



#### JOB DESCRIPTION:

<b>Research Centre</b>	National Centre for Sensor Research
<b>Post Title</b>	Research Fellow (Ink Formulation and Screen-printed Electrodes)
<b>Level on Framework</b>	Level 3
<b>Post Duration</b>	Fixed Term Contract (Ending 31 <sup>st</sup> August 2022)

#### **Dublin City University:**

Dublin City University [www.DCU.ie](http://www.DCU.ie) is a young, ambitious and vibrant University, with a mission 'to transform lives and societies through education, research, innovation and engagement'. Known as Ireland's 'University of Enterprise and Transformation', it is committed to the development of talent, and the discovery and translation of knowledge that advances society and the economy. DCU is the Sunday Times Irish University of the Year 2021.

The University is based on three academic campuses in the Glasnevin-Drumcondra region of north Dublin. It currently has more than 18,000 students enrolled across five faculties – Science and Health, DCU Business School, Computing and Engineering, Humanities and Social Sciences and DCU Institute of Education. DCU is committed to excellence across all its activities. This is demonstrated by its world-class research initiatives, its cutting-edge approach to teaching and learning, its focus on creating a transformative student experience, and its positive social and economic impact. This exceptional commitment on the part of its staff and students has led to DCU's ranking among the top 2% of universities globally. It also consistently features in the world's Top 100 Young Universities (currently in QS Top 70 Under 50, Times Higher Top 150 Under 100).

DCU is placed 84th in the world, in the Times Higher Education University Impact Rankings – measuring higher education institutions' contributions towards the UN Sustainable Development Goals. Over the past decade, DCU has also been the leading Irish university in the area of technology transfer, as reflected by licensing of intellectual property.

#### **National Centre for Sensor Research:**

The National Centre for Sensor Research (NCSR) is large, multidisciplinary research unit based in state-of-the-art facilities situated on the campus of Dublin City University. We are now seeking applications for the following research position in DCU.

#### **Research Career Framework:**

As part of this role the researcher will be required to participate in the DCU Research Career Framework (<http://dcu.ie/hr/ResearchersFramework/index.shtml>). This framework is designed to provide significant professional development opportunities to researchers and offer the best opportunities in terms of a wider career path. DCU has a strong track record in attracting both Irish and European Union research funding under Horizon 2020 (and all previous Framework

programmes), Marie Curie Actions and Erasmus. We offer a dynamic and internationally focused environment in which you can advance your career

### **Background & Role Profile:**

We are seeking a Senior Postdoctoral Fellow (PD) with a PhD in electrochemistry/biosensor/material sciences development focused strongly on the formulation and optimisation of inks for screen printing as well as experience in printing and characterising screen-printed electrodes. Successful candidates will have the ability to comprehend issues related to the industrial use of SP inks including shelf-life, dispersion control, printability, curing temperature, etc, especially relating to inks incorporating nanomaterials. The PD will join a multidisciplinary research team working to create, optimise and test sensors for glucose, biomarkers of inflammation and miRNA connected with epilepsy. A key objective is the creation of inks that are biocompatible and biodegradable and suitable for wearable biosensor applications. Experience in production of inks at the kg scale, liaising with industry, clinical and academic partners is particularly sought. Knowledge of the key aspects of electrochemical biosensor design, e.g., sensitivity, background noise, available potential window, and how these are influenced by the ink composition is an advantage. An interest/experience in commercialising research and identifying/developing market opportunities would be especially welcome.

### **Duties and Responsibilities:**

Reporting to the Principal Investigators (PIs), the researcher will fulfil the duties which will include, but not be limited to:

- Deliver a programme of research to the highest standard where relevant observing ISO or other industrially relevant standards.
- Support the PIs on project planning to ensure all milestones and deliverables are met particularly regarding the practical demonstration of the sensor technology and enhancing its commercial value.
- Support the work of other PD researchers on the programme.
- Provide weekly updates and a monthly written report on progress.
- Compile, analyse and interpret data generated in the project on an ongoing basis.
- Produce a full report and presentation at the end of the contract.
- Support the team's ongoing communication and dissemination efforts including social media and project website.
- Engage with internal and external stakeholders.
- Carry out a landscaping exercise on patents on the topic and support the team's protection of intellectual property efforts.

### **Qualifications and Experience:**

#### **Essential Criteria**

- The successful candidate must have a PhD in the formulation of inks and the screen printing of electrochemical biosensors and have significant experience in materials chemistry.
- Laboratory experience in ink formulation using nanomaterials, screen printing, electrode characterisation including biocompatibility and biodegradability.
- A demonstrated strong work ethic, as well as an independent and creative mind set and a deep commitment to problem-solving.
- Excellent social skills as well as verbal and written communication skills.
- Very good organisational skills with an ability to prioritise workloads and to work successfully on their own initiative.

## **Desirable Criteria**

The successful candidate will ideally possess the following:

- Postdoctoral experience, graduate qualification, e.g., related to business/commercialisation of research, or relevant experience in industry.
- Demonstrated ability to work as part of a collaborative team and to innovate in an organisational environment with multiple academic, clinical and industrial stakeholders.
- An interest in commercialisation, innovation, and real-world deployment of sensors within industry or clinical settings.

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

**Discipline knowledge and Research skills** – Demonstrates the ability to design and implement part of a programme of research (for example by using critical thinking and the application of relevant research methodologies).

**Understanding the Research Environment** – Demonstrates a thorough understanding of the research environment both nationally and internationally and the ability to contribute substantially to grant applications.

**Communicating Research** – Demonstrates the ability to communicate their research effectively to the research community and wider society (for example by publishing their research in high quality peer reviewed journals) and the ability to teach and tutor students.

**Managing and Leadership skills** - Successfully manages research projects including the management and supervision of postgraduates and/or junior research staff.

## **Essential Training:**

Post holders will be required to undertake the following essential training: Orientation, GDPR, Research Integrity and Compliance. Other training may need to be undertaken when required.