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

POSTGRADUATE RESEARCH OPPORTUNITY

Project Title: Algae-Based Edible Films for Animal Protein Packaging

Short Project Description: This project will explore the development of edible films and coatings made from algae-derived materials for use in food packaging, particularly for animal protein products such as meat and seafood. The aim is to investigate how marine-based polysaccharides can be used to create thin protective layers that help control oxygen and moisture transfer at the food surface. The student will develop and test algae-based film or coating formulations and assess their key properties, including barrier performance, moisture behaviour, and potential protective effects on food quality and shelf life.
The project integrates sustainable materials development, food packaging science, and marine bioresource innovation, with applications in meat, seafood, and other high-value protein products. The successful candidate will work within the PRISM Research Institute at TUS, contributing to applied research aligned with Ireland's bioeconomy, circular economy, and sustainable packaging priorities.

Type of Degree Offered: MSc in Polymer Engineering

Duration of Project: 24 months

Funding Agency: Technological University of the Shannon (TUS) - Co-Centre for Sustainable Food Systems, Research Ireland. The scholarship includes fees of €5,500, annual stipend of €25,000 and materials/consumables budget.

Minimum Qualifications/Experience Necessary/Any Other Requirements:

A primary degree (minimum 2.1 Honours or equivalent) in:

- Polymer Science and/or Polymer Engineering
- Chemistry
- Microbiology
- Food science
- or other closely related disciplines

Strong interest in:

- Experimental laboratory work
- Sustainable, bio-based and/or biodegradable materials
- Food packaging and shelf-life applications
- Materials characterisation and performance testing

Desirable (but not essential):

- Experience with polymer processing, film/coating development, or materials characterisation techniques, mechanical testing, or permeability testing
- Knowledge of biodegradable materials, green chemistry, marine bioresources, or food packaging systems
- Basic data analysis skills
- Previous research experience, project work, or publications in a related area

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

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The project will be hosted at the PRISM Research Institute, Technological University of the Shannon (Athlone campus), with access to advanced facilities for polymer synthesis and processing, thermal and mechanical analysis, microbiology and chemistry

Project Supervisory Team:
Project lead supervisor: Dr Romina Pezzoli
Co-Supervisors: Dr Declan Colbert and Dr Declan Devine

For further information, please contact:

Dr Romina Pezzoli; romina.pezzoli@tus.ie

Closing date for receipt of completed application form is 3rd of July 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/