

<b>Research Centre</b>	Insight Centre for Data Analytics
<b>Post title</b>	Post-Doctoral Researcher Insight NBMC Targeted Project
<b>Level on Framework</b>	Level 1
<b>Post duration</b>	18 Months

As part of this role the researcher will be required to participate in the DCU Research Career Framework. This framework is designed to provide significant professional development opportunities to Researchers and offer the best opportunities in terms of a wider career path.

### **Background**

The Adaptive Sensors Group ([www.adaptivesensors.com/](http://www.adaptivesensors.com/)) is a large, multidisciplinary research unit hosted by the National Centre for Sensor Research (NCSR), in state-of-the-art facilities situated on the campus of Dublin City University. Core funding for the ASG is provided by Science Foundation Ireland through the INSIGHT Centre initiative (<https://www.insight-centre.org/>), supplemented by significant project based income provided by Enterprise Ireland, the Marine Institute, EPA and Industry partners. Arising from funding awarded by the US-MicroNanoBio-Manufacturing (NBMC) consortium for a targeted project in the Insight Centre, the following research position is available. Partners in the proposal include GE Global Research (NY), American Semiconductor Inc., AFRL, University of Massachusetts Amherst, UES, University of Arizona, and University of Connecticut.

### **Role**

This Postdoctoral position is focused on the development of wearable patch-type devices for monitoring specific indicators of the wearer's general condition and health status. This particular project is part of a major effort to develop reliable ways to track skin hydration and sweat composition in real time using sensors and fluidics embedded within a wearable on-skin patch. A materials chemist/synthetic chemist is required to synthesise molecular receptors such as crown-compounds derivatised to facilitate incorporation into polymer films at specific locations within a polymer-based fluidic system. A variety of polymerisation approaches will be investigated, in order to provide routes to optimization of the polymer-receptor film characteristics (thickness, hydrophobicity/hydrophilicity, binding-release thermodynamics and kinetics of guest species etc.).

### **Principal Duties and Responsibilities:**

Reporting to his/her Principal Investigator and his/her immediate supervisor, the Postdoctoral Researcher will:

- Conduct a specified programme of research on the synthesis and characterization of receptor-functionalised polymer films within wearable patch-based fluidic systems
- Deliver research outputs and provide input into reports as required according to project management schedules.
- Participate in lab-based validation studies of prototype devices at DCU and with project partners as required for the success of the project.
- Attend and present results as required at project technical progress meetings.
- Liaise with both internal and external stakeholders including industry and academic partners/collaborators.
- Maintain an up-to-date lab-book and personal profile on the group website.
- Engage in the dissemination of the results of the research at international conferences and publish research outputs in high impact international journals.
- Assist in identifying and developing future research and funding initiatives.
- Supervise and assist undergraduate students working in this area with their research.
- Engage in appropriate training and development opportunities as required by the Principal Investigator, the School or Research Centre, or the University.
- Engage in teaching and teaching support as assigned by and in agreement with the Head of School, under the direction of the Principal Investigator.
- Carry out administrative work associated with the programme of research as and when necessary.

### **Experience and Qualifications**

Candidates must have a primary degree and PhD in which organic synthesis and polymer chemistry was a significant component. Experience in materials characterization techniques (e.g. SEM, contact angle, NMR, UV-VIS-IR/RAMAN/fluorescence spectroscopy) and purification/structure validation is important. Experience in microfluidic system design and fabrication would be an advantage, as would some knowledge of sensor interfacing with electronic circuitry.

**Salary: €37,750 - €41,181**

Appointment will be commensurate with qualifications and experience.

**Closing Date: Friday 1<sup>st</sup> May 2015**

**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 projects including the supervision of undergraduate students.

### **Application Procedure**

#### **Informal enquiries to:**

Dr. Larisa Florea, Insight Centre for Data Analytics, DCU, Dublin 9, Ireland

E-mail: [larisa.florea@dcu.ie](mailto:larisa.florea@dcu.ie) Phone: +353 (0)1 7007604

*Please do not send applications to this email address, instead apply as described below*

Application forms are available from the DCU Current Vacancies (open Competitions) website at <http://www.dcu.ie/vacancies/current.shtml> and also from the Human Resources Department, Dublin City University, Dublin 9. Tel: +353 (0) 1 7005149.

Please quote the position reference code (Ref. Insight PD NBMC) in your application.

Applications should be submitted by email to [hr.applications@dcu.ie](mailto:hr.applications@dcu.ie) or by Fax: +353 (0)1 7005500 or by post to the Human Resources Department, Dublin City University, Dublin 9. Human Resources Department, Dublin City University, Dublin 9. Tel: +353 1 700 5149; Fax: +353 1 700 5500 Email: [hr.applications@dcu.ie](mailto:hr.applications@dcu.ie)

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