

HDR PROJECT SUMMARY

ADVANCED EXPERIMENTS IN THERMO-FLUIDS RELATED TO NET-ZERO EMISSION INDUSTRIES

HDR PROJECT DESCRIPTION

This Scholarship is to support a full time PhD student who is undertaking research in thermo-fluid experiments with a focus on use of advanced optical diagnosing methods to study flow dynamic, heat transfer and reactions in lab-scale flows, such as isothermal and reacting particle-laden flows, fluidised beds and hydrogen flames, and on pilot-scale industrial reactors. This HDR project is a great opportunity for next generation scientists and engineers who are willing to work on thermal engineering (but not limited to) with unique experimental knowledge and skills.

PROJECT OBJECTIVES

The outcomes from this HDR project are vital to advance understanding of the emerging net-zero reactor technology and to enable them to be designed and upscaled reliably.

PROJECT SCOPE

The successful candidate is expected to participate in several research activities of HILT CRC to develop and apply advanced optical imaging methods to conduct measurements of key parameters in industry-related flows, including temperature, velocities, particle size distribution, residence time and volume fractions.

QUALIFICATIONS AND EXPERIENCE

Schools of Mechanical Engineering, Chemical Engineering or Physical Science.

To determine your eligibility for studying at The University of Adelaide visit: adelaide.edu.au/graduate-research

For further enquiries and more details, please contact Dr Zhiwei Sun:

Email: zhiwei.sun@adelaide.edu.au

Telephone: +61 8 8313 2310

PRIMARY UNIVERSITY SUPERVISOR

- Dr Zhiwei Sun,
The University of Adelaide

CO-SUPERVISOR

- Professor Graham Nathan and
Dr Alfonso Chinnici, The
University of Adelaide

PROJECT PARTNER

- The University of Adelaide

PROJECT TYPE

- Masters and PhD

DATE ADVERTISED

- Monday 13 November 2023

HILT CRC POSTGRADUATE PROGRAM

Are you interested in receiving training from world-leading researchers, whilst working with industry partners on real-world problems?

Join the HILT CRC postgraduate program for a research career in de-risking decarbonisation for heavy industry.

Through engagement with industry and universities we are committed to training the heavy industry workforce of the future through practical, demand driven research projects with world-leading teams and facilities.

We offer Higher Degrees by Research (HDR) through a PhD or Masters qualification for up to 3.5 years duration, providing you with the opportunity to acquire world-leading training in a field of growing demand to take your engineering career further.

By joining our postgraduate research program, you will work on real industry problems and challenges with the potential for immediate high-impact practical results to decarbonise heavy industry.

When undertaking a research degree with us, you will also gain:

Expert knowledge – designed specifically for the heavy industry sector and draws on your foundation of engineering knowledge by developing further skills tailored to transitioning the steel, iron, alumina and cement industries to reduce heavy industry's carbon emissions.

Invaluable networking opportunities and professional development – benefit from opportunities to collaborate and network with multiple industries and research experts and teams via participating in the HILT CRC specialised webinars, yearly conferences, and master classes.

Career outcomes – linked with industry and government, you will gain hands on industry experience to help you develop the skills required to operate in a new low-carbon economy, become an expert in your field, and enhance your employability.

A platform for communicating your findings – your research findings may be presented at industry conferences, published, commercialised and in turn, create a positive impact on society.

Financial Support and Scholarships

We can provide full, co-funded or top-up scholarships to eligible postgraduate students (Higher Degree by Research students at both Master and PhD levels) across our three research programs at our partner universities. The distribution of funding is at the discretion of the principal (main) supervisor of the project and may be used for student stipend, costs associated with the research project or other expenditure related to the project.

Any student interested in undertaking a postgraduate scholarship is encouraged to review the [Scholarship Guidelines](#) and complete the [HDR Scholarships Application Form](#). Details for how to apply for postgraduate scholarships are included in the guidelines.

How to Apply

All HILT CRC prospective postgraduate students are required to enrol in their degree through their host institution as per the normal university application process. Therefore, students need to meet the requirements stipulated by the host university to enrol (e.g. appropriate Honours or Masters degree).

Further Information

For more details about the postgraduate research opportunities and projects, and financial support with HILT CRC, contact us at hdr@hiltcrc.com.au