanocomposite Synthesis and Performance" <u>M. Yurdakul, B. Yıldırım, A.K. Figen</u>	
	<b>#84</b> "Nickel-Lanthanum Catalysts Supported on Silicon Carbide to Produce CO <sub>2</sub> -free Hydrogen and Valuable Carbons Under Microwave Energy" <u>H.P. Köse, D. Varışlı</u>	<b>#315</b> "Assessment of Hydrogen and Methanol as Alternative Fuels in the Shipping Industry" <u>S. A. Korkmaz, E. T. Livanos, S. Afshan</u>	<b>#31</b> "The Synergistic Effect of HHO Gas and Gasoline-Bioethanol Blends on Spark Ignition Engine Efficiency and Emissions" <u>A. Rimkus, E. Kozłowski, J. Matijošius, M. Zimakowska-Laskowska</u>	<b>#350</b> "Development of Stability and Efficiency of CsPbBr <sub>3</sub> Perovskite Solar Cells" <u>S. Tüzüner, O. Mahmood, Ş. Ela, A. Vomiero</u>	<b>#266</b> "MLP Hyperparameter Optimization and Price Prediction Models on Fuel-cell Stock Data: Stability and Performance Analysis" <u>S. Akkaya, Ş. E. Hayber</u>	
	<b>#85</b> "Development of Silicon Carbide Supported Nickel-iron Bimetallic Catalysts for Microwave-assisted Catalytic Methane Decomposition" <u>C. Acar, D. Varışlı</u>	<b>#76</b> "Hydrogen as the Key to Zero-Emission Maritime Trade: A 2050 Projection" <u>A. Sarı, E. Sulukan, D. Özkan, T.S. Uyar, B. Ekinçi</u>	<b>#36</b> "Effect of Hydrogen Addition on the Energy and Environmental Performance of a Compression Ignition Dual Biofuel Engine" <u>A. Rimkus</u>	<b>#39</b> "Machine Learning Analysis of Photocatalytic Hydrogen Production over Halide Perovskites" <u>B. Yılmaz, R. Yıldırım</u>	<b>#273</b> "Evaluation of Green Hydrogen Production Using Weibull and Gamma Distributions: Technical, Economic, and Environmental Perspectives" <u>Y. A. Yıldız, M. Güçyetmez</u>	
	<b>#86</b> "Cu-Btc Synthesis via Solvothermal and Microwave-assisted Methods: Characterization and Adsorbent Applications" <u>D. Dumlu, N. Ayas</u>	<b>#105</b> "An Optimization Model for Heavy-Duty Fleet Transition using Hydrogen Fuel-cell Vehicles" <u>F. Eser, Ş.İ. Satoğlu</u>	<b>#54</b> "Effects of Hydrogen Addition on Methane Fuel Reactivity in High-temperature CO <sub>2</sub> /O <sub>2</sub> /N <sub>2</sub> Coflow in a Non-premixed Lab-scale Tube Burner" <u>M.K. Büyükkakın</u>	<b>#276</b> "Understanding the Kinetic Mechanism of WO <sub>3</sub> Photoanodes for PEC Applications" <u>E. I. Haznedar, F. Uçar, E. Ardalı, E. Altuntaş, S. Kaya</u>	<b>#340</b> "Boosting the Performance of Layered Titanate in Photocatalytic Water Splitting" <u>E. Doustkhah</u>	
	<b>#124</b> "Enhanced Alcohol Oxidation in Acidic and Alkaline MEADIA Using Pt-Modified Nickel Layered Double Hydroxide Supported on Multiwall Carbon Nanotubes and Carbon Black Surfaces" <u>S. Saipanya, J. Jakmunee, L. Fang</u>		<b>#55</b> "Experimental and Numerical Study of a Low Nox Emissions Gas Turbine Combustor for NH <sub>3</sub> /H <sub>2</sub> Mixture with Mild Combustion at High Pressure" <u>M.K. Ansari, S. Kumar</u>	<b>#193</b> "Performance Assessment of Low-Cost Transition Metal-Based Electrode and Catalyst for Photoelectrochemical and Photocatalytic Hydrogen Generation" <u>M. Ayoub, I. Dincer</u>	<b>#135</b> "Green Hydrogen Production in Energy Islands" <u>N. Yabar, C. Haydaroglu, A.N. Akpolat, H. Kılıç</u>	
19:00	<b>Welcoming Reception (Foyer)</b>					
20:30						

EXHIBITION

Tuesday – May 27, 2025

PARALLEL SESSIONS – 3

08:30 09:00					
Conference Registration					
HALL A	HALL B	HALL C	HALL D	HALL E	EXHIBITION
<b>SPECIAL SESSION</b> Membrane Technologies in H <sub>2</sub> Production, Separation, and Utilization - I Session Chair: TBA	<b>Session 11. Catalysts for Hydrogen Applications – II</b> Session Chair: TBA	<b>Session 12. Combustion of Hydrogen and Fuel Mixtures – I</b> Session Chair: TBA	<b>Session 13. Hydrogen in Smart Grids and Microgrids</b> Session Chair: TBA	<b>Session 14. Hydrogen Safety</b> Session Chair: TBA	
<b>Adele Brunetti</b> <i>National Research Council – Institute on Membrane Technology, Italy</i>	<b>#231</b> "Electrodeposition of Highly-Efficient Iron-Ruthenium Alloy Cathodes for Hydrogen Evolution Reaction in Alkaline Solutions" <u>D. Kutyla</u>	<b>#177</b> "Numerical Investigation of the Effect of the Co-Combustion of Hydrogen and Natural Gas on Temperature and Carbon Emissions in Ceramic Furnace" <u>B. Kılıç, K. Bayramoğlu, S. Yılmaz, T. Bayramoğlu, A. Özarslan, A. Akbay</u>	<b>#40</b> "Use of Conventional and Renewable Energy in Türkiye's Hydrogen Supply Chain: A Grid-based Risk Assessment" <u>H. Kırış, M.G. Güler, Ö.N. Bilişik</u>	<b>#44</b> "Hydrogen Detection and Electrical Properties of Perovskite BaTiO <sub>3</sub> Schottky Diode" <u>L.B. Tasyurek, H. Karakurt, N. Kilinc</u>	
<b>Lecture 1: Sustainable E-fuel Production: Catalytic and Photocatalytic Membrane Innovations</b> <b>Torsten Brinkmann</b> <i>HEREON – Institute of Membrane Research, Germany</i>	<b>#237</b> "Electrodeposition of Nanocone-Shaped Ni–Pt Alloys for Enhanced Electrocatalytic Activity in Alkaline Solutions" <u>D. Kutyla</u>	<b>#185</b> "Investigation of NO <sub>x</sub> Reduction by NH <sub>3</sub> -SCR In Aftertreatment System for H <sub>2</sub> Internal Combustion Engine" <u>T. B. Sarı, S. E. Bozbağ, D. Ş. Yıldız, C. Erkey</u>	<b>#101</b> "Integration and Real-Time Dynamic Simulation of a PEM Fuel Cell in Grid-Connected Systems" <u>E. Dursun, S.V. Nese, P. Gomez, I.A. Qader</u>	<b>#51</b> "Spin Polarized Dichalcogenide Alloy for Selective Adsorption of Gases" <u>A.I. Avesh</u>	
<b>Lecture 2: Membranes in Hydrogen Technology – More than just Hydrogen Separation</b>	<b>#244</b> "Cobalt Doped Platinum-Cellulose-Carbon Aerogel Prepared by Supercritical Deposition as Electrocatalyst for Hydrogen Evolution Reaction" <u>A. Alsuhile, P. S. Pein, B. Schroeter, I. Smirnova, C. Erkey</u>	<b>#207</b> "Probative Assessment of Hydrogen Enriched Methane Induction in Gasoline Direct Injection Engine for Homogeneous Stoichiometric Lean Mixture Formation" <u>E. G. Varuvel, J. Stanley, L. J. Martin</u>	<b>#213</b> "Innovative Hybrid Optimized Takagi Sugeno Type III Fuzzy-Based Voltage–Frequency Controller for Fuel Cell Integrated Isolated Microgrid" <u>Ö. F. Özcan</u>	<b>#52</b> "Evaluation of Deformation via in situ SEM and EBSD on Hydrogen Embrittlement" <u>S.H. Nahm, H.S. Yun</u>	
<b>Ivana Perović</b> <i>Vinca Institute of Nuclear Sciences, Serbian National Institute, Serbia</i>	<b>#254</b> "Investigation of the Effect of Tween Surfactant on Catalytic Performance and Structural Properties in the Electrochemical Deposition of Platinum" <u>J. H. Özdemir, A. K. Figen, O. K. Özdemir</u>	<b>#311</b> "CFD-Based Thermal and Emission Analysis of a 2D Hydrogen-Fueled Combustor Using Real Engine Data at Cruise Altitude" <u>Y. F. Görgülü, S. Ekici, T. H. Karakoc</u>	<b>#214</b> "Hybrid Optimization Fuzzy Logic Type 3 Based MPPT Control for Fuel Cell" <u>Ö. F. Özcan, H. Kılıç, Ö. F. Özgüven</u>	<b>#127</b> "HAZOP and Fault Tree Analysis of Ammonia Leakage in a Ship's Ammonia Fuel System" <u>B. Zincir, B.A. Zincir</u>	
<b>Lecture 3: Advances in Electrochemical Catalysts for Enhanced Hydrogen Production in Membrane Reactors</b> <b>Antonio Vita</b> <i>National Research Council – Institute of Advanced Technologies for Energy, Italy</i>	<b>#277</b> "H <sub>2</sub> Evolution Reaction Pathways of Cobalt Based Molecular Catalysts Investigated by AB-initio Simulations" <u>Y. Gurda</u>	<b>#312</b> "Combustion and Emission Behavior of a Hybrid Ammonia–Jet-A Blend Under Real Jet Engine Operating Conditions" <u>Y. F. Görgülü, S. Ekici, T. H. Karakoc</u>	<b>#228</b> "Enhancing Longevity of Hydrogen-Powered Electric Vehicles, an Adaptive Neuro Fuzzy Control-Based High-Gain, Low-Stress Power Converter" <u>M. Özden, D. Ertekin, K. Baltacı</u>	<b>#271</b> "SiC Schottky Diodes: Electrical Characterization and Gas Sensor Applications" <u>L. U. Kendirli, L. B. Taşyürek, N. Kiliñç</u>	
<b>Lecture 4: 3D-printed Ni-alloy based Structured Catalysts with Locally Tuned Porosity and Shape for Process Intensification of Ammonia Synthesis and Decomposition</b> <b>David Alique</b> <i>Rey Juan Carlos University of Madrid, Spain</i>	<b>#98</b> "Next-Gen Energy Catalysis: MXENE-Based Composites for High-Impact Hydrogen Evolution Reaction" <u>D. Onaylı, D.Ö. Özgür</u>	<b>#302</b> "An Alternative Fuel for Afterburner: Energy and Economic Comparison for NH <sub>3</sub> /H <sub>2</sub> and JP-8" <u>E. Oğur, A. Koç, H. Yağlı, Ö. Köse, Y. Koç</u>	<b>#229</b> "Design and Implementation of Pseudo Levenberg-Marquardt Learning Artificial Neural Network Controller for Power Conversion in Fuel Cell to Battery Charging Systems, Improving Power Efficiency and Reliability" <u>M. Özden, D. Ertekin, K. Baltacı</u>	<b>#291</b> "Systematic Risk Analysis for Hydrogen Fuel Cell Vehicles and Safety Management in Fuel Cells" <u>N. Özarslan, B. Tanç</u>	
<b>Lecture 5: Towards the Industrialization of Pd-based Membranes Synthesis for Hydrogen Applications: Continuous Flowing Electroless Pore-Plating</b>					
10:30 10:50					
Coffee Break (with Poster Session-2)					
KEYNOTE SESSION 2 Session Chair: TBA					
10:50 11:30					
John T. S. Irvine, University of St. Andrews					
Interfacial Engineering in Solid Oxide Cells					
Eileen Yu, University of Southampton					
11:30 12:10					
An Electrolysis and Microbial Electrochemical Hybrid System for Hydrogen Production and Wastewater Treatment					
12:10 14:00					
LUNCH (Lokal Çatı Restaurant, Dokuz Eylül University Rectorate)					



