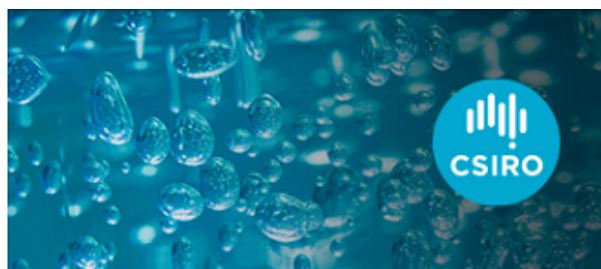


AHRN



AHRN Newsletter March 2023

The Australian Hydrogen Research Network (AHRN) is the community of researchers and interested stakeholders supporting the emerging hydrogen industry. We foster excellence in hydrogen-related research through an ongoing program of seminars and knowledge-sharing activities. By providing thought leadership, advocacy, and research tools, the AHRN offers its members domestic networking opportunities as well as access to international collaborations.

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Australian Hydrogen Research Conference 2023

After months of preparation, we had a hugely successful first conference earlier this month. The picture below taken during the first plenary session shows that the hall at the ANU Kambri Centre could barely take the 326 actual attendees. The conference was opened by Jenny McAllister, the Assistant Minister for Climate Change and Energy in the Albanese Labor Government, after which we were inspired by a talk given by Dr Alan Finkel, former Chief Scientist of Australia and architect of the National Hydrogen Strategy. His speech can be downloaded [here](#).

The conference program was a mixture of plenary sessions and four parallel sessions over the three days all of which illustrated both the breadth and depth of research being undertaken by participants in Australia and in other countries. We were especially pleased to welcome the ExCo members of the International Energy Agency Hydrogen Technology Collaboration Program, the DFAT delegation from ASEAN countries and other visitors from overseas.



Special thanks to co-chair Prof Ken Baldwin from ANU and the conference committee (below) for bringing the event together. A special mention to Andrew Feitz and the people at Geoscience Australia who facilitated site visits the day before the conference. These were greatly appreciated, especially by our overseas visitors.

Several people have remarked afterwards that this research conference had an amazing buzz from the opening reception right to the end. There was no drifting away of delegates that is often the case with other conferences. There was a lot to take on board, sessions were often filled to overcapacity (note for next time), but even so 219 of the delegates attended the dinner at the National Museum of Australia. This was a great location for researchers to interact and explore future cooperation in a relaxing setting. It was obvious to the organising committee that this was to be the first of many hydrogen research conferences.



Conference committee (L to R), Aleks Kalinowski (Geoscience Australia), Andrew Dicks (AHRN), Dan O'Sullivan (CSIRO), Ken Baldwin (ANU), Andrew Feitz (GA), Paul Medwell (Adelaide University), Bahman Shabani (RMIT), Siva Karuturi (ANU, and conference chair), Mahshid Firouzi (Newcastles University).

AHRN to become a non-profit association.

During the AHRC2023 dinner it was announced that this year the AHRN will become a subscription-based non-profit association. Whilst maintaining our close associations with hydrogen stakeholders such as the CSIRO, this will give the research community greater freedom to organise its own events and other activities. Building on what has been achieved over the past 18 months, the new arrangements should promote greater collaboration both within Australia and internationally. We propose the following grades of membership for hydrogen researchers and stakeholders: Member, Graduate, Student, and Retired/Emeritus. Further details of the new association and rules will be published in a future newsletter but the following are the expected benefits that the new association will be able to provide members:

- Monthly newsletters and research seminars
- In-person seminars and site visits at reduced membership rates
- Access to hydrogen activities such as Standards Australia, the Engineers Australia Hydrogen Technical Series, other training modules.
- Opportunity to contribute to topical papers in hydrogen*
- Reduced registration rates for Australian Hydrogen Research conferences.
- A website CMS platform and blog for members
- Access to international research fellowships, projects and funding
- Links with other relevant organizations including clusters, hubs and government agencies
- Establish industry standards (for example, the first Australian Community of Practice for Hydrogen Safety is being drafted by a AHRN Working Group)
- Annual peer nominated awards
- Opportunity to apply for research governance committees and panels

* Our first topical status paper is “**Hydrogen Production by Water Electrolysis – an introduction to the technologies and their status.**” Available from: <https://hydrogenaustralia.org/AHRNEP.pdf>

Anyone interested in taking an more active role in the AHRN as we move to a new association format should contact Andrew Dicks at adicks@ah2rn.org.au or phone 0458077727.

