Global Hydrogen Futures

June 11 and 12, 2025, Cranfield University

June 11- Wednesday		
12:00-13:00	Registration & Tea and Coffee *Venue: AIRC IDEAS Space*	
13:00-13:30	**Welcome and Opening Remarks** **Chair: Prof Nazmiye Balta-Ozkan** Prof Leon Terry, Cranfield University Prof Upul Wijayantha, Cranfield Hydrogen Integration Incubator Prof Meng Tao, Overview of HyPT Prof Sara Walker, Overview of HI-ACT Prof Rachael Rothman, Overview of Hy-RES	
13:30- 13:50 13:50-14:30	**Plenary talk & panel debate** **Chair: Prof Mohamed Mamlouk** Department of Energy Security and Net Zero Hydrogen Innovation Support Dr Joanna Huddleston, Head of the Hydrogen Innovation Programme, DESNZ Panel Debate: Dr Michaela Kendall, Adelan CEO Frank Ashton, Hydrogen Energy Association	
14:30-15:00	Tea and Coffee break	
15:00-17:00 Sessions 1 & 2	**Materials Advancements for Hydrogen Production and Use** **Chair: Viola Birss/ Mohamed Mamlouk** 1. *Daniel Niblett, Mohamed Mamlouk* Catalyst Layer Mixed Conductivity Controlled by Bubbles and Microstructures in AEM Water Electrolysers 2. *Bernardo J. M. Sarruf, Robert Steinberger-Wilckens* Measures to tackle degradation of materials under high temperature steam electrolysis 3. *Michael Pidburtnyi, Batuhan Bal, Viola Birss** High efficiency conversion of steam to hydrogen at metal oxide cathodes during high temperatures electrolysis 4. *Selda Ozkan, John T.S. Irvine* Metal and alloy nanoparticle exsolution on perovskite oxides for enhanced hydrogen production by water electrolysis 5. *Rajan Jagpal* Nanoporous Materials for Hydrogen Storage in Aviation 6. *Huimin Zhang* Electrosynthesis of ammonia from nitrate using a Cu-based electrocatalyst *Venue: AIRC IDEAS Space*	**Hydrogen in the Energy System** **Chair: Meng Tao / Francois Perreault** 1. *Kelvin Tan*, Meng Tao* Maximum Current Point Tracking for Photovoltaic Hydrogen Production 2. *Yusuf Nadabo Chanchangi* Excess energy from rooftop solar installation to generate green hydrogen for fuel cell vehicle? A preliminary investigation. 3. *Andrea Arias Sanchez* Perspectives of electrochemical and photocatalytic technologies for the water-energy nexus potential of water splitting of brines 4. *Alana Kemmerling*, Okke Batelaan* Green hydrogen production to facilitate integrated water management 5. *Danny Pudjianto, Hossein Ameli, Goran Strbac* Holistic Evaluation of the Roles and Values of Electrolysers in a Net-Zero Energy System 6. *Sibimol Luke* Business case analysis to identify competitive niches for hydrogen production by electrolysis *Venue: Red Lecture Theatre, Whittle Building*
17:00-18:00	**No Single Path: Reflecting on Diverse Career Journeys** **Chair: Prof Nazmiye Balta-Ozkan** Panel discussion: Prof Graham (Gus) Nathan, University of Adelaide Dr Michaela Kendall, Adelan CEO Dr Mike Ranjram, Arizona State University Prof Murray Thompson, University of Toronto *Venue: AIRC IDEAS Space*	
18:00-18:45	**Posters and drinks reception (see the list of accepted posters below)** *Venue: AIRC IDEAS Space*	

HyPT is funded by Building a Green Future theme & International Science Partnerships Fund