**Tuesday – May 27, 2025**

**PARALLEL SESSIONS – 4**

	HALL A	HALL B	HALL C	HALL D	HALL E		
	<b>SPECIAL SESSION</b> <b>Membrane Technologies in H<sub>2</sub> Production, Separation, and Utilization - II</b> <b>Session Chair: TBA</b>	<b>Session 15. Fuel Cells and Applications – II</b>  <b>Session Chair: TBA</b>	<b>Session 16. Catalysts for Hydrogen Applications – III</b>  <b>Session Chair: TBA</b>	<b>Session 17. Hydrogen Economy, Infrastructure, and Policy – I</b>  <b>Session Chair: TBA</b>	<b>Session 18. Gasification and Reforming Technologies</b>  <b>Session Chair: TBA</b>		
	<b>Giuseppe Barbieri</b> <i>National Research Council – Institute on Membrane Technology, Italy</i>  <b>Lecture 6: Revolutionizing Syngas and Biogas Valorization: Advanced Membrane Gas Separation for CO<sub>2</sub> and H<sub>2</sub> Recovery</b> <b>Simona Liguori</b> <i>Atılım University, Türkiye</i>  <b>Lecture 7: Engineering a Paradigm Shift in How We Think About Reactors: Metallic Membranes for Highly Intensified Hydrogen Production</b>	<b>#12</b> "Development of Operation Strategies for Improving Polymer Electrolyte Membrane Fuel Cell System Water Management and Hydrogen Circulation" <u>J. Bae, H. Park, I.J. Son, S. M. Park</u>  <b>#24</b> "A-site Deficient La <sub>0.4</sub> Ca <sub>0.4</sub> Ti <sub>0.995</sub> Pt <sub>0.005</sub> O <sub>3</sub> with Low Pt Substitution as an Oxygen Reduction Electrocatalyst for Fuel Cell Applications" <u>S. Ozkan, S.Kim, J.T.S. Irvine</u>  <b>#32</b> "Analysis of MgCr <sub>2-x</sub> Mn <sub>x</sub> O <sub>4</sub> (X=0.1/0.5/1) Spinel and LSM Composite Coatings as a Protective Layer for SOFC Interconnect" <u>H. Unsal, C.D. Savaniu, J.T.S. Irvine</u>	<b>#163</b> "NASICON (Na <sub>3</sub> NiCo <sub>2</sub> (PO <sub>4</sub> ) <sub>2</sub> (SO <sub>4</sub> ) <sub>2</sub> ) Doped Polyaniline as a New Candidate Electrocatalyst in Hydrogen Evaluation Reaction" <u>S. M. Yilmaz, A. K. Figen</u>  <b>#181</b> "Development of Ce-Promoted Ni-Based Methanation Catalysts for Enhanced CH <sub>4</sub> Production" <u>B. Acar, B. S. Çağlayan, A. E. Aksoylu</u>  <b>#182</b> "A Mechanistic Drifts-MS Investigation and Active Intermediate Determination of DRM at Low Temperature over Ru-La/ZrO <sub>2</sub> Catalyst" <u>O. Ordulu, A. Uzun, C. Öztepe, B. M. Eropak, B. S. Çağlayan, A. E. Aksoylu</u>  <b>#183</b> "Operando Drifts Investigation of Active Intermediates in CO <sub>2</sub> Methanation over Ni-La/γ-Al <sub>2</sub> O <sub>3</sub> Catalysts Under Low H <sub>2</sub> /CO <sub>2</sub> Feed Ratios" <u>C. Öztepe, O. Ordulu, A. Uzun, B. M. Eropak, B. S. Çağlayan, A. E. Aksoylu</u>	<b>#83</b> "Hydrogen Fuel Viability in EU Maritime Transport with Emissions and Policy Implications" <u>B.A. Zincir, B. Zincir</u>  <b>#97</b> "Planning And Managing Renewable Gas Integration in the Portuguese Natural Gas Network" <u>F. Machado, L. Fernandes, L. Marcon</u>  <b>#155</b> "Design of a Future Hydrogen Supply Chain Under Carbon Emission Constraints: The Case Study of Central Anatolia" <u>T. Ulusoy, A. Döyem, M.G. Güler</u>  <b>#173</b> "Impact of Transportation Constraints on Hydrogen Supply Chain Performance of Türkiye" <u>B. Türkalı-Özbek, A. Erdoğan, M. G. Güler</u>  <b>#187</b> "Green Energy Transition in Data Centers: The Economic Perspective of Hydrogen Use at Dicle University" <u>C. Haydaroğlu, M. Taban, F. Barlas, H. Kılıç</u>  <b>#227</b> "The Role of Hydrogen Energy in Net Zero City Strategies" <u>M. T. Baltalı, M. Ö. Baltalı</u>  <b>#256</b> "A Comparison of Systemic Performance: The Framework Models of Hydrogen Strategies in (Inter)National Energy Policies for Clean Energy Transition" <u>E. Gürler, A. G. Akdeniz, Y. Ateş, A. R. Boynueğri</u>  <b>#356</b> "A Novel Framework of Synergistic Hydrogen City Design for Urban Decarbonization and Net-Zero Energy Autonomy" <u>A. Abu-Rayah</u>	<b>#73</b> "Hydrogen from Bio-oil: Thermodynamic Insights on Steam Reforming Technologies" <u>P.J. Megia, C. Rocha, A.J. Vizcaino, A. Carrero, J.A. Calles, L.M. Madeira, M.A. Soria</u>  <b>#87</b> "Steam Reforming of Sugar Beet Pulp with Dolomite-Based Ni-La Catalyst" <u>S. Karadeniz, T.K. Kanatlı, N. Pourmoghadam, N. Ayas</u>  <b>#195</b> "In Situ Characterization of Pt-Re-Na/CeO <sub>2</sub> System and Operando Analysis of WGS Mechanism on its Sites by FTIR-DRIFTS-MS" <u>B. M. Eropak, A. Uzun, B. S. Çağlayan, A. E. Aksoylu</u>  <b>#215</b> "Transfer Learning from Steam and Dry Reforming of Methane to Tri-Reforming of Biogas for Syngas Production" <u>R. Yıldırım, A. Coşgun, M. E. Günay</u>  <b>#248</b> "A Simulation Study for Hydrogen Production from Low Rank Turkish Lignite Through Gasification in Trijen Pilot Plant in Soma" <u>Ö. Ö. Er, G. Kavas, M. Ünsal, A. S. Kartay, N. Ünlü, E. Muşdu, Ö. Ateş</u>  <b>#259</b> "Thermal Modelling of Autothermal, Steam, and Partial Oxidation Solid Oxide Fuel Cell Reformers" <u>M. T. Çoban, H. Genceli, M. Asker, O. E. Turgut, M. S. Turgut</u>  <b>#294</b> "Experimental and Theoretical Study of an Active Ni Nanocatalyst for the Hydrolysis of Sodium Borohydride and Dimethylamine Borane" <u>E. Karabulut, M. S. İzgi, E. Onat, S. Faal, F. A. Çelik, Ö. Şahin</u>  <b>#347</b> "Sewage Sludge and MSW Gasification for Hydrogen Production: Integrating Renewable Energy with Desalination and Agriculture" <u>O. Tezer, A. Ayol</u>		
14.00 16.00	<b>Yılser Devrim</b> <i>Vinca Institute of Nuclear Sciences, Serbian National Institute, Serbia</i>  <b>Lecture 8: Enhancing Hydrogen Technologies with Polybenzimidazole (PBI) Membranes</b>  <b>Kamran Ghasemzadeh</b> <i>University of Edinburgh, United Kingdom</i>  <b>Lecture 9: In situ Hydrogen Production, Utilisation and CO<sub>2</sub> Valorisation for Fuel Production by Membrane Reactor Technology</b>  <b>Gabriel Bernardo</b> <i>University of Porto, Portugal</i>  <b>Lecture 10: Carbon Molecular Sieve Membranes for the Purification of Hydrogen</b>	<b>#96</b> "Effect of Raw Gas from Biomass Gasification on the Reversible Molten Carbonate Fuel Cell Electrodes" <u>D. Yıldız, C. Lagergren</u>  <b>#102</b> "Experimental Analysis of Reversible Solid Oxide Cells Performance Degradation from Varying Power Ratios and Switching Frequencies in Operation" <u>N. Ali, G. Loreti, D. Pumiaglia, Y.De Pra, L.D. Seta, V. Cigolotti, G. Monteleone, D. Borello</u>  <b>#109</b> "Investigation of LSC-Based Composite SOFC Cathode Layers by ESD Coating Method" <u>E. Ergeç, S. Akkurt</u>  <b>#110</b> "Experimental Study on Regenerative Fuel Cell Performance: Electrolyzer and Fuel Cell Mode Analysis" <u>M.A. Kesercioğlu, F.G. Boyacı San, N. Sözbir, Y. Çay</u>  <b>#111</b> "Performance Optimization and Design Advancements of Proton Exchange Membrane Fuel Cells for Portable Energy Applications" <u>A. Algherbawi, S. Ekici</u>	<b>#170</b> "Influence of pH on Nickel Oxide Nanoparticles Synthesized via an Accessible Sol-Gel Method for Efficient Hydrogen Evolution Catalysis" <u>E. Vázquez-Vázquez, M. Hernández-Rodríguez, O. S. Feria, O. E. Cigarroa-Mayorga</u>  <b>#154</b> "Preparation of Zinc and Cobalt with Boron Doped Nickel Electrodes for Alkaline Electro-catalytic Hydrogen Production Activities" <u>A.D. Tümer, C. Demir, B. C. Filiz</u>  <b>#226</b> "High-Entropy NiCoCuFeMnOx Oxide Thin Films Deposited via Open-Air Pulsed Laser for Efficient Electrocatalytic Oxygen Evolution Reaction" <u>H. Mahdavi, A. A. Alamdari, U. Ünal, H. Jahangari</u>				
16:00 16:30	<b>Coffee Break (with Poster Session-3)</b>						

