

Post Specification

Post Title:	PhD Position 1: Establishment and Performance Evaluation of AGS System
Post Status:	Full-time.
Research Group / Department / School:	Civil, Structural and Environmental Engineering, School of Engineering, Trinity College Dublin, the University of Dublin
Location:	School of Engineering, Trinity College Dublin, the University of Dublin, College Green, Dublin 2, Ireland
Reports to:	Professor Muhammad Ali
Terms & Conditions:	annual stipend of €25,000 and a further €5,750 will be contributed to the annual fees for up to four years
Hours of Work:	9 – 5pm, Mon - Fri
Closing Date:	12 Noon (GMT), Monday, January 13, 2025

NOTE: Applicants must have been resident in an EU member state for 3 out of the last 5 years to be eligible for EU fees

Post Summary

The Department of Civil, Structural, and Environmental Engineering at Trinity College Dublin is seeking applications for three PhD studentships starting in March 2025. Each studentship will be dedicated to a specific work package within a cutting-edge project on sustainable wastewater treatment. Selected candidates will join an active, multidisciplinary research group led by Prof. Muhammad Ali, with expertise spanning environmental modeling, wastewater treatment, microbial ecology, and applied bioinformatics. This PhD position will focus on developing a novel Aerobic Granular Sludge (AGS)-based system for efficient, low-maintenance on-site wastewater treatment. The successful candidate will establish and operate the AGS system in a lab setting, conducting comparative performance analyses with other wastewater treatment technologies. This research aims to assess microbial ecology and provide insights

into nutrient removal efficiency, energy consumption, and emissions reduction. The role offers an opportunity to advance sustainable wastewater treatment solutions and produce high-impact publications. This position will be supervised by Prof. Muhammad Ali, with co-supervision by Professors Laurence Gill and Pascal Saikaly.

Standard Duties and Responsibilities of the Post

- Lead the setup and operation of AGS-based systems in the lab for performance evaluation.
- Conduct comparative analyses of AGS-based systems with other wastewater treatment technologies, focusing nutrient removal efficiency, sludge production, energy use, and emissions.
- Analyze microbial ecology within the AGS system using advanced genomic techniques.
- Evaluate the potential for retrofitting existing treatment systems with AGS-based technology and assess its performance with real wastewater.
- Contribute to high-impact publications on system performance, microbial insights, and technology comparisons.

Funding Information

This project is financially sponsored by Irish Environmental Protection Agency (EPA) and each PhD will get an annual stipend of €25,000 and a further €5,750 will be contributed to the annual fees for up to four years.

Qualifications

- MSc in Environmental Engineering, Microbiology, Bioprocess Engineering, or a related field.
- Experience in operating and maintaining laboratory-based wastewater treatment systems; experience with AGS systems is preferred.
- Knowledge of microbial ecology and/or metagenomics is advantageous.
- Strong communication and analytical skills with the ability to work independently and collaboratively

Skills & Competencies

- Strong analytical and communication skills (written and oral English).
- Ability to work both independently and as part of a team.

- Capacity to supervise graduate students, prepare high-impact manuscripts, and present findings at national and international conferences.

Application Procedure

Interested candidates are invited to complete the application form available at this link <https://forms.office.com/e/dD2nv35Gac>. Additional documents or information may be requested as needed. The deadline for submission is **Monday, January 13, 2025**. Only shortlisted candidates will be contacted for an interview.

If you have any questions regarding these positions, please contact Professor Muhammad Ali at **Muhammad.Ali@tcd.ie** and include the relevant PhD position title in the subject line.

Further Information for Applicants

URL Link to Advertisement	www.tcd.ie/engineering
URL Link to Human Resources	https://www.tcd.ie/hr/

