



PhD Scholarship in Geotechnical Engineering

Position description: Applications are invited for a fully funded 4-year PhD position in Geotechnical Engineering. The expected start date is **Sep 2026**.

Durability of Bio-cemented Marine Sediments for Offshore Foundations

Research project: Offshore renewable energy relies on robust subsea infrastructure, including foundations for fixed turbines, anchoring systems for floating platforms, and seabed-laid pipelines and cables. In many shelf areas (including around Ireland), near-seabed sediments are often heterogeneous and exposed to strong currents and environmental loading, which can accelerate degradation and create long-term serviceability risks. This PhD project will investigate the long-term behaviour of marine soils improved through bio-mediated (biochemical) processes, with a focus on understanding the governing mechanisms. The research will combine controlled laboratory studies, microstructure characterisation, and modelling tools to connect fundamental processes to measurable performance changes.

Supervisors: Dr Budi Zhao, Prof. Shane Donohue (Co-supervisor)

Location: School of Civil Engineering, University College Dublin, Belfield, Dublin 4, Ireland

Stipend & fees: The successful candidate will receive a **stipend of €25,000 per annum** and the **full tuition fee coverage** for EU and non-EU applicants. Funding is available for four years, subject to satisfactory progress.

Industry/partner engagement: there will be opportunities to collaborate with research and industry partners in offshore energy.

Applicant requirements:

Eligibility: EU and non-EU applicants are welcome.

Applicants should have a first-class or upper second-class honours degree in Geotechnical Engineering, Civil Engineering or a closely related discipline. Candidates should be highly motivated and able to plan and conduct research in increasing independence. Strong written and oral communication skills are required, and applicants must meet UCD's minimum English language requirements.

Desirable (not essential): Experience or strong interest in soil mechanics and geotechnical laboratory testing, data analysis/programming (e.g., Python/Matlab), and modelling.

How to apply

Please email one combined PDF (CV, transcript, and contact details for two referees) to budi.zhao@ucd.ie. Email subject: 'PhD Application – [Your Name]'. Shortlisted candidates will be invited to interview shortly after the deadline and may be asked to give a brief presentation on previous project/thesis.

Application deadline: 1st Feb 2026