EXHIBITION

**Tuesday – May 27, 2025**

**PARALLEL SESSIONS – 5**

	HALL A	HALL B	HALL C	HALL D	HALL E	
	<b>WORKSHOP</b> <b>Innovations on Hydrogen-based Processes &amp; Technologies</b> Session Chair: TBA	<b>Session 19. Electrolysis and Electrolyzer Technologies – I</b> Session Chair: TBA	<b>Session 20. Hydrogen Storage Systems – I</b> Session Chair: TBA	<b>Session 21. Renewable Hydrogen Technologies and Integration</b> Session Chair: TBA	<b>Session 22. Hydrogen Use in Industrial Applications</b> Session Chair: TBA	
	<b>Alberto Figoli</b> <i>National Research Council – Institute on Membrane Technology, Italy</i>	<b>#78</b> “Dynamic Modeling of an Anion Exchange Membrane Electrolyser” <u>S. Obut</u>	<b>#6</b> “Numerical Study of Novel Thermal Management Methods for Hydrogen Storage in a Metal Hydride Reactor” <u>F. Selimefendigil, G. Şenol, H.F. Öztop</u>	<b>#8</b> “Solar Thermochemical Hydrogen Generation with a 250-kW structured reactor: Experiences from Tests at the Jülich Solar Tower” <u>T. Fend, V.K.Thanda, J. Lampe, S.Menz, S.Schmitz, G.Piesche, S.Berger</u>	<b>#133</b> “Optimizing Energy Investments for Growing Demand of Türkiye: Hydrogen-Based Batteries and Renewable Integration” <u>A.O. Kabil, M.G. Güler</u>	
	<b>Operational Plan for Hydrogen Research, POR H<sub>2</sub> – EU/NextGeneration EU – Program Agreement MASE/ENEA PNRR</b>	<b>#305</b> “Electrolysis-Based Hydrogen Production Using Coaxial Cylindrical Electrodes with a Scrubber-Wire Cathode” <u>D. Erdemir, A. Y. G. Kara, I. Dincer</u>	<b>#16</b> “FEM Based Numerical Study of Hybrid Nanofluid Enhanced Hydrogen Absorption in a Metal Hydride Reactor” <u>F. Selimefendigil, G. Şenol, H.F. Öztop</u>	<b>#50</b> “Securing Geothermal Energy Projects: Hydrogen Production and Underground Storage as a Solution for Electricity Market Fluctuations” <u>H. Aydın, S. Mery</u>	<b>#232</b> “Designing a Multiple Production System Based on CO <sub>2</sub> Capture and Utilization in Glass Industry” <u>I. Akgun, I. Dincer</u>	
	<b>Selmiye Alkan Gürsel</b> <i>University of Sabanci, Türkiye</i>	<b>#144</b> “Enhanced PEM Water Electrolysis with Low Equivalent Weight Aquivion® Membranes” <u>F. Giacobello, S. Siracusano, M.A. Mancuso, V. Ciccio, A. Muscolino, A.S. Arico</u>	<b>#35</b> “Statistical Analysis of Hydrogen Storage on Boron Materials via Machine Learning” <u>A. Stif, E.C. Özcan</u>	<b>#77</b> “AI-Based Optimization of a PV-Battery-Electrolyzer System for Green Hydrogen Production” <u>A. Yilmaz, N. Aksoy, G. Bayrak</u>	<b>#281</b> “Theoretical Investigation of Using of Hydrogen and Natural Gas Blending in Slab Tundish Heating Systems for Green Steel Revolution” <u>H. T. Arat, M. K. Baltacıoğlu, S. M. Has</u>	
	<b>The Hydrogen Valley Project of Türkiye: HYSouthMarmara Hydrogen Shore</b>	<b>#90</b> “Green Hydrogen Production through AEM Electrolysis Technology” <u>V. Ciccio, S. Siracusano, S.C. Zignani, M. Pascale, A.S. Arico</u>	<b>#116</b> “Influence of the Technology for Obtaining IMC of The Mg-7%Ni-3%Ce System on the Evolution of Phase Transformations” <u>N. Ukhamedova, A. Miniyazov, Z. Ospanova, A. Sabyrtaeva, K. Shaikieva</u>	<b>#192</b> “Performance Assessment of Hydrogen Production from Geothermal-Solar Based ORC System” <u>Y. N. Atak</u>	<b>#358</b> “Solar-based Green Hydrogen Production for Decarbonizing Natural Gas: An Emissions Perspective” <u>H. Sahin</u>	
	<b>Jan Veres</b> <i>Technical University of Ostrava, Czech Republic</i>	<b>#91</b> “MOS <sub>2</sub> -Based Catalyst for Hydrogen Production in PEM Electrolysis” <u>M.A. Mancuso, S. Siracusano, F. Giacobello, V. Ciccio, A. Muscolino, A.S. Arico</u>	<b>#118</b> “Integrating Metal Hydride-based Hydrogen Storage Tank with a PEM Fuel Cell Stack for Enhanced Energy Efficiency in Underwater Applications” <u>B. Sezgin, T. Öztürk, İ. Eroğlu</u>	<b>#218</b> “Development and Assessment of a Solar Energy-Based Multigeneration Plant Integrated with a Hydrogen Generation Unit for Clean Products” <u>E. Yilmaz, Y. E. Yuksel, M. Ozturk</u>	<b>#322</b> “Production and Characterization Sulfonated Polyphenyl Sulfone PEM Membrane for Vanadium Redox Battery” <u>E. Çolak, S. Kahraman, B. Çetin, D. Ünlü, E. Nigiz</u>	
	<b>Research Excellence for Region Sustainability and High-Tech Industries, REFRESH – International Project</b>	<b>#100</b> “Rapid and Scalable Synthesis of 3D Gas Diffusion Electrodes for AEM Water Electrolysers” <u>F. Lisi, R. Viscardi, I. Gualandi, E. Scavetta, F. Mariani, A. Fasolini, F. Basile</u>	<b>#119</b> “Preparation of Pd/Ni Foam Catalyst and Its Catalytic Performance for Hydrogen Production by Hydrolysis of Ethylenediamine Bisborane Solution” <u>Q.S. Anqi, G. Özkan, G. Özkan</u>	<b>#236</b> “The Evaluation of Renewable Energy Alternatives in Hydrogen Supply Chain in Türkiye Using Hybrid Fermatean Fuzzy AHP-WPM Approach” <u>H. Kırış, Ö. N. Bilişik</u>	<b>#115</b> “Hydrogen Integration and Energy Management in the Textile Industry” <u>V. Jayakumar, R. Deepan Hendry, S. Dhakshamoorthy, M. Jaqan</u>	
	<b>Vivina Cigolotti</b> <i>National Agency for New Technologies, Energy and Sustainable Economic Development, Italy</i>	<b>#120</b> “Text-mining and Bibliometric Analyses for Proton Exchange Membrane Electrolysers” <u>A. Firtin, A. Yilmaz, İ. Eroğlu, R. Yıldırım, D. Eroğlu</u>	<b>#122</b> “Role of Hydrogen Adsorption and Desorption in Underground Storage Within Coal Seams” <u>Ö. İmir, Ş. Mery, A. Fişne</u>	<b>#306</b> “An Experimental Investigation for Improved Hydrogen Production from Magnesium-Seawater Reaction” <u>Y. Hafez, I. Dincer</u>	<b>#206</b> “Utilization of a Boron Co-Doped Activated Carbon/Starch Based Metal-Free Biocathode for Hydrogen Production” <u>A. T. Goren, I. Dincer</u>	
	<b>Driving Innovation Towards Future Aviation with Cutting-Edge Refuelling Technologies and Processes ALRIGH2T – EU Project</b>	<b>#130</b> “Synthesis of New Polystyrene Based Anion Exchange Membrane for Alkaline Electrolyzer” <u>L. Başat, M. Farsa, G. Kardaş</u>	<b>#199</b> “Activated Charcoal for Sustainable Solid State Hydrogen Storage by Physical Adsorption” <u>A. Capoglu, I. Dincer</u>	<b>#307</b> “Application of Synthesized Ammonium Formate as an Electrolyte in Stainless Steel-Stainless Steel Electrode H-Cell Configuration” <u>C. G. Turk, I. Dincer</u>		
	<b>Krzysztof Kapusta</b> <i>Clean Coal Technology Centre – Centre for Climate and Renewable Energy Research, Poland</i>					
	<b>Development of H<sub>2</sub> Oriented Municipal Waste Refinery Based on a Novel Borehole Gasification Process Combined with Advanced Gas Separation Techniques, HYDROMINE – EU Project</b>					
	<b>Alessandra Beretta</b> <i>Politecnico di Milano, Italy</i>					
	<b>EMERALD – A Novel Electrified Reactor with Radial Current and Flow for the Intensification of Endothermic Catalytic Processes Research Project Funded by Air Liquide</b>					
16:30 18:30						<b>EXHIBITION</b>
19:00 21:00	<b>Banquet</b> (Lokal Çatı Restaurant, Dokuz Eylül University Rectorate)					

