



Australian Hydrogen
Research Conference
16-19 February 2026
MELBOURNE

Hosted by

AHRN

THE AUSTRALIAN
HYDROGEN RESEARCH
NETWORK

Australian Hydrogen Research Conference 2026

As at 07 January 2026

Preliminary program subject to change

Monday, 16 February 2026

11:30-16:00

Site Visit 1: Viva Energy Hub, Geelong

11:30-16:00

Site Visit 2: The Calix Technology Centre, Bacchus Marsh

16:00-18:30

Registration Open (Promenade, 1st Floor, Sofitel on Collins, Melbourne)

17:30-18:30

Welcome Reception (Sofi's Lounge, Sofitel on Collins, Melbourne)

Tuesday, 17 February 2026

07:30-18:00

Registration

08:30-18:00

Exhibition & Poster Gallery

09:00-09:30

Conference Opening and Welcome

ChairPatrick Hartley

09:30-10:15

Plenary Session 1 - Grand Ballroom

ChairAndrew Dicks

Presentation title

Chemical hydrogen storage - systems, challenges and innovations

Speaker

Prof Peter Wasserscheid (The Friedrich-Alexander University of Erlangen-Nuremberg, Germany)

10:15-11:00

Morning Tea

11:00-13:00

Concurrent Session 1

Session

Concurrent 1A - Perth Room

Concurrent 1B - Sydney Room

Concurrent 1C - Brisbane Room

Concurrent 1D - Fitzroy Ballroom

Theme

Electrolysis

Underground hydrogen storage

Combustion & high-temperature industrial processes

Hydrogen policy & regulation

Chair

Jonathan Love

Stephanie Rees

Matthew Watson

Peta Ashworth

11:00-11:40

Keynote Speaker

Hydrogen production via steam electrolysis

Prof Hiroshige Matsumoto

Keynote Speaker

Beneath the surface: challenges and opportunities in underground hydrogen storage

Dr Joel Sarout

Keynote Speaker

Opportunities and challenges for hydrogen in the net-zero transition for heavy industry

Prof Gus Nathan

Keynote Speaker

The necessity of diverse knowledge for progressing the hydrogen industry

Dr Mitchell Scovell

11:40-12:00

Modelling the impact of elevated temperatures on mass transport in electrolysis

Muhammad Yousuf

Underground hydrogen storage - a demonstration pilot

Rod Harris

Investigation of velocity effects on large-scale hydrogen combustion modelling as an energy source for industrial drying applications

Sams Jarin

Hydrogen patents and publications: global trends and Australia overview

Peter Grubnic

12:00-12:20

Optimising water electrolyser system to improve green hydrogen production

Lixue Jiang

Underground hydrogen storage in the Otway Basin - H₂ interactions in geological formations

Regina Sander

Flame-acoustic interaction in hydrogen/natural gas flames

Mohsen Talei

Optimal temporal correlation for grid connected hydrogen certification: the interplay between grid characteristics and renewable resources

Chengzhe Li

12:20-12:40

Overcoming substrate pore size constraints in fabrication of BTSE-derived hydrogen-selective silica membranes

Derrick Ng

How low can you go? Exploring the minimum viable hydrogen mass for a pilot UHS project in the onshore Otway Basin, Victoria, Australia

Samuel Jackson

Ammonia-moderated hydrogen engine combustion

Alex Sherwood

Hydrogen electrolyzers as flexible loads: simulation studies and experimental tests on their grid support capabilities

Supun Meetiayagoda

12:40-13:00

Full pH range hydrogen evolution using MXene-supported dual-single-atom electrocatalyst

Jianan He

Monitoring of underground hydrogen storage in depleted fields

Jonathan Ennis-King

Predicting thermoacoustic stability limits in hydrogen-enriched gas turbines

Jeremias Flegler

Enhanced gas isotope capabilities for hydrogen and atmospheric methane: applications in sample containment and source fingerprinting

