TUS
Technological University of the Shannon
Midlands Midwest
Ollscoil Teicneolaíochta na Sionainne:
Lár Tíre Iarthar Láir

POSTGRADUATE RESEARCH OPPORTUNITY

Project Title: Advanced Materials and Hydride Reactor Design for Solid-State Hydrogen Storage

Short Project Description: This PhD project will focus on the development of advanced solid-state hydrogen storage technologies for clean energy applications. The research will investigate innovative materials-based approaches to improve the efficiency, stability and practical performance of hydrogen storage systems. The project will combine experimental materials development and characterisation with computational modelling, data-driven analysis and hydride reactor design and engineering. The researcher will contribute to the development and evaluation of advanced hydrogen storage materials, together with the design, modelling and development of a laboratory-scale hydride reactor for efficient hydrogen storage and thermal management. The research will provide interdisciplinary training across materials science, mechanical engineering, hydrogen energy, computational modelling and advanced manufacturing. The work will be undertaken within the Hydrogen Energy Innovation research environment at TUS, with opportunities for collaboration with academic and industrial partners. The project aims to contribute to the development of safer, more efficient and scalable hydrogen storage technologies for future clean-energy applications.

Type of Degree Offered: PhD (Doctor of Philosophy)

Duration of Project: 4 Years

Funding Agency: Sustainable Energy Authority of Ireland (SEAI) – National Energy Research, Development & Demonstration (RD&D) Programme.
Stipend: €2,000 per month, with tuition fees and research consumables fully covered.

Minimum Qualifications/Experience Necessary/Any Other Requirements:

The candidate must have a primary degree (Level 8 or equivalent) in a relevant engineering or science discipline, such as Mechanical Engineering, Materials Engineering, Manufacturing Engineering, Chemical Engineering, Energy Engineering, or a closely related field.

Minimum classification of 2.1 Honours or equivalent.

Applicants should have an interest in one or more of the following areas: hydrogen energy, materials development, thermal/energy systems, computational modelling, reactor design, or advanced manufacturing.

IELTS [International English Language Testing System]: Applicants must have a minimum overall score of 6.5, with no component score less than 6.0.

Project Lead Supervisor: Dr Amit Haldar

For further information, please contact: amit.haldar@tus.ie

Closing date for receipt of completed application form is 10/10/2026. Interviews will take place within subsequent weeks.

Download TUS Scholarship application form below, put project title in the subject line and email pro@tus.ie:
https://tus.ie/rdi/research/office/funded-research/