**Wednesday – May 28, 2025**

**PARALLEL SESSIONS – 6**

08:30 08:45		Conference Registration				
08:45 10:45		<b>HALL A</b>	<b>HALL B</b>	<b>HALL C</b>	<b>HALL D</b>	<b>HALL E</b>
		<b>Session 23. Hydrogen Economy, Infrastructure and Policy – II</b>	<b>Session 24. Hydrogen Vehicles and Mobility – II</b>	<b>Session 25. Fuel Cells and Applications – III</b>	<b>Session 26. Thermodynamics of Hydrogen Energy Systems</b>	<b>Session 27. Sustainable Hydrogen Technologies – II</b>
		<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>
		<p><b>Invited Speaker</b>  <b>Tareq Al-Ansari</b>                      Qatar Environment and Energy Research Institute</p> <p><b>Role of Hydrogen in the Energy, Water and Food Nexus</b></p> <p><b>#359</b> "A Policy on H<sub>2</sub>/SAF Valley in Türkiye" <u>A. Midilli</u></p> <p><b>#255</b> "Hydrogen Value Chains in Positive Energy Districts: A Multi-Level Analysis on the Dynamics between Energy Transition Plans and Integrated Spatial Planning" <u>A. G. Akdeniz, E. Gürler, Y. Ateş, A. R. Boynueğri</u></p> <p><b>#253</b> "Critical Path Analysis for a Future Hydrogen Supply Chain: A Case Study for Central Anatolia" <u>M.G. Gürler, T. Ulusoy, A. Döyen, F. Kosanoğlu</u></p> <p><b>#260</b> "Determining the Hydrogen Pipeline Route in Türkiye for Sustainable Energy Transition Between Asia and Europe Using Hybrid Optimization" <u>M. T. Özdemir, S. Çelikkemir</u></p> <p><b>#265</b> "Optimizing Hydrogen Refueling Infrastructure in Qatar: A Maximum Coverage Location Model Approach" <u>C. Mendeş, R. Baldacci, M. Contestabile, Y. Bicer</u></p> <p><b>#310</b> "Techno-Economic Analysis of Green Hydrogen Production: Investigating Hybridization Potential in İzmir" <u>E. D. Güllay, C. O. Colpan, M. A. Ezan</u></p>	<p><b>#174</b> "Mathematical Modeling and Ground Tests of a Fuel Cell Hybrid Unmanned Aerial Vehicle in Cruise Phase" <u>M. Azer, M. U. Karaoğlu, C. O. Colpan, T. H. Karakoc</u></p> <p><b>#188</b> "Comparative Life Cycle Carbon Emissions Assessment of Utilizing Diesel Oil and Hydrogen Fuel on a Ferry" <u>O. Konur, M. E. Aydın, M. S. Aydın</u></p> <p><b>#204</b> "High Voltage Gain LLC Resonant Converter Design for Energy Transfer from Fuel Cell Electric Vehicle to Electric Vehicle" <u>M. Akkuş, E. Akboy, A. R. Boynueğri</u></p> <p><b>#211</b> "Investigation of T-Class Fuel Cell Hybrid Electric Off-Road Vehicle" <u>Z. S. İşleyen, M. U. Karaoğlu</u></p> <p><b>#221</b> "Performance Analysis of a Small Hybrid Vehicle on Inclined Roads Under WLTP Class 2 Drive Cycle" <u>B. Yılmaz, C. O. Colpan</u></p> <p><b>#225</b> "Uninterrupted Communication with PEMFC-Enhanced UAVs in Disaster Scenarios" <u>M. Kayaoğlu, S. Unal, B. Calisir</u></p> <p><b>#251</b> "Design of a Standalone Electric Vehicle DC Fast Charging Station Based on a Hybrid Energy System with Fuel Cell and PV for a Tourist Resort" <u>M. Yıldırım, S. Unal</u></p> <p><b>#314</b> "Numerical and Experimental Investigation of Electric and Fuel Cell Hybrid Mini UAV" <u>İ. Sağlam, Z. İşleyen, M. Karaoğlu, Ş. Yavuz</u></p>	<p><b>#125</b> "Development of Flat-Tubular Solid Oxide Fuel Cells via Mold Casting" <u>K. Bilgili, Ç. Timurkutluk, S. Onbilgin, B. Timurkutluk</u></p> <p><b>#129</b> "Microtubular Solid Oxide Fuel Cells with Ytterbium Doped Zirconia Electrolytes" <u>Ç. Timurkutluk, E. Yıldız, G. Gemen Tutaş, S. Onbilgin, B. Timurkutluk</u></p> <p><b>#132</b> "Lightweight and Optimized End Plates for PEM Fuel Cells: A Comparative Structural Analysis" <u>F. Çetiner, A.E. Kılıç, S. Çelik, S. Toros, R.E. Ece</u></p> <p><b>#142</b> "Developing And Designing Different Channel Types for Micro Direct Methanol Fuel Cells Based on Mitochondria Cell Structure" <u>M. Menteş, A.E. Kılıç, S. Çelik, F.D. Güzel, M.K. Birhanu</u></p> <p><b>#151</b> "Speed Control of a Synchronized Induction Motor Powered by Hydrogen Fuel Cell" <u>H. Erdoğan</u></p> <p><b>#157</b> "Scale up Techniques for PEMFC: Fluid Mechanics Approach" <u>G. Tol, A.C. Türkmen, C. Çelik, F.G. Boyacı San</u></p> <p><b>#186</b> "Improvement of Voltage Stability with Hydrogen Fuel Cell-Supported STATCOM" <u>N. Yabar, C. Haydaroğlu, A. N. Akpolat, H. Kılıç, A. Top</u></p> <p><b>#212</b> "Impact of Current Density on Temperature and Water Content Distribution in a PEM Fuel Cell using a Coupled Heat and Mass Transfer Model" <u>M. Jahanbakhsh, E. Aydın, C. Erkey</u></p>	<p><b>#5</b> "Efficiency and Performance Analysis of IT-SOFC Integrated with S-CO<sub>2</sub> Brayton Cycles: A Comprehensive Study on Waste Heat Utilization" <u>S. Beygül, Y. Kalıncı</u></p> <p><b>#197</b> "Thermodynamic Analysis of Synthetic Fuel Production from Carbon Dioxide Obtained from Carbon Capture Facility in Oil Refinery by Combination of Hydrogen Production and Power Conversion" <u>S. B. Sunğur, E. Kayabasi</u></p> <p><b>#198</b> "Analysis of Synthetic Fuel Production Utilizing the Waste Heat from Blast Furnace Hot Stoves by Combination of Thermal Energy Storage and Power Cycle" <u>S. B. Sunğur, E. Alp, E. Kayabasi</u></p> <p><b>#201</b> "Thermodynamics Assessment of a New Three-Step Cycle for Methane to Methanol and Hydrogen Production" <u>V. Yadav, F. Khalid</u></p> <p><b>#202</b> "Thermodynamic Evaluation of Hybrid Thermochemical Process for Lignin to Hydrogen and Methane Conversion" <u>S. Yadav, F. Khalid</u></p> <p><b>#208</b> "Thermodynamic Modeling of an Innovative Integrated Polygeneration System Using Sustainable Energy Resources" <u>M. A. Sabbaghi, C. O. Colpan, H. Genceli</u></p> <p><b>#330</b> "Green Hydrogen Production Station: Applying Exergetic Sustainability Parameters to a 1 MW PEM Electrolyzer" <u>A. E. Aluç, A. Midilli</u></p> <p><b>#141</b> "Thermodynamic and Electrochemical Modeling of Direct Methanol Fuel Cell System for Portable Applications" <u>E. Kalkan, M. Alobeid, S. Çelik, H. Özcan</u></p>	<p><b>#333</b> "A Compact, Efficient, and Sustainable Approach to Green Hydrogen Production Using PV Systems" <u>H. Topcan, A. Akpolat, U. Aydemir</u></p> <p><b>#343</b> "Hybrid Hydrogen Systems for Mitigating Sub Synchronous Oscillations in Weak Power Grids" <u>S. Shahzad, H. Kilic</u></p> <p><b>#313</b> "Boosting Photocatalytic Hydrogen Production through Ni<sub>2</sub>P/g-C<sub>3</sub>N<sub>4</sub>/Ti<sub>3</sub>C<sub>2</sub> Quantum Dots" <u>D. Akvüz, B. Güven, E. Demirbaş</u></p> <p><b>#338</b> "Metal-organic Frameworks for Hydrogen Storage" <u>S. Demir</u></p> <p><b>#283</b> "Manta Ray Foraging Optimization for Accurate Parameter Estimation of Proton Exchange Membrane (PEM) Fuel Cell Model" <u>D. Yağcı, H. Genceli, O. E. Turgut</u></p> <p><b>#296</b> "Determination of Exchange Current Density in Solid Oxide Fuel Cells" <u>Y. Haseli</u></p> <p><b>#299</b> "Application of Coolant Flow Channels with Different Geometries in PEM Fuel Cell" <u>M. Taş, K. M. W. Logan, G. Elden</u></p> <p><b>#89</b> "Plasma-catalytic Method of Methane Conversion in Microwave Discharge" <u>M. Skakov, A. Miniyazov, T. Tulenbergenov, I. Sokolov, A. Agatanova</u></p>
10:45 11:05		Coffee Break (with Poster Session-4)				