Se Gong

13:00-13:40

Lunch

13:40-15:20	Concurrent Session 2			
Session	Concurrent 2A - Perth Room	Concurrent 2B - Sydney Room	Concurrent 2C - Brisbane Room	Concurrent 2D - Fitzroy Ballroom
Theme	Natural hydrogen	Cryogenic & liquid hydrogen	Fuel cells	Social licence
Chair	Andrew Feitz	Saif Al Ghafri	Bahman Shabani	Mitch Scovell
13:40-14:20	Keynote Speaker Natural hydrogen systems in Australia: learnings from CSIRO's geogenic hydrogen project Dr Emma Frey	Modelling of long distance hydrogen transport on ships in liquid carriers Rupert Bachler 20 mins	Keynote Speaker Accelerating PEM fuel cell innovation through rapid prototyping and open source technology pathways A/Prof Michael Pereira	Keynote Speaker Unlocking impediments to a hydrogen industry at scale: Fact or Fiction? Prof Peta Ashworth
		Enabling future hydrogen infrastructure: design and optimisation of large-scale liquid hydrogen tanks Upeka Gunaratne 20 mins		
14:20-14:40	Experimental characterisation of natural hydrogen generation through fluid-olivine interactions under high-pressure high-temperature conditions Lingping Zeng	Weak nonlinear sloshing hydrodynamics in liquid hydrogen storage tanks Nisanga Nuwantha	High temperature PEM fuel cell development for hydrogen aircraft Andrew Dicks	Clearing the path for green hydrogen: stakeholder insights on approvals and obstacles Nehemia Gurusinga
14:40-15:00	Nickel-enhanced hydrogen production from iron minerals: implications for natural and engineered systems Emma Black	Re-evaluating the role of purification adsorbents in ortho-para hydrogen conversion for liquefaction systems Guinevere Sellner	Approaches and challenges in thermal management of high temperature proton-exchange membrane fuel cells Michael Opolot	Hydrogen futures in Central Queensland: expert perspectives after the 2025 federal election Analiene Barr
15:00-15:20	Life cycle assessment of natural hydrogen production: a modelling case study Mutah Musa	Ortho-para hydrogen adsorption analysis using diffuse reflectance infrared fourier transform spectroscopy at cryogenic temperatures Amin Kamiar	Reliability of hydrogen fuel cell based emergency power supply systems Kosala Gunawardane	Cautious curiosity: social licence for underground hydrogen storage in regional Victoria Molly Campbell
15:20-16:05	Afternoon Tea			
16:05-16:50	Panel Session 1: Australia's hydrogen industry policy: R&D aspects - Grand Ballroom			
Moderator	Patrick Hartley (Leader of Hydrogen Industry Mission, CSIRO Energy)			
Panellists	Catherine Zerger (Branch Head, Hydrogen, Australian Government Department of Climate Change, Energy the Environment and Water) Prof Ken Baldwin (Professor of Physics, The Australian National University) David Oglesby (Director of Renewable Energy Activation and Development, Victorian Government Department of Energy Environment and Climate Action)			
16:50-18:00	Poster Networking Session			
18:00-19:00	AHRN Town Hall Meeting - Victoria Suite 2			
Wednesday, 18 February 2026				
08:00-17:00	Registration			
08:30-17:00	Exhibition & Poster Gallery			
09:10 - 09:15	Introductory Remarks			
Chair	Tom Hughes			
09:15-10:15	Plenary Session 2 - Grand Ballroom			
Chair	Nikolai Kinaev			
09:15 - 09:35	State of Australia's hydrogen industry and role of R&D			
Speaker	Dr Fiona Simon (CEO, Australian Hydrogen Council)			
09:35 - 10:15	Metal hydrides based hydrogen storage solutions			
Speaker	Prof Pratibha Sharma (Indian Institute of Technology, India)			
10:15-11:00	Morning Tea			

