



Kickstart your career with CSIRO's Industry PhD

Earn your PhD in partnership with industry, a leading university, and Australia's national science agency, CSIRO.

The CSIRO Industry PhD Program (iPhD) is a research training program, focusing on applied research that benefits industry by solving real-world challenges. It aims to produce the next generation of innovation leaders with the skills to work at the interface of research and industry in Australia.

The opportunity

- Admission to a university PhD program
- A four-year scholarship valued at \$46,000 per annum (2024 rate)
- A project expense and development package of up to \$13,000 per annum
- Supervision by CSIRO, an industry partner and the host university
- A 60-day Industry Engagement component with the industry partner
- A structured professional development and training package

Successful students will receive a PhD on completion.

Eligibility requirements

The student must:

- Be an Australian citizen or Permanent Resident, or a New Zealand citizen.
- Meet participating university PhD admission requirements.
- Meet university English language requirements.
- Not have previously completed a PhD.
- Be able to commence the Program in the year of the offer.
- Enrol as a full-time PhD student.
- Be prepared to be located at the project location(s) that the host university has approved and, if required, comply with the host university's external enrolment procedures.
- Be prepared to undergo onboarding to CSIRO, which will include passing mandatory government background checks (allow for between 4 to 8 weeks) and complete any other CSIRO requirements.

Application process

- Applicants submit an expression of interest (EOI) by emailing the university supervisor, or by following the instructions on the university's webpage, when available. Applications are open until position is filled.
- The EOI is assessed by the supervisory team and shortlisted applicants are interviewed.
- The supervisory team nominates a preferred applicant
- The application is assessed by the university against PhD admission criteria.
- The university will issue a letter of offer for the program if all conditions have been satisfied.

Project overview

Natural hydrogen production in fault zones

Hydrogen will play a pivotal role in Australia's transition to a net-zero emissions energy future. Currently, hydrogen production involves two pathways: thermochemical and electrochemical. Thermochemical methods utilise fossil fuel feedstock, while electrochemical processes generate hydrogen and oxygen by splitting water using renewable energy resources. Although electrochemical production represents a smaller fraction of manufactured hydrogen, it shows promise for decarbonisation. While the international exploration and production of natural hydrogen have grown significantly in recent years, our understanding of the system remains limited. Numerous countries, including France, Canada, Spain, Italy, Oman, Columbia, and Iceland, are experiencing a surge in hydrogen exploration permits and new discoveries. Australia, having recently been awarded over 25 exploration permits in South Australia, is well-positioned to join this global 'hydrogen-rush'.

This Project focuses on investigating and unravelling the processes leading to natural hydrogen production within geological faults, combining classical petroleum system analysis with mineral system analysis. This holistic approach will provide valuable insights both for (i) exploration and extraction of hydrogen from geological formations and (ii) the fundamental understanding of H2 evolution within the crustal environment.

SUPERVISORY TEAM DETAILS	
The University of Western Australia	Nico Thebaud nicolas.thebaud@uwa.edu.au
CSIRO	Emanuelle Frery emanuelle.frery@csiro.au
H2EX Ltd	Ian Sylvester ian.sylvester@h2ex.com.au www.h2ex.com.au

Ideal student skillset

Essential

- Undergraduate training in geosciences.
- Experience in field base structural geology.

Desirable

- Experience in petrography and/or fluid inclusions.

PROJECT LOCATIONS	
Primary location	The University of Western Australia, 35 Stirling Highway, Crawley WA 6009, Australia
Industry Engagement component location	H2EX office (WA) and Eyre peninsula (SA)
Other locations	CSIRO, Energy Resources, 26 Dick Perry Avenue, Kensington WA 6151, Australia



FOR FURTHER INFORMATION

- Visit the [iPhD website](#)
- Contact the project's supervisory team
- Contact the [iPhD team](#)