EXHIBITION



Wednesday – May 28, 2025

PARALLEL SESSIONS – 7

	HALL A	HALL B	HALL C	HALL D	HALL E	
	<b>PANEL</b>	<b>Session 28. Electrolysis and Electrolyzer Technologies – II</b>	<b>Session 29. Hydrogen Storage Systems – II</b>	<b>Session 30. Sustainable and Renewable Hydrogen Technologies</b>	<b>Session 31. Biohydrogen and Waste-to-Hydrogen</b>	
	<b>Hydrogen Technologies in the Defense Industry</b>	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	
	<b>Moderator</b> <b>Selmiye Alkan Gürsel</b> <i>Sabancı University, Türkiye</i>	<b>#138</b> "Synthesis of NiFeMo HER Catalyst on Nickel Foam for AEM Electrolyser" <u>Y.S. Adam</u> , <u>M. Farsak</u> , <u>G. Kardaş</u>	<b>#126</b> "Geological Hydrogen Storage for Long-duration Energy Resilience" <u>A. Özmmucu</u> , <u>A. Baba</u>	<b>#298</b> "Sustainable Hydrogen Production Through Hybrid Nanofluid Integrated Evacuated Tube Solar Collectors with Organic Rankine Cycle" <u>S. G. Güngör</u>	<b>#42</b> "Comparative Analysis of Biohydrogen Production Studies in Türkiye Using Evidence Synthesis Methodology" <u>K.K. Yiğit</u> , <u>T. Keskin-Gündoğdu</u>	
	<b>PANELIST</b>	<b>#166</b> "Simulation-Based Performance and Cost Optimization of Alkaline Electrolyzers" <u>S. Ş. Demirezen</u> , <u>H. Özcan</u> , <u>S. Çelik</u>	<b>#180</b> "Performance Assessment of a Hybrid Compressed Air Energy Storage System Fed by Hydrogen from RES" <u>V. Tola</u> , <u>R. Caria</u>	<b>#346</b> "From Agricultural Waste to Renewable Energy: Integration of Soil-based Microbial Fuel Cells in Biobed Systems for Sustainable Treatment of Olive Oil Mill Wastewater" <u>S. Gunes</u> , <u>A. Ayol</u>	<b>#43</b> "Evaluating the Performance of Boosting Regressors for Predicting Biohydrogen Production under Variable Experimental Conditions" <u>M.A. Ergün</u> , <u>T.K. Gündoğdu</u> , <u>B.E. Köktürk- Güzel</u>	
	<b>Deniz Demirci</b> <i>Secretariat of Defense Industries (SSB), Türkiye</i>	<b>#168</b> "Comparison of IrO <sub>2</sub> -FeVS and IrO <sub>2</sub> -FeVS-Co Catalysts in PEM Electrolysis at Different Temperatures" <u>M. Çokyasa</u> , <u>A. Ekinci</u> , <u>Ö. Şahin</u> , <u>O. Baytar</u>	<b>#210</b> "Performance of Metal Hydride Composite Compacts for Hydrogen Storage and Fuel Cell Powering" <u>A. Parida</u> , <u>P. Sharma</u> , <u>M. Palanisamy</u> , <u>R. Thangavel</u> , <u>A. Dalal</u>	<b>#309</b> "Studies Conducted on On-Board/On-Site Catalytic Hydrogen Production and Carbon Capture and Utilization (CCU) in the SNG & Hyd Tec Lab at Boğaziçi University" <u>A. E. Aksoyulu</u> , <u>B. S. Çağlayan</u>	<b>#99</b> "Evaluation of Hydrogen Production Efficiency by Dark Fermentation Process of Various Airport-derived Wastes" <u>F. Altay</u> , <u>N. Semerci</u> , <u>A. Öngen</u> , <u>Ş. Duran</u> , <u>M.C. Altay</u> , <u>N. Yeşilova</u>	
	<b>Hüseyin Devrim</b> <i>TEKSIS, Türkiye</i>	<b>#243</b> "Experimental Analysis of Proton Exchange Membranes for Water Electrolyzers Across a Range of Operating Parameters" <u>A. Albadwi</u> , <u>S. B. Selçuklu</u> , <u>M. F. Kaya</u>	<b>#239</b> "Fly Ash-Derived Supported Iron Catalysts for Efficient Ammonia Decomposition: A Sustainable Approach for CO <sub>x</sub> -free Hydrogen Storage" <u>B. Sekizkardeş</u> , <u>S. F. Kurtoğlu-Öztulum</u>	<b>#316</b> "Producing Hydrogen and Heat from Solar Towers: A Path Toward Energy-Independent Cities" <u>H. Yağlı</u> , <u>E. Kocaman</u> , <u>H. Tutumlu</u> , <u>A. Koç</u> , <u>R. Yumrutaş</u>	<b>#219</b> "Challenges and Limitations of Dark Fermentative Hydrogen Production" <u>Ş. Arıcı</u> , <u>G. Koçar</u>	
	<b>Uğur Kayasal</b> <i>Roketsan Missiles Inc., Türkiye</i>	<b>#48</b> "Optimization of Boron-doped Nickel Electrodes for Enhanced Hydrogen Production via Alkaline Electrolysis" <u>C. Demir</u> , <u>K.A. Uğurlu</u> , <u>D. Türkyılmaz</u> , <u>A.D. Tümer</u> , <u>B.C. Filiz</u>	<b>#285</b> "Structural Modification of the AB-Type TiFe Alloy with V, Zr and Ni: Study of the Solid-State Hydrogen Storage Capacity and Kinetics at Room Temperature" <u>J. A. L. Rodas</u> , <u>J. A. Velandia</u> , <u>R. A. Ocampo</u> , <u>A. A. Z. Gil</u> , <u>S. Bello</u> , <u>E. Correa</u> , <u>C. Arieta</u> , <u>F. J. Bolivar</u> , <u>F. E. Echeverria</u>	<b>#261</b> "Sustainable Energy Based on Optimizing Load Frequency Control in Military Microgrid" <u>M. T. Özdemir</u> , <u>Ş. Çelikdemir</u> , <u>B. Yıldırım</u>	<b>#220</b> "Integration of Dark Fermentation and Microbial Electrolysis Cells for Hydrogen Production from Wheat Straw" <u>Y. D. Yilmazel</u> , <u>İ. Konar</u> , <u>R. Kunayeva</u> , <u>İ. Bulat</u> , <u>R. Harb</u>	
	<b>Devrim Köseoğlu</b> <i>Turkish Aerospace Industries (TUSAŞ), Türkiye</i>	<b>#139</b> "Investigation of Long-term Degradation Effects in PEM Electrolyzers" <u>A. Çankaya</u> , <u>S. Çelik</u> , <u>B. Sevinç</u> , <u>K. Dağdır</u> , <u>H. Özcan</u>	<b>#361</b> "Intelligent Health monitoring of Hydrogen Storage and Transport Systems" <u>S. Sikdar</u>	<b>#106</b> "Investigation of the Conditions for the Use of New Generation Hydrogen Generator in Geothermal Power Plants: Kizildere Geothermal Field Case Study" <u>R. Ş. Çetin</u> , <u>F.G. Boyacı San</u> , <u>F. S. T. Haklıdır</u>	<b>#345</b> "Comparative Assessment of Bioelectricity Generation from Various Industrial Wastewaters and High-strength Organic Wastes Using Microbial Fuel Cell Technology" <u>İ. Biryol</u> , <u>A. Ayol</u>	
	<b>İbrahim Pamuk</b> <i>LENTATEK, Türkiye</i>	<b>#148</b> "Design of Single Porous Transport Layer with Strut-based Lattice Structures for PEM Electrolyzers" <u>K. Dağdır</u> , <u>A. Çankaya</u> , <u>S. Çelik</u>	<b>#38</b> "A Novel Experimental Approach for Hydrogen Storage Using an External Electric Field" <u>A.K. Gandham</u> , <u>V.K. Pal</u>	<b>#249</b> "Renewable Energy-Based Hybrid System Optimization for Wastewater Treatment Plants: A Case Study on Hydrogen and Ammonia Production" <u>E. B. Güneş</u> , <u>H. Tekin</u> , <u>H. Kılıç</u>		
	<b>Hüseyin Devrim</b> <i>TEKSIS, Türkiye</i>					
	This panel aims to provide insights into how hydrogen can revolutionize military propulsion systems, enhance energy resilience, and support sustainable logistics.					
11:05 12:50						EXHIBITION
12:50	<b>NHA AWARDS CEREMONY &amp; REMARKS</b>				<b>Optional Social Tours (starts at 12:30)</b>	
13:10	<b>LIGHT LUNCH (Foyer)</b>					
13:10						
14:00						