11:00-13:00				
Concurrent Session 3				
Session	Concurrent 3A - Perth Room	Concurrent 3B - Sydney Room	Concurrent 3C - Brisbane Room	Concurrent 3D - Fitzroy Ballroom
Theme	<i>Techno-economic modelling</i>	<i>Hydrogen storage applications & materials</i>	<i>Green iron & steel</i>	<i>Hydrogen risk & safety</i>
Chair	Ken Baldwin	Ashleigh Cousins	Alireza Rahbari	Emma Frery
11:00-11:40	Keynote Speaker Economic modelling of hydrogen technologies Dr Jenny Hayward	Keynote Speaker Polymer coatings to reduce hydrogen embrittlement Prof Sandra Kentish	Keynote Speaker Hydrogen DRI: Where is it heading? Prof Geoffrey Brooks	Keynote Speaker Geoscience informing environmental risk in the hydrogen industry Dr Andrew Feitz
11:40-12:00	A techno-economic and environmental comparison of Fischer-Tropsch and methanol-to-jet SAF production Mehdi Parivazh	Sustainable hydrogen storage materials from cheap and widely available household materials Melinda Krebsz	Spatio-temporal techno-economic mapping of green steel production: an Australian case study Changlong Wang	Advancing safe hydrogen infrastructure: challenges, knowledge gaps, and research priorities Sara Ahmadi
12:00-12:20	Industrial hydrogen storage to support high-renewable grids Bin Lu	Room temperature hydrogen permeability of plastics, metals and ceramics Joshua Butson	Hydrogen fluidised-bed reduction of Australian hematite-goethite iron ores Daniel Lane	Advancing safety and reliability for large-scale deployment of hydrogen Fatemeh Salehi
12:20-12:40	Sustainable valorization of PET plastic waste via solar-powered electroreforming: a feasibility study on hydrogen and valuable chemical production Gavesha Gunasekara	Engineering nanoporous materials for achieving extremely high hydrogen densities for storage applications Valeska Ting	Studies of H ₂ direct reduction of iron ore in fluidised bed reactor and DRI smelting Kwaku Owusu	Understanding the hydrogen embrittlement behavior of welded high strength low alloy steels Shahid Parapurath
12:40-13:00	Cost analysis of hydrogen methanation in the Australian context Mohsen Talei	Thermodynamic modelling of a hydrogen tube-trailer filling process Matthias Welzl	Hydrogen plasma reactor: design, development, and application to oxide smelting and reduction Akbar Rhamdhani	Highly sensitive, selective and innovative hydrogen gas sensors Mahnaz Shafiei
13:00-13:40				
Lunch				
13:40-15:40				
Concurrent Session 4				
Session	Concurrent 4A - Perth Room	Concurrent 4B - Sydney Room	Concurrent 4C - Brisbane Room	Concurrent 4D - Fitzroy Ballroom
Theme	<i>Technical & economic evaluation</i>	<i>Underground hydrogen storage</i>	<i>International perspectives</i>	<i>Hydrogen risk & safety</i>
Chair	Melinda Krebsz	Jonathan Ennis-King	Mahnaz Shafiei	Fatemeh Salehi
13:40-14:20	Keynote Speaker Future directions for hydrogen energy research: why 'URFCs' and 'proton batteries' have a role to play Emeritus Prof John Andrews	A structured workflow to increase confidence in underground hydrogen storage feasibility assessments Jacqueline Sutton 20 mins Mined, lined rock caverns and their application for hydrogen storage Andrew Feitz 20 mins	Keynote Speaker He Honoka Hauwai / Green Hydrogen in New Zealand Prof Sally Brooker	Keynote Speaker Hydrogen and gas transmission pipeline structural integrity Prof Andrej Atrns
14:20-14:40	Techno-economic comparison of electrochemical compression via water electrolysis and mechanical compression of hydrogen Matthew Watson	The Petrel sub-basin: underground hydrogen storage potential Stephanie Rees	Invited Speaker Coping with the Dunkelflaute: power sector implications of variable renewable energy droughts in Europe Martin Kittel	Experimental investigation of impact of release temperature on hydrogen plume dispersion Qiang Ge

14:40-15:00	Assessing the impact from underground salt storage of hydrogen on Australian green iron and steel production potential Marcus Haynes	Simulation-based optimisation of underground hydrogen storage under supply-demand fluctuations Mohammad Sayyafzadeh	Invited Speaker Hydrogen programs and initiatives in India Ranjith Krishna Pai	An Australian field study of large-scale hydrogen-air explosions Alex Remennikov
15:00-15:20	Levelised cost of hydrogen compression for metal hydride-based compressors Ashleigh Cousins	Impact of hydrogen exposure on the mechanical properties of the Waarre sandstone formations - an experimental study. Jeremie Dautriat	Invited Speaker A mix of long-duration hydrogen and thermal storage enables large-scale electrified heating in a renewable European energy system Wolf-Peter Schill	Using artificial intelligence in the blast load prediction of unconfined hydrogen explosions Kirilous Gindie
15:20-15:40	Techno-economic evaluation of heavy-duty hydrogen powered prime movers, tipper trucks, excavators and front wheel loaders in an industrial environment Anthony Parrington	Short-term hydrogen storage in subsurface lenses Saeed Salimzadeh	A model intercomparison of international hydrogen supply chains under IEA/H ₂ TCP: lessons from ongoing analysis Yuki Ishimoto	Ignition hazard assessment of cryogenic hydrogen leaks in the presence of ambient wind Deepak Saini
15:40-16:25	Afternoon Tea			
16:00-17:15	IEA/H ₂ TCP Task50 Workshop in AHRC2026: Techno-economic workshop: How we can reduce costs and CI in international hydrogen supply chains? - Victoria Suite		16:25-17:10	Panel Session 2: How R&D can support hydrogen end-use in industry - Grand Ballroom
Facilitator	Dr Patrick Hartley (Leader of Hydrogen Industry Mission, CSIRO Energy)		Moderator	Gus Nathan (Research Director, Heavy Industry Low-Carbon Transition Cooperative Research Centre)
Panellists	Dr Jenny Hayward (Principal Research Scientist, CSIRO Energy) Dr Tara Hosseini (Team Leader, CSIRO) Dr Yuki Kudoh (National Institute of Advanced Industrial Science and Technology) A/Prof Yoku Nobuoka (University of Tokyo)		Panellists	Natasha Penno (Principal Advisor Operational Readiness, Rio Tinto Aluminium) Michael van Baarle (Executive Chairman, Abel Energy) Dr Matt Boot-Handford (Chief Scientist, Calix Ltd)
18:30-20:30	Cocktail Networking Reception, Investment Centre Victoria			
Thursday, 19 February 2026				
08:30-15:15	Registration			
08:30-13:45	Exhibition & Poster Gallery			
09:15 - 09:30	Introductory Remarks			
Chairs	Andrew Dicks & Patrick Hartley			
09:30-10:15	Plenary Session 3 - Grand Ballroom			
Chair	Ken Baldwin			
Presentation title	Hydrogen pathways in Australia - production costs and price expectations			
Speaker	Prof Andreas Löschel (Ruhr-Universität Bochum, Germany)			
10:15-11:00	Morning Tea			

