



Research Centre Fraunhofer Project Centre for Embedded Bioanalytical Systems at Dublin City University (FPC@DCU) – a joint initiative of Science Foundation Ireland and Fraunhofer-Gesellschaft

Post title Research Assistant in cell culture, cell-line development and cell manipulation

Post duration Fixed term up to 31 December 2019

Background & Role

You develop microfluidics-based systems towards high technology readiness levels (TRLs) within FPC@DCU. Within FPC@DCU, you will work under supervision of the project PI. In this role you will have access to competent technical, infrastructural and administrative support and the opportunity to evolve a multi-faceted skillset in an environment where you closely collaborate with world-class Irish and international companies and research organisations. Further career opportunities will arise with the success of the FPC@DCU. You will also support the business development and project management teams of the FPC@DCU in their interactions with industry, academia and funding agencies. An emphasis of this project will be on the project μ PAT.

Project Summary: μ PAT – Microfluidic Process Analysis Technology for Streamlined Upstream Bioprocess Monitoring

The Lab-in-a-Trench chip and optical reader platform is a process analytical technology (PAT) solution for upstream bioprocess monitoring and optimisation, which will initially be exploited for cell media screening. At the upstream process stage, cell lines, media and culture parameters can all be optimised to for quality, high-yield production, prior to bioreactor production scale-up. This is a stage in the production process where appropriate PAT solutions can mitigate risk and improve product quality. Chinese hamster ovary (CHO) cells have served the biopharmaceutical industry for the past three decades. These are initially grown in shaker and / or spinner flasks over two to four weeks. Next, the cells are transferred to controlled bioreactors that, in turn, provide the seed culture for the production scale bioreactor. There is a significant opportunity for a rapid PAT solution that samples low amounts of cells and culture media at the flask growth stage in order to optimise the cell line, media and culture parameters. This technology to be developed will reduce staff resources subsequent to upscaling to bioreactor CHO cell growth.

We will target this stage in the production process, focusing on cell media screening as a lead application. The project is based on the microfluidic “Lab-in-a-Trench” platform implementing gravity-driven, high-efficiency sedimentation and retention of cells within a trench at the bottom of a flow channel. The cells may then be exposed to a series of conditions (e.g., cell media configurations, additional reagents) that diffuse from the main channel to interact with the trapped cells. The cells can be monitored in real time at single cell resolution, acting as reporter elements to assay the quality of various cell media formulations and batches. In addition, the cells can also be screened for stability, growth kinetics, and expression yields, along with their utilisation in sequential experiments for at-line process monitoring purposes.

Principal Duties and Responsibilities

Reporting to the μ PAT project Principal Investigator.

Technical duties will include but will not be limited to:

- Conduct a specified programme of research within the μ PAT Enterprise Ireland Commercialisation Fund Project under the supervision of the project PI.
- Mammalian cell culture methods
- Development of the appropriate sample preparation protocols required to facilitate cell assay implementation on the lab on a chip.
- Experimental characterisation and optimisation of the performance of cell assays implemented on the microfluidic platforms.
- Support, quality control and testing of developed microfluidic products
- Support of project management, reporting and interactions with partners
- Engage in the dissemination of the results of the research project, with the support of the Principal Investigator
- Authoring of scientific publications, technical reports and marketing activities
- Engage in appropriate training and professional development opportunities as required by the Director, FPC@DCU or University in order to develop research skills and competencies.
- Interact closely with postgraduate research students associated with the same research group and possibly have an agreed role in supporting these students in their day to day research in conjunction with an academic supervisor
- Support collaboration with industry in areas relevant to the FPC@DCU.

Profile

The successful candidate can convincingly demonstrate the willingness and capability to transfer bioanalytical methods to microfluidics-based technologies, e.g. for enabling handling and decentralised sample-to-answer testing of biological samples to the benefit of people and societies. You already have experimental work experience in topics relevant to bioanalytical methods and show a keen interest to contribute to its “fit-for-industry” focus.

Minimum Criteria

You must hold a primary degree (NFQ Level 8) in a relevant discipline and should at least have 1 year of relevant job experience. Under overall guidance of a researcher, you should have a proven track record of working in a team as well as well-defined experience handling select aspects independently. Familiarity with the operations of a scientific laboratory environment would be desirable. A self-starting attitude, good interpersonal skills and high technical expertise are a prerequisite.

Salary range: *€21,674 – €34,269

*Appointment will be commensurate with qualifications and experience will be made on the appropriate point of the salary scale, in line with current Government pay policy.

Closing date: 17th August 2018

Informal enquiries to: Dr. Damien King (Damien.king@dcu.ie)

Application Procedure:

Application forms are available from the DCU Current Vacancies (Open Competitions) website at <http://www4.dcu.ie/hr/vacancies/current.shtml> and also from the Human Resources Department, Dublin City University, Dublin 9. Tel: +353 (0)1 700 5149; Fax: +353 (0)1 700 5500 Email: hr.applications@dcu.ie

Applications should be submitted by e-mail to hr.applications@dcu.ie or by Fax: +353 (0)1 700 5500 or by post to the Human Resources Department, Dublin City University, Dublin 9.

Please clearly state the role that you are applying for in your application and email subject

line: Job Ref# 960 Research Assistant in cell culture, cell line development and cell manipulation

Dublin City University is an equal opportunities employer