**Wednesday – May 28, 2025**

**PARALLEL SESSIONS – 8**

	HALL A	HALL B	HALL C	HALL D	HALL E		
	<b>Session 32. Catalysts for Hydrogen Applications – IV</b>	<b>Session 33. Sustainable Hydrogen Technologies – III</b>	<b>Session 34. Hydrogen Carriers – II</b>	<b>Session 35. Modeling, Simulation, and Optimization – II</b>	<b>Session 36. Electrolysis and Electrolyzer Technologies – III</b>		
	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>	<b>Session Chair: TBA</b>		
14:00 16:00	<p><b>#23</b> "Development of Fe-C Microwave Catalysts for Conversion of H<sub>2</sub>S into CO<sub>2</sub>-free H<sub>2</sub>" <i>N. Demirhan, H.Akansu, Y. Ataseven, M.Y.Doğan, S. Yaşyerli, H.Arbağ, H.M.Taşdemir, N.Yaşyerli</i></p> <p><b>#29</b> "Ultrasonic Spray Synthesis of Coal Layered Double Hydroxide: A Novel and Scalable Approach to Oxygen Reduction Catalysis" <i>K. Büyükkarber, Ö. Şahin</i></p> <p><b>#66</b> "Synthesis of Ru/C and PtRu/C Catalysts by Microwave-Assisted Polyol Method at High Temperature and Pressure" <i>S. Karadeniz, N. Ayas</i></p> <p><b>#69</b> "Microwave Assisted Methane Decomposition Reaction Using Nickel-palladium Catalysts Supported on Different Carbon Supports" <i>R.C. Seyfeli, D. Varisli</i></p> <p><b>#158</b> "Optimization of Assembly Torque and Lubrication Amount for Hydrogen Tank Valves" <i>O. Özkan</i></p> <p><b>#178</b> "Structural and Catalytic Insights into Sr-Modified LaNi<sub>0.5</sub>Mg<sub>0.5</sub>O<sub>3</sub> Perovskites" <i>P. Ebrahimi, A. Kumar, M. Al-Marri</i></p> <p><b>#274</b> "Understanding of the Activity of NiFe Oxide Based OER Catalysts Toward Mesoporous NiFe Oxide Thin Films" <i>A. E. Başaran, C. Karakaya, N. Solați, S. Kaya</i></p> <p><b>#75</b> "Comparison of Performances of Imidazole-based Polymeric Catalysts for Hydrogen Production" <i>M. Zumaci, K. Gökkuş, M. Gür</i></p>	<p><b>#46</b> "Trends and Insights in Hydrogen Energy: A Bibliometric Approach" <i>N. Ersoy, İ. Ekmekci</i></p> <p><b>#189</b> "Hydrogen Production from Wastewater of Domestic Heat Pump Based Tumble Dryers: An Innovative Approach for Sustainable Energy" <i>A. Erdoğan, A. Basdemir</i></p> <p><b>#28</b> "Modeling the Economic Viability of Integrated Hydrogen Fuel Cell / Heat Pump CHP Systems for Residential Applications" <i>E. Laan, C. Acar, W Rohlfis</i></p> <p><b>#108</b> "Optimizing Hydrogen/Vanadium Redox Flow Batteries: Advanced Electrode Modifications for Enhanced Performance" <i>V.C. Erdoğan, B. Fıçıcılar</i></p> <p><b>#147</b> "The Different Colors of Hydrogen" <i>S.Aktepe</i></p> <p><b>#167</b> "Effect of Temperature and Cathode Flow Rate on Performance of Hydrogen-Bromine Redox Flow Battery" <i>A. C. Turkmen, C. Celik, F. G. B. Sa</i></p> <p><b>#194</b> "Development of Membranes for Hydrogen Bromide Redox Flow Batteries" <i>K. C. Ata, A. C. Türkmen, F. G. B. San, C. Çelik</i></p> <p><b>#360</b> "The Effect of Earthquakes on Underground Hydrogen Storage Cavems" <i>H. Karakilcik</i></p>	<p><b>#25</b> "Investigating the Superior Effect of g-C<sub>3</sub>N<sub>4</sub> on Co-B Catalysts for Efficient Hydrogen Generation via NaBH<sub>4</sub> Hydrolysis" <i>B.C. Çelik, H.Elçiçek</i></p> <p><b>#47</b> "Cobalt-copper-boron Doped Graphitic Carbon Nitride as a Promising Catalyst for Hydrogen Production Via Sodium Borohydride Hydrolysis" <i>Ö. Şahin, F.E.G. Güner, M.E. Kenar</i></p> <p><b>#348</b> "Hydrogen-rich Syngas for Cold Chain Logistics: A Life Cycle Assessment of Biomass Gasification Integration" <i>M. U. Ozturk, A. Ayol</i></p> <p><b>#79</b> "Enhanced Catalytic Performance of Titanium Dioxide-supported Cuco Bimetallic Catalyst for Hydrolysis of Ammonia Borane" <i>M. Kılıç, E. Özdemir</i></p> <p><b>#104</b> "Catalytic Potential of g-C<sub>3</sub>N<sub>4</sub> in NaBH<sub>4</sub> Hydrolysis: A Scientometric Study on Hydrogen Production" <i>B. Yilmaz, B.C. Çelik, H. Elçiçek, A.S. Karakurt</i></p> <p><b>#117</b> "Maximizing the Degree of Dehydrogenation of Perhydro-dibenzyl Toluene via in-line Distillation for Continuous Hydrogen Release" <i>M. Naseem, M. Luqman</i></p> <p><b>#301</b> "Advancements and Challenges in Liquid Hydrogen Storage Tank Design for Maritime Applications: A Comprehensive Review" <i>S. A. Çetinkaya, S. A. Korkmaz, N. Bimbo, S. Afshan</i></p>	<p><b>#7</b> "Optimization of the Biogas-to-Hydrogen Production Process via Methane Reforming Routes Using Aspen Plus® V14" <i>M.M.Khan</i></p> <p><b>#9</b> "Techno-economic Evaluation of Hydrogen's Role in Dutch Heating Networks: a Dynamic Modeling Approach" <i>A. Kaabinejadian, A.Pozartlik, C.Acar</i></p> <p><b>#94</b> "Simulation Tool for Techno-Economic Analysis of Renewable Hydrogen Production Plants" <i>F. Machado, H. Monteiro, L. Fernandes, L. Marcon</i></p> <p><b>#112</b> "Advanced Machine Learning Approaches to Hydrogen Compressibility Classification and Prediction" <i>T. Ç. Akıncı, H.S. Nogay, M. Yılmaz, A.A. Martinez-Morales, S. Ekici</i></p> <p><b>#161</b> "Improving the Accuracy of PEMFC Power Model Parameters Using Whale Optimization Algorithm" <i>H. Acar</i></p> <p><b>#321</b> "Design and Analysis of a Wind-powered Hydrogen Production System for a Maritime Autonomous Surface Vessel" <i>S. A. Korkmaz</i></p> <p><b>#332</b> "Effect of Thermal Conditions on a PV-AEMWE System Integrated with Metal Hydride Storage Tanks" <i>C. Celebi, M. Ezan, C. Colpan, Y. Devrim</i></p> <p><b>#337</b> "Numerical Simulation of High-Temperature Proton Exchange Membrane Fuel Cell Performance Using 3-D COMSOL Model" <i>M. Buyuk, Y. Nalbant Atak, Y. Devrim</i></p>	<p><b>#279</b> "Investigation on Performance of Anion Exchange Membrane Electrolyzer with Different Flow Field Configurations" <i>U. Ergin, A. B. A. Ibrahim, S. Tumse, G. M. Ozkan, G. Kardas, H. Akilli</i></p> <p><b>#4</b> "Optimization of Green Hydrogen Electrolyser Plant Efficiency and Required Power Quality Solution" <i>H. Bezerra</i></p> <p><b>#172</b> "Techno-Economic Analysis of MoS<sub>2</sub>/Carbon Composites as Sustainable Platinum Alternatives in PEM Electrolyzer Cathodes" <i>H. Saraltın</i></p> <p><b>#352</b> "A Comparative Study on the Hydrogen Production Efficiency of Various Membranes in a Chlor-alkali Electrolyzer" <i>S. Damarseckin, E. Durar, M. Karakılıç, A. Atiz, H. Karakılıç</i></p> <p><b>#324</b> "Solar Syngas Production via a ZnO/Zn Based Carbothermal Reduction and Water Splitting Cycle" <i>R. Bhosale</i></p> <p><b>#114</b> "Nickel Oxide Catalysts for Hydrogen Production Via Urea Electrolysis" <i>N-N. Liang, D.S. Han, H. Park</i></p> <p><b>#128</b> "Fluid Flow of Alkaline Water Electrolysis Hydrogen Cell: Design and Experimental Investigation" <i>M.A. Farahat, M. Abdelmordy, H.H. Eldeeb, A.M. Abdelsalam, W. A. El-Askary, I.M. Sakr</i></p> <p><b>#304</b> "Novel Cylindrical Electrolysis System with Copper-Coated Electrodes for Enhanced Hydrogen Production" <i>E. K. Oquz, I. Dincer</i></p>		<b>EXHIBITION</b>