19:00-21:00	Dinner and networking Cranfield Management Development Centre	
June 12- Thursday		
8:00-8:30	Arrival – Tea and Coffee *Venue: AIRC IDEAS Space*	
08:30-10:30 Sessions 3 & 4	**Materials Advancements for Hydrogen Production and Use** **Chair: Greg Metha/ Qiong Cai** 1. *Mohammadfazel Vafadar* Morphology Control of III-Nitride Nanowires by Selective Area Epitaxy 2. *Shuaishuai Yuan* Theoretical Study of Photocatalytic H_2 Production in GaN-based Material Systems 3. *Muhammad Adnan* Deposition of Metal Clusters as Co-Catalysts on Visible Light Active Photocatalysts 4. *Qiong Cai* Developing catalysts for efficient hydrogen and ammonia end use 5. *Luisa Isago Fusinato* Addressing wastewater treatment and green hydrogen generation: design and characterization of novel polyimide photocatalysts 6. *Tamirat Bekele Delesa* Integrating Organic Waste Oxidation as a Pathway for Hydrogen Production from Wastewater *Venue: AIRC IDEAS Space*	**Hydrogen in the Energy System** **Chair: Karen Henwood /Nick Voulvoulis** 1. *Ruijie Zeng* Infrastructure Readiness for Water-positive Floating Photovoltaics and Hydrogen Generation Integration in the USA 2. *Louis Schilders, Nikolaos Voulvoulis* Hydrogen for Net Zero: A Critical Review of Costs, Emissions, and Feasibility Across Production, Industry, Transport, and Grid Balancing 3. *Elisabeth Shrimpton, Nazmiye Balta-Ozkan* Hydrogen Governance and the Climate Crisis: 'End-of Life' or 'Life-Support' for Fossil Fuels 4. *Mehmet Bozdal, Zoya Pourmirza, Sara Walker* Enhancing Cybersecurity in Hydrogen Energy Systems: A Simulation Environment for Benchmarking Dataset 5. *Weizhao Huang, Nazmiye Balta-Ozkan* CfD and Market Efficiency: Rethinking Hydrogen Pricing in the UK *Venue: Red Lecture Theatre, Whittle Building*
10:30-11:00	Tea and Coffee break	
11:00- 11:30	**Chair: Prof Rachael Rothman** Hydrogen transitions and Navajo tribe: an indigenous community perspective Dr Colleen W. Bowman, Navajo Technical University *Venue: AIRC IDEAS Space*	
11:30- 12:30	**Chair: Prof Rachael Rothman** Innovation & Entrepreneurship Bettany Centre for Entrepreneurship, Prof Stephanie Hussels *Venue: AIRC IDEAS Space*	
12:30-13:15	Lunch *Venue: AIRC IDEAS Space*	
13:15-15:15 Sessions 5 & 6	**Materials Advancements for Hydrogen Production and Use** **Chair: Murray Thompson/ Stuart Scott** 1. *Siqi Wang, Haliru Ibrahim Muhammad, Mingming Zhu** Catalytic Ammonia Combustion and Cracking to Enable Hydrogen Economy 2. *Joe C. Stallard* Gas-phase Conversion of Methane into Carbon and Hydrogen – measurement of carbon nanotube growth rate 3. *Francisco Cepeda* Investigating the role of non-thermal microplasma discharges in microwave-driven methane pyrolysis 4. *Luke Di Liddo*	**Hydrogen in the Energy System** **Chair: Rachael Rothman /Ruijie Zeng** 1. *Ying Xie* Sustainable hydrogen supply chain design: a conceptual framework 2. *Alok Choudhary* Assessing the Availability of the UK Hydrogen Supply Chain: Capabilities, Readiness, and Future Prospects 3. *Alex J. K. Newman, Rachael Rothman* Friend or Foe: A Social Acceptance Study of Hydrogen Storage and Distribution 4. *Elisabeth Shrimpton, Nazmiye Balta-Ozkan* Hydrogen Justice 5. *Karen Henwood*

	Induction-driven methane pyrolysis for clean hydrogen production 5. *Ghufran Alkhamis*, Sala Tamara Ba, Nick Montes, Ethan Genter, Hai Wang* Hydrogen Production through Molten-Metal Catalytic Decomposition of Methane 6. *Genpei Cai* Hydrogen Production via Methane Pyrolysis Using Molten Metal Catalysts *Venue: AIRC IDEAS Space*	Global Visions, local voices: community responses to hydrogen futures 6. *Khalid Alanazi* Game-theoretic approach to simulate strategic renewable hydrogen trade *Venue: Red Lecture Theatre, Whittle Building*
15:15- 15:45	**Wrap up & 5-minute reflections from each session chairs** Best poster award Prof Nazmiye Ozkan & session chairs *Venue: AIRC IDEAS Space*	

Accepted Posters

1. ZiQi Wei, Comparison of Centralized versus Distributed Hydrogen Production Systems and their Effects on Costs and Emissions in Canadian Industry
2. Shahzad Hussain, Impact of Methane and catalyst concentration upon the FCCVD synthesis of carbon nanotubes
3. Tamilazhagan Palanivel, Mohamed Mamlouk, Simon Doherty, Bruno G. Pollet, Composite anion exchange membranes based on functionalized graphene oxide and polyterphenylene piperidine for water electrolyser applications
4. Franciska Toth, Understanding the Role of Carbon Liquid-Like Depositions on Reactor Surfaces during Hydrogen Production
5. Da Huo, Pegah Mirzania, Nazmiye Balta-Ozkan, Techno-economic assessment of green hydrogen production systems in UK agriculture sector
6. Sharwari Dixit, Assessing the Extent of Hydrogen Integration in the UK's 2050 Decarbonisation Pathways and Subsequent Distributional Impacts Using a Novel Agent-Based Whole Systems Model
7. Fiona McAllister, Exsolved Copper-Cerium Oxide Catalysts for Hydrogen/Ammonia Combustion with Zero-Emission
8. Chaewon Kim, Price Taker or Maker?: A Comprehensive Evaluation of Emerging Hydrogen Spot Indices
9. William Forshaw, Swappable Hydrogen Storage for Road Vehicles
10. Dlzar Al Kez, Aoife Foley, The Road to Certified Hydrogen: Challenges, Standards and Global Harmonisation
11. Adib Allahham, Sara Walker, Investment Decisions in a Liberalised Energy Market with Generation and Hydrogen-based Vector Coupling Storage in Integrated Energy System: A Game-Theoretic Model-based Approach
12. Jana Fakhreddine, Modelling fugitive hydrogen emissions and their climate impacts in global energy systems

The conference organising committee

Prof Nazmiye Ozkan
Prof Mohamed Mamlouk
Prof Rachael Rothman
Prof Meysam Qadrdan
Dr Bernardo Sarruf
Prof Goran Strbac
Prof Shanwen Tao
Prof Nick Voulvoulis