Dublin City University

Research Assistant, Engineering for Microfluidic Systems

(12-month contract)

Adaptive Sensors Group
National Centre for Sensor Research

The Adaptive Sensors Group (ASG; see www.adaptivesensors.com) is a 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 CLARITY CSET (www.clarity-centre.org), supplemented by significant project based income provided by Enterprise Ireland, the Marine Institute, EPA, EU-FP7, and Industry partners.

A 12-month Research Assistant position is available to work on the design and fabrication of microfluidic chips for water quality monitoring applications. Funded by Enterprise Ireland, this position is focused on design for cost-effective manufacturing of microfluidic chips, as well as fabrication and assessment of prototype chips, integration of chemical reagents for water quality analysis, design and fabrication of integrated sensing devices, and field deployments of the integrated devices. The candidate will also contribute to the group’s overall research effort in autonomous instruments for environmental monitoring. He/she will join a multidisciplinary team which draws on combined team expertise ranging across mechanical/electronic engineering, computer science, wireless communications, web database management, environmental science, materials science, and analytical chemistry.

Duties and Responsibilities
Reporting to Professor Dermot Diamond and Dr. John Cleary, the candidate will:

- Ensure that project objectives are delivered, specifically the design, fabrication and testing of microfluidic chips for water quality monitoring applications; and the design, fabrication and deployment of integrated sensing devices.
- Contribute to project reporting requirements.
- Participate in meetings with project partners, funding agencies, and potential end-users of the developed technology.
- Attend and contribute to ASG meetings.
- Maintain an up-to-date profile on the group website.

Experience and Qualifications
The ideal candidate will have a primary degree in mechanical or mechatronic engineering, with experience in microfluidics and/or micro-fabrication. Expertise in rapid prototyping, systems integration, design-for-manufacture, electronics and micro-controller programming is desirable. Experience in environmental monitoring deployments is also advantageous.

Closing date: 27th April 2013
Salary: €25,330 – €28,509 subject to experience & qualifications

For informal enquiries contact Dr. John Cleary john.cleary@dcu.ie

Enterprise Ireland Project Description: Cost Effective Manufacturing of Microfluidic chips

This collaborative project involving Dublin City University (DCU) and University College Dublin (UCD) will develop a cost-effective process for manufacturing microfluidic chips in low volume batches. This process will bridge a currently existing gap between prototype scale fabrication techniques for microfluidic components and large scale micro-fabrication techniques, facilitating the uptake and commercialization of microfluidic technology in the water quality monitoring sector.

Key technical objectives include:
- Development and analytical assessment of microfluidic chip designs for a range of environmentally relevant chemical detection schemes.
- Development of a suitable micro-injection mold for fabrication of microfluidic chips.
- Manufacture of microfluidic chips using the micro