**KEYNOTE SESSION 3**  
**Session Chair: TBA**

16:00 **Feridun Hamdullahpur, University of Waterloo**

16:40 **Green Ammonia: A Pragmatic Pathway for Early Green Hydrogen Commercialization**

**CLOSING REMARKS**

Poster Session – 1 (Monday – May 26, 2025 | 16:00 – 16:30)

- π11 “The Potential of Offshore Wind Farms as Hydrogen Fuel Station: A Case Study of Marmara Sea” V. Dixit, C. Acar
- π13 “Eco-friendly Leaching Strategies for Recycling Electronic Waste CPUs to Enhance Hydrogen and Oxygen Evolution” S. Mitrović, S. Brković, M. Seović, M. Pijović Radovanović, P. Laušević, N. Zdolšek, I. Perović
- π14 “Electrochemical Surface Modification and Effects on the Catalytic Activity of Nickel-based Electrodes for Hydrogen Evolution” S. Mitrović, S. Brković, M. Seović, P. Laušević, N. Zdolšek, Đ. Katnić, I. Perović
- π15 “Non-stoichiometric Tungsten-oxides as the Anode Catalyst Supports for PEM Fuel Cells” S. Brković, I. Perović, M. Seović, S. Mitrović, P. Laušević, V. Nikolić, M.M. Kaninski
- π18 “Dual-doped Iron-copper Carbon Electrocatalyst for Enhanced Water Splitting Performance in Alkaline Media” J. Georgijević, I. Perović, S. Brković, M. Seović, N. Zdolšek, J. Milikić, B. Šljukić
- π19 “Synthesizing Cost-effective, Dual-function Catalysts from Recycled CPUs and Lemon Peel for Water Splitting” M. Seović, S. Brković, I. Perović, D. Jugović, J.M. Vukajlović, P. Laušević, S. Mitrović
- π21 “Life Cycle Assessment of Green Hydrogen Production via Electrolysis” H. Camur, A. Isler-Kaya, F. Karaosmanoglu
- π22 “Development of Iron-Sulfide Catalysts for Green H<sub>2</sub> Production from H<sub>2</sub>S” N. Demirhan, H. Akansu, Y. Ataseven, M.Y. Doğan, S. Yaşyerli, H. Arbağ, H.M. Taşdemir, N. Yaşyerli
- π27 “Biohydrogen Production by Bacterial Co-Culture Using Agro-Industrial Waste as Carbon Source” L. Nascimento, C. Reis, T. Rodrigues, M.V. Rocha
- π33 “Hydrogen Production by Dark Fermentation Using Cashew Apple Bagasse as Feedstock” E. de Sousa Moreira, G.F. Simão, C. L. B. Reis, M.V.P. Rocha
- π45 “Production of Methanol from Biogas Obtained from Renewable Sources Using Carbon Dioxide Hydrogenation Method” E. İncedere, Ç. Aydın
- π56 “Gasification of Agricultural Residual Biomass, Vector in the Production of Green H<sub>2</sub>” L.G. Cristian, M. Lucian, P. Ionel, G. Rodica –Manuela, S. Dorel, S. Iulia
- π58 “Cost-effective Porous NiO/Ni@NF Nanosheet Catalysts for Hydrogen Production via Electrocatalytic Ethylene Glycol (EG) Oxidation” S.A. Aladeemy, T.R. Al-Rijaji, M.S. Amer, P. Arunachalam, A.M. Al-Mayouf
- π60 “Results of Combustion Tests of H<sub>2</sub> – CH<sub>4</sub> Mixture with High H<sub>2</sub> Content” M. Lucian, L. Gheorghe, N. Alina, S. Dorel, G. Rodica –Manuela, M.G. Osman
- π61 “Ionic Liquid-enhanced Multifunctional Electrolytes for Hydrogen Evolution Reaction and Zn-based Batteries” N. Zdolšek, A. Dimitrijević, I. Perović, S. Brković, M. Seović, P. Laušević, M.K. Roković
- π62 “Enhanced Electrochemical Performance of V<sub>2</sub>O<sub>5</sub> Electrode with 1-butyl-3-methylimidazolium Salicylate Electrolyte for Hydrogen Evolution, Oxygen Evolution and Oxygen Reduction Reactions” N. Zdolšek, A. Dimitrijević, I. Perović, S. Brković, M. Seović, M.K. Roković, M. Božiković
- π64 “Performance Analysis of Stand-alone Solar Systems in Coastal Environments: A Case Study” M.G. Osman, G. Lazaroiu, C.V. Strejoiu, C. Panait, D. Stoica
- π65 “Increasing the Energy Efficiency and Economic Viability of a Photovoltaic Park in Craiova” M.G. Osman, G. Lazaroiu, C.V. Strejoiu, C. Panait, D. Stoica

Poster Session – 2 (Tuesday – May 27, 2025 | 10:30 – 10:50)