Hydrogen Research and Development Status Report

In 2019 the CSIRO produced a report that summarised the status of Australian hydrogen R&D. Since then much has changed within the research community and the hydrogen industry. Readers will be aware of the HyResource and HyResearch online portals that contain up to date information on the various projects and research activities within Australia. The status of hydrogen R&D has now been summarised in a short status report that can be downloaded [here](#).

International fellowship program – still open !

The Australian government International Research Collaboration Program has selected the following research fellows in the first round of selections:

- Hongjun Chen, The University of Sydney
- Yi-Sheng (Eason) Chen, The University of Sydney
- Christian Hornung, CSIRO
- Yuhan Huang, University of Technology Sydney
- Hao Liu, University of Technology Sydney,
- Tuan Nguyen, The University of Melbourne
- Fatemeh Salehi, Macquarie University
- Mahnaz Shafiei, Swinburne University of Technology

- Helena Wang, Deakin University
- Sam Xie, Curtin University
- Zongyou Yin, Australian National University

These fellows are busy preparing to visit world class research institutions and labs across the globe to undertake between 3 to 12-month research. We wish them well!

A second-round selection will soon take place. We really encourage you to consider applying to take up this lifetime opportunity. Eligibility and selection criteria details: <https://ahrn.org.au/>

Next Research Seminar – 29th March 2022 12pm AEDT ***Engineering the Quantum Mechanics of Cold Hydrogen***

We are pleased to announce that our next online seminar will be presented by Associate Professor Jacob Leachman from the School of Mechanical and Materials Engineering at Washington State University (WSU), USA. Dr Leachman initiated the Hydrogen Properties for Energy Research (HYPER) laboratory at WSU in 2010 to advance cryogenic and/or hydrogen systems. To this day the HYPER laboratory remains the only US academic laboratory focusing on cryogenic hydrogen. His talk will culminate in a vision for the future of hydrogen technologies and an invitation for Australian researchers to participate.



Associate Professor Jacob Leachman

Other Australian News

New fuel cells insight published in Nature

The team, featuring Professor Ryan Armstrong, Professor Peyman Mostaghimi, Dr Ying Da Wang, and Kunning Tang from the School of Mineral and Energy Resources Engineering and Prof Chuan

Zhao and Dr Quentin Meyer from the School of Chemistry, developed the algorithm to improve the understanding of what is happening inside a Proton Exchange Membrane Fuel Cell (PEMFC).

Hydrogen Industry technical series – Melbourne – 15 February to 19 April 2023 (5:30pm to 8:30pm AEST) Delivered by leading hydrogen industry practitioners, the program covers integral topics required by engineers to commence practising in the hydrogen industry. The objective of the program is to provide detailed information on the technical and practical aspects of hydrogen plant design, operation and product development.

<https://www.engineersaustralia.org.au/learning-and-events/conferences-and-major-events/hydrogen-industry-technical-series>

WA government prepares to legislate 2050 net zero carbon emissions target

The WA government has announced plans to enshrine its commitment to net zero carbon emissions by 2050 in law, but will not set targets to get there until at least the end of the year. The McGowan government had [already committed to reducing public sector emissions by 80 per cent by 2030 compared to 2020 levels](#), and to become net zero by 2050, but these new goals will apply to the entire economy.

Future Hydrogen Events

16-17 March Future Hydrogen Congress Australia <https://www.szwgroup.com/future-hydrogen-congress-australia/index.aspx>

15-17 March AOG Energy – Perth Convention and Exhibition Centre <https://aogexpo.omn.au>

15 February to 19 April (5.30 pm to 8.30 pm) Hydrogen Industry Technical Series

25-26 July Connecting Green Hydrogen APAC 2023 – Melbourne

<https://apac.gh2events.com/agenda>

6-7 September Second Annual Hydrogen Connect Summit, Brisbane Convention and Exhibition Centre <https://hydrogenconnect.com.au>