



THE UNIVERSITY
of ADELAIDE



Faculty of Engineering, Computer and Mathematical Sciences

EFFICIENT HYDROGEN PRODUCTION THROUGH HYBRID SULPHUR CYCLE

Up for a challenge? Join us to work on a research project with the School of Mechanical Engineering

At a Glance

Who can apply?

- Australian Citizens
- Onshore International students
- International applicants

Industry partner or funding body

- [Australian Solar Thermal Research Initiative](#) (ASTRI)

Program of Study available

- Doctor of Philosophy (PhD)
- Master of Philosophy (MPhil)

Total annual stipend amount

- \$38,597pa (if Commonwealth RTP scholarship secured)

Start date

- Plan for a start date from 1 February 2021.

About the project

This exciting project funded by the [Australian Solar Thermal Research Initiative](#) (ASTRI) focuses on the development of a new generation of low-cost green hydrogen production technologies, employing a hybrid between concentrated solar thermal energy (CST) and electrolysis. The project will provide new understanding to support the development of a novel solar hybrid

sulphur cycle technology to thermocatalytically dissociate SO_3 using molten metal catalysts in a bubbling environment to achieve high rates of heat and mass transport. This will build on the novel [solar bubble receiver/reactor](#) (SBRR) technology recently demonstrated at the University of Adelaide's [Centre for Energy Technology](#). The project will be undertaken in partnership with [DLR \(German Aerospace\)](#), [CSIRO](#) and [BHP](#) and is expected to include an international research visit. It will suit graduates from Mechanical Engineering, Chemical Engineering or Physics and will be supervised by [Dr Mehdi Jafarian](#) and [Prof Graham 'Gus' Nathan](#).

Eligibility criteria

Eligible applicants must:

adelaide.edu.au

- Have completed a relevant Bachelor degree with First Class Honours, or a Masters degree that contains a significant (and relevant) research component with equivalent academic performance. Students who hold an Honours degree in Chemical Engineering, Mechanical Engineering or Physics will be considered favourably.
- Be interested in the Heat transfer, Reaction Engineering, Thermo-fluids, Concentrated solar thermal research.
- Fulfil the minimum English language requirement (for international applicants).
- Be willing to provide your personal details to ASTRI by way of a Student Deed Poll.
- Be assessed by the [Adelaide Graduate Centre](#) as meeting all conditions for admission to the Doctoral program.
- Be living in or able to relocate to Adelaide, South Australia, for the duration of the scholarship.
- Not hold a qualification at the same or at a higher level than the research higher degree program you are undertaking.
- Not be receiving a living allowance award, scholarship or salary providing a benefit greater than 75% of the RTP Scholarship living allowance rate to undertake the research higher degree program.
- Students applying for this scholarship should plan for a start date from 1/02/2021.

Benefits

- Access to authorised travel and research project funds available
- Work alongside world leading researchers
- Our CaRST program: Free professional development to enhance your employability skills
- Exposure to industry networks and experts in the field

- No Tuition fees! These are waived for eligible candidates
- Access state of the art technology
- Become a field expert and make a real and contribute to solving global challenges
- Publish your contributions and impact our communities and society

How to apply

- Complete an [expression of interest](#) and email together with a copy of your CV and transcripts to Dr. Mehdi Jafarian mehdi.jafarian@adelaide.edu.au
- Once your initial eligibility assessment is approved, formally lodge an application for admission and scholarship via the Adelaide Graduate Centre 'How to Apply' [link](#). **Application dates are listed on the website.**

Researcher Profiles

- Use our [Researcher Profiles](#) to find out more about potential supervisors

More about ECMS

The Faculty of Engineering, Computer and Mathematical Sciences is home to world-class research institutes and centres, and internationally renowned academics at the cutting edge of research and discovery.

We are a thriving centre of learning, teaching and research in a vast range of engineering disciplines, computer science, machine learning and high-level mathematics as well as designing Human-centred, sustainable futures in our School of Architecture and Built Environments.

Many of our academic staff are leaders in their fields and graduates are highly regarded by employers.

Learn more about the Faculty of Engineering, Computer and Mathematical Science's Research

capabilities at:

<https://ecms.adelaide.edu.au/research-impact>

The University of Adelaide is an Equal Employment Opportunity employer. Women and Aboriginal and Torres Strait Islander people who meet the position requirements are strongly encouraged to apply.

FURTHER INFORMATION

For a confidential discussion contact:

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