- π80 "Synthesis and Characterization of Semiconductor Oxides CuO and ZnO for the Production of Green H<sub>2</sub> by Photo Catalysis under UV-visible Light" *N. Djamel, A. Samira, S. Farouk, F. Djawad, H.H. Aya*
- π82 "Hydrogen Gas Production onto Fe<sub>2</sub>O<sub>3</sub> and Clay/ Fe<sub>2</sub>O<sub>3</sub> by Photo Chemical Conversion under UV-visible Light" *N. Djamel, A. Samira, S. Farouk, F. Djawad, H.H. Aya*
- π88 "High-Value Carbon Production through Thermal Plasma Dry Reforming for E-fuel Viability" *A.R.C. Labanca, A.G. Cunha, R.P. Ribeiro, C.G. Zucolotto, M.B. Cevolani, M.A. Schettino Jr., F.G. Emmerich*
- π92 "Innovative Electrolysis Using Non-Critical Raw Materials and Circular Economy Techniques to Improve Green Hydrogen Production" *A. Muscolino, A.S. Aricò*
- π93 "A PEM Electrolyser with Low Precious Metal Loading" *V. Ciccio, S. Siracusano, A.S. Aricò*
- π103 "Exploring TiV-based Alloys as Potential Anode Materials for High-capacity Ni-Mh batteries" *G. Çakmak, B. Pişkin, F. Pişkin, H. Yüce*
- π121 "Dehydrogenation of Dimethylamine Borane in the Presence of Ru<sup>0</sup>/TiO<sub>2</sub> Catalyst" *A. Al-Areedheea, S. Karaboğa, İ.A. Morkana, S. Özkar*
- π123 "Electrodeposition of Platinum on Electropolymerized ABA on Reduced Graphene Oxides as a Catalyst for Propanol Oxidation in Alkaline Solution" *P. Waenkaew, S. Sriwichai, S. Themsiramongkon*
- π137 "Development of NiCo(OH)<sub>2</sub> Based OER Catalysis for Alkaline Water Electrolysis" *Y.S. Adam, G. Aksaray, E. Faki, M. Farsak, G. Kardaş*
- π140 "Performance Analysis of Plant-Inspired Bipolar Plate Flow Channels for PEM Electrolysers using 3D Modelling" *M. Alobeid, S. Çelik*
- π143 "Hydrogen Economy: Key Developments in China, Europe, and the USA" *D. Üngüder, A.C. Krutoff, M. Wappler*
- π150 "The Role of Ammonia in Renewable Energy and Emergency Power Supply: A Feasibility Study" *H. B. Perçin, A. Çalıřkan*
- π152 "Exploring Hydrogen Mobility: A Feasibility Study on Sustainable Campus Transportation" *H. B. Perçin, A. Çalıřkan*
- π156 "Synthesis and Characterization of (Gd,Nd) – Doped CeO<sub>2</sub>/SrTiO<sub>3</sub> Heterostructures for Lt-SOFC" *N. Kırkgeçit Aksoy, D. Kara, S. Kerli, M. Şaşmaz Güldal, O. Türkođlu, H. Özlü Toru*
- π159 "Seawater Electrolysis for an Advanced H<sub>2</sub> Production" *F. Giacobello, S. Siracusano, A. Muscolino, V. Ciccio, M. A. Mancuso, V. Antonucci*
- π171 "Contribution of SM-Doped CeO<sub>2</sub> Nanoparticles to Hydrogen Production" *A. Kırkgeçit, H. Ö. Torun, N. K. Aksoy, M. Kisti, G. Özkırar, M. F. Kaya*
- π175 "Development of Alkaline Electrolysis Catalyst Using Waste Zinc-Carbon Batteries" *H. Hançer, M. Farsak*
- π200 "High-Efficiency Hydrogen Storage via Porous Germanene Nanostructures" *A. Miranda, G. González, B. J. Cid, M. Calvino, J. E. Santana, F. Salazar*
- π222 "Energy Management in a Hybrid System Integrating PV Panels, PEM Fuel Cells, and Batteries" *B. Yılmaz, C. O. Colpan*
- π235 "Electrooxidation of Methanol and Sodium Borohydride on Nano-Silver Electrode for Alkaline Fuel Cells" *A. Aytaç, F. Ö. Gökmen*

Poster Session – 3 (Tuesday – May 27, 2025 | 16:00 – 16:30)

- π240 “Development of a New Generation Hybrid System for the Electric Vehicle” A. Aytaç, O. Yılmaz
- π242 “Optimal Design of a New Photovoltaic-Electrolyser-Fuel Cell-Battery Hybrid System” A. Aytaç, O. Yılmaz
- π246 “Impact of Operational Stoppages on the Stability of Anion Exchange Membrane Electrolysis” M. Mizanur Rahman, A. H. M. Videla, M. Santarelli
- π250 “Derivation of CeO<sub>2</sub> Photonanocatalysts through a Practical Sol-Gel Method” E. Erünal, D. Çil, E. G. Uyar, M. Ay, İ. Cansever
- π257(1) “Green Synthesis of Fuel Bioadditive Solketal Levulinate by Functional Catalytic Membrane” N. Y. Yüzer, G. Hasırcı, A. O. Hoşöz, E. E. Çakırca, E. Alptekin, O. İlgen, M. Çanakçı, N. Hilmioğlu
- π257(2) “Development of Environmentally Friendly the Catalytic Membrane as a Catalyst for Synthesis of the Green Fuel Bioadditive Glycerin Carbonate” G. Hasırcı, N. Y. Yüzer, A. O. Hoşöz, E. E. Çakırca, E. Alptekin, O. İlgen, M. Çanakçı, N. Hilmioğlu
- π258 “Integration and Storage of Hydrogen-Based Fuel Cells for Unmanned Aerial Vehicles” M. F. Özbek, R. Ak, E. Telci, E. Çelik, H. Settaşı, S. Sezer, V. Alizada, E. C. Duğan, S. A. Angin, R. G. Akay, C. Çelik
- π264 “Sc- and Ti-Functionalized Doped SnC Nanosheets for Hydrogen Storage” D. Romero, A. R. Montoya-García, L. G. Arellano, M. I. Iturrios, L. A. Pérez, M. Cruz-Irisson
- π269 “Kinetic Modelling on Transient Photocurrent Responses of WO<sub>3</sub> Photoanodes” E. Ayral, F. Uçar, E. Haznedar, E. Altuntaş, S. Kaya
- π280 “Understanding the Kinetic Mechanism of WO<sub>3</sub> Photoanodes for PEC Applications” E. İ. Haznedar, F. Uçar, E. Ardali, E. Altuntaş, S. Kaya
- π292 “Sun – Water – Hydrogen Nexus in Artificial Reservoirs within Hydropower Infrastructure” R. Felseghi, P. W. Ungureşan, F. I. Bode, M. C. Bălan
- π295 “Performance Assessment of a Hydrogen Liquefaction Cycle Utilizing Liquefied Natural Gas Regasification and Photovoltaic Panel-Based Power Generation Unit” M. Taghavi, C. O. Colpan
- π297 “Hydrogen and Volatile Fatty Acid Production from Posidonia Oceanica Seagrass by Dark Fermentation” D. Kurtdemir, E. Taylan, Ş. Arıcı
- π300 “Thermodynamic Analysis of Claude Cycle for Hydrogen Liquefaction” Y. Kumlutaş, C. O. Colpan
- π317 “Effect of MoP/g-C<sub>3</sub>N<sub>4</sub>/Ti<sub>3</sub>C<sub>2</sub> Quantum Dots on Photocatalytic Hydrogen Production” E. S. Şahin, D. Akyüz, E. Demirbaş



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- π318 “Enhancement of Photocatalytic Hydrogen Production with CoP/g-C<sub>3</sub>N<sub>4</sub>/Ti<sub>3</sub>C<sub>2</sub> Quantum Dots” *B. Camgöz, D. Akyüz, E. Demirbaş*
- π320 “Development of a Novel Catalytic Membrane by Loading Silico Molybdcic Acid to Polyvinyl Alcohol and its Use as a Catalyst for Fuel Additive Solketal Synthesis” *N. Yüzer, N. Hilmioğlu*
- π323 “Electrospun Copper-doped Recycled PVDF Membranes for Microbial Fuel Cell Applications” *A. Katırcı, Ö. Ipsalali, S. Kahraman, F. Nigiz*
- π325 “Solar Energy Storage via H<sub>2</sub> Production Using a Thermochemical MnSO<sub>4</sub>/MnO Water Splitting Cycle” *R. Bhosale*
- π328 “Hydrogen Fuel Cell System: a Sustainable Power Solution in Operational and High Altitude Areas for Armed Forces” *A. V. C. Khairnar*
- π335 “Evaluation of the Social Dimensions of Integrating Natural Gas and Hydrogen in Energy Consumption: The Case of Türkiye” *B. Yenihan, K. Çolak, O. Özcan*
- π336 “Clean Energy Demand: Evaluating the Use of Hydrogen in Electricity Generation from a Corporate Cost Perspective” *K. Çolak, B. Yenihan, O. Özcan*
- π339 “Hydrogen Storage Properties of a Zirconium Metal-organic Framework” *S. Demir, N. Bilgin*
- π341 “Enhanced Photoelectrochemical Performance of CeO<sub>2</sub>/TiO<sub>2</sub> Heterostructure for Hydrogen and Oxygen Evolution Reactions” *M. Behroozi, E. Doustkhah*
- π342 “Integration of Metal-organic Frameworks with Titanium Dioxide for Enhanced Photoelectrochemical Performance in Sustainable Hydrogen Production” *S. Sadighi, E. Doustkhah*
- π349 “Enhancing Electric Vehicle Performance with Fuel Cell Integration: Driving Range Optimisation” *V. Tekin, K. Unustu, O. Ozel, C. Colpan, M. Karaoglan*
- π351 “Development of Stability and Efficiency of FAPbI<sub>3</sub> Perovskite Solar Cells for Hydrogen Evolution” *Ş. Tüzüner, O. Mahmood, Ş. Ela, P. Reiss*
- π353 “An Experimental Study of Jet-wall and Jet-jet Interactions of Directly Injected Hydrogen and Methane in a Wave-piston Geometry” *M. Gong, M. Lundgren, J. Eismark, M. Andersson*
- π354 “Modernization of a Semi-empirical PEM Fuel Cell Model for Heavy-duty Applications” *B. Dursun, M. Johansson, Ö. Andersson, P. Tunestål*
- π357 “Process Simulation of Hydrogen Generation from Biomass Using Aspen Plus” *A. Atas, N. Javani, Ö. Yücel*