



## JOB DESCRIPTION

<b>Research Centre</b>	School of Biotechnology
<b>Post title</b>	Postdoctoral Researcher in Engineering
<b>Level on Framework</b>	Level 1
<b>Post duration</b>	9-month fixed-term Contract

### **Dublin City University**

Dublin City University (DCU) is a leading innovative European University. It is proud to be one of the world's leading Young Universities and is among the world's top 2% globally. DCU is known as Ireland's University of Impact, with a mission to 'transform lives and societies' and focuses on addressing global challenges in collaboration with key national and international partners and stakeholders.

DCU has over 20,000 students in five faculties spread across three academic campuses in the Glasnevin-Drumcondra area of North Dublin. Thanks to its innovative approach to teaching and learning, the University offers a 'transformative student experience' that helps to develop highly sought-after graduates. DCU is currently No. 1 in Ireland for Graduate Employment Rate, and for graduate income (CSO).

DCU is a research-intensive University and is home to a number of SFI-funded Research Centres. The University participates in a range of European and international research partnerships. DCU is also the leading Irish university in the area of technology transfer as reflected by licensing of intellectual property.

As a 'People First' institution, DCU is committed to Equality, Diversity and Inclusion - a University that helps staff and students to thrive. The University is a leader in terms of its work to increase access to education, and is placed in the world's Top 10 for reducing inequalities in the Times Higher Education Impact Rankings.

### **Background & Role**

Grain-4-Lab is a €2.4 million funded sustainability project, part of the SFI Future Innovator Prize Programme (<https://grain4lab.ie/>). The aim of the project is to reduce the reliance on fossil-fuel based single-use plastics in research laboratories, by providing a more sustainable and functionally equivalent alternative. In Grain-4-Lab we take waste products from the brewing and distilling industry and aim to produce a high quality bioplastic alternative.

We are a highly multi-disciplinary team which includes researchers from the fields of bioprocessing, materials science, polymer synthesis, societal change and scientific outreach. Grain-4-Lab operates in close collaboration with an international network of companies and collaborators to develop, test and trial their bioplastic solution. The project was recently featured on Irish national news channel RTE (<https://www.rte.ie/news/ireland/2022/1005/1327355-dcu-scientists/>).

The School of Biotechnology at Dublin City University invites applications for a postdoctoral researcher role in Microbial Bioprocess Engineering to work on the Grain-4-Lab project, valorising waste-streams using Lactic Acid Bacteria towards the development of compositable biopolymers. The position is available from July 2023.

The objective of this specific project is bioprocess development & optimisations, both Up-Stream and Down-Stream towards the production of high-quality Lactic Acid from waste feedstocks. Extensive bench-scale development & optimisation using Process Analytical Tools will be required along with pilot and production scale testing. This is an excellent opportunity for researchers looking to focus on commercialisation and industrial related research. The work will be undertaken in Microbial Bioprocessing Facility (School of Biotechnology) but the project will involve collaboration with the Schools of Physical Sciences, Chemical Science, and Nursing, Psychotherapy and Community Health in Dublin City University.

### **Principal Duties and Responsibilities**

Reporting to their Principal Investigator the Postdoctoral Researcher will:

- Conduct a specified programme of research under the supervision and direction of the Principal Investigator, with a specific focus on the development of a microbial bioprocess and down-stream purification methods including: waste-valorisation, fed-batch development, Design of Experiments (DoE), microfiltration, UF/DF and chromatography.
- Engage in the dissemination of the results of the research in which he/she is engaged with the assistance of and under the supervision of the Principal Investigator, with a specific focus on completing funding reports and preparing presentations and material for funding reviews.
- Supervise and assist undergraduate and postgraduate students working in this area with their research.
- Liaise with both internal and external stakeholders including industry and academic partners/collaborators.
- Carry out administrative work associated with the programme of research as necessary, including assisting the Principal Investigator in tendering for equipment and instruments required for the project

### **Minimum Criteria**

- Individuals should have a PhD in one of the following fields: Bioprocess Engineering, Chemical Engineering, or Microbial Biotechnology.
- Experience in bench-scale microbial bioprocessing, up-stream and down-stream processing techniques
- Individuals should be able to demonstrate their ability to work in multidisciplinary and high collaborative projects.
- Evidence of publication of research articles in the field of bioprocessing/microbial biotechnology/chemical engineering is also essential.

**Candidates will be assessed on the following competencies:**

**Discipline knowledge and Research skills** – Demonstrates knowledge of a research discipline and the ability to conduct a specific programme of research within that discipline.

**Understanding the Research Environment** – Demonstrates an awareness of the research environment (for example funding bodies) and the ability to contribute to grant applications.

**Communicating Research** – Demonstrates the ability to communicate their research with their peers and the wider research community (for example presenting at conferences and publishing research in relevant journals) and the potential to teach and tutor students.

**Managing & Leadership skills** - Demonstrates the potential to manage a research project including the supervision of undergraduate students.