11:00-13:00	Concurrent Session 5			
Session	Concurrent 5A - Perth Room	Concurrent 5B - Sydney Room	Concurrent 5C - Brisbane Room	Concurrent 5D - Fitzroy Ballroom
Theme	<i>Emerging hydrogen production pathways</i>	<i>Chemical & physical hydrogen carriers</i>	<i>Cryogenic & liquid hydrogen</i>	<i>Emerging hydrogen materials</i>
Chair	Bitu Bayatsarmadi	Valeska Ting	Tom Hughes	Craig Buckley
11:00-11:40	Keynote Speaker Ion beam engineered electrocatalysts for Hydrogen and Ammonia Prof John Kennedy	Chemical hydrogen storage using 3D printed structured catalysts Christian Hornung	Keynote Speaker Hydrogen technologies supporting domestic utilization and prospective exports Prof Eric May	Invited Speaker Organic-inorganic blended structures: possible catalysts for seawater splitting Nasir Mahmood 20 mins
		Enhanced LOHC dehydrogenation performance via carbon-based catalytic static mixer coatings with improved selectivity Marcel Disl		Low-cost and high-performance electrocatalysts for water splitting Jiayi Ding 20 mins
11:40-12:00	Hydrogen production from biomass via formic acid: a techno-economic and experimental investigation Patrick Schuehle	Modular hydrogel scaffolds for reversible hydrogen enclathration under mild conditions Lijin Chen	Linking ortho-para hydrogen kinetics to catalytic converter design: a quantitative review. Tom Hughes	Novel material design approach towards lightweight liquid hydrogen polymer composite tanks Susiri Costa
12:00-12:20	Sustainable valorization of beverage waste into 5-hydroxymethylfurfural using ZSM-5/KH ₂ PO ₄ catalyst: a route to green hydrogen production Sumaya Sarmin	Dehydrogenation of liquid hydrogen carriers in an integrated membrane flow reactor Christian Doblin	High-temperature superconducting magnetic refrigeration enables hydrogen liquefaction use in heavy vehicles Saif Al Ghafri	Hydrogen materials for heavy industrial applications Lachlan Carter
12:20-12:40	Desalination technologies: an undervalued opportunity for rapid scaling of renewable hydrogen systems Pranjal Kumar	Sodium borohydride hydrolysis for hydrogen export: catalyst design and reactor development Terry Humphries	Detailed simulation of a liquid H ₂ plant including ortho-para hydrogen conversion Fuyu Jiao	Scalable magnetron-sputtered catalysts for pH-universal and (photo)electrochemical water splitting Farid Attar
12:40-13:00	A description of the untapped potential of PEM water electrolysis Pierre Millet	Degradation pathways of intermetallic metal hydrides under isochoric thermal cycling: establishing a baseline for machine-integrated hydrogen storage alloy Evan Gray	Towards cost-effective hydrogen liquefaction: rare-earth intermetallic with enhanced magnetocaloric properties Mahboobeh Shahbazi	In silico investigation of advanced functional materials for hydrogen adsorption, separation, and transport Anjaiah Nalaparaju
13:00-13:45	Lunch			
13:45-14:30	Panel Session 3: Navigating the startup journey for hydrogen technologies - Grand Ballroom			
Moderator	Karen Kozielski (Deputy Lead of CSIRO's Hydrogen Industry Mission)			
Panellists	Chris Rowland (CEO, Hadean Energy) Sam Rowe (Engineering Manager, Energys Australia) Dr Jehan Kanga (CEO, Rux Energy)			
14:30 - 15:00	Conference Close and Award Presentations - Grand Ballroom			
Chairs	Andrew Dicks & Patrick Hartley			