GlobH2E

ADVANCING THE HYDROGEN ECONOMY IN AUSTRALIA

Australian Government
Australian Research Council

Championed by the University of New South Wales (UNSW), the ARC Training Centre for The Global Hydrogen Economy (GlobH2E), in partnership with leading Australian and global research institutions, industry partners, government agencies and start-ups; draws on strong research, engineering experts, unique skills and specialised knowledge to meet a range of technological and logistical challenges.

UNSW SYDNEY
THE UNIVERSITY OF QUEENSLAND AUSTRALIA
THE UNIVERSITY OF SYDNEY
MONASH University
THE UNIVERSITY OF NEWCASTLE AUSTRALIA
Curtin University

The hydrogen industry is already worth more than $100 billion per year and is on the cusp of rapid growth. Hydrogen research is quickly advancing and the race to commercialise proven and reliable hydrogen technologies is critical.

Australian industry can play a leading role in creating a hydrogen export market with associated benefits in the domestic economy; while supporting the transition to low emissions energy, improving the resilience of energy systems, and providing consumers with cost-competitive energy options.

Vision and purpose

Our innovative, cost-effective hydrogen technologies, combined with advanced business skills, will facilitate and support Australia's transformation into a world-leading hydrogen powerhouse.

Train

Research

Educate and disseminate

Enable

Reduce risk

Centre Directors

Scientia Professor Rose Amal

Co-Director of ARC Training Centre

Professor Francois-Aguey Zinsou Kondo

Co-Director & Theme Leader - Hydrogen Storage

World-leading hydrogen research and innovation

Hydrogen Production

Led by Prof Chuan Zhao (UNSW Sydney), our hydrogen production research explores robust, high-performance, low cost catalysts for hydrogen generation and fuel cells; electrolyser design and prototyping for hydrogen generation; and Hydrogen generation from organic waste - reactor design and prototyping.

Hydrogen Safety

Led by Prof Behdad Moghtaderi (University of Newcastle), we investigate safety around the hydrogen supply chain; Deflagration to Detonation Transition (DDT) phenomenon in premixed hydrogen-oxygen mixtures; and mathematical modelling of DDT phenomenon in premixed hydrogen-oxygen mixtures.

Hydrogen Storage & Utilisation

Led by Prof Francois Aguey Zinsou (University of Sydney), we research advanced approaches to store hydrogen in solid forms with materials and advanced technologies for enabling the use of hydrogen/methane blends.

Value Chain & Business Models

Led by Prof Iain Macgill (UNSW Sydney), we undertake techno-economic analysis of commercial hydrogen generation in Australia; research the Hydrogen value chain and model the transformation of the economy; and investigate early markets for hydrogen.

Social License & Education

Led by Prof Peta Ashworth (University of Queensland) we explore community perception toward hydrogen production from large scale renewable projects and hydrogen utilisation in residential settings; and disseminate information to the specialised and broader community.

PhD Profile: Jack Shepherd

I'm passionate about decarbonising our society to safe-guard our future and future generations and believe significant carbon reduction can be achieved within the industrial sector to meet our 2050 net zero target.

I have the privilege to follow my passion in decarbonisation by pursuing a PhD focusing on the techno-economic analysis of hydrogen and hydrogen derivative value chains that can compete with existing processes and bring about deep decarbonisation benefits. My research is centred on developing techno-economic models that can be used to assess different hydrogen and hydrogen derivative (e.g., ammonia) generation and utilisation pathways. By harnessing the power of open-source models, stakeholders interested in hydrogen-based projects can use the models developed in my research to accelerate their plans through the feasibility phase and begin to realise their decarbonisation targets.

Become a Partner

Get involved in relevant, leading hydrogen research to co-develop cutting edge technologies to meet industry challenges and/or manufacturing capabilities

Develop new processes and products that generate new revenue streams and value-adding products whilst ensuring environmental sustainability and stay at the forefront of innovation

Initiate or strengthen a long-term strategic relationships with Australian universities and research institutions and other key players in the industry including end users;

Access state-of the art research laboratories, equipment and related facilities at six universities across Australia

Access a network of expert supervisors across a range of disciplines and opportunity to collaborate with other industry partners

Access relevant policy and regulatory development and opportunities to participate in the formulation of relevant industry standards

Build capabilities in line with industry's future workforce needs and enhance profile and standing as employer of choice that support transition to low-carbon economy

Take opportunities to lead and shape the innovation and research agenda to directly benefit your needs and to provide evidence to inform policies critical to Australia's future energy development

Draw up initial theme or project to recruit students and postdoctoral researchers

Host students as interns to work on your projects

Gain early access to research results (with the potential to commercialise these)

Attend industry events that provide an opportunity to experience research across the centre and engage with other students and partners

Your contribution:

- $25,000 per year for 4 years to support a PhD project, OR
- $50,000 per year to support a project carried out by an experienced research associate to quickly de-risk a project that could benefit your business
- Access to facilities, equipments, databases and information to support your project
- Be an integral part of the Training Center and benefit from its network
- Host graduate students and engineer researchers in a work placement to help develop the workforce that may benefit your business
- Host site visits for Training Centre personnel

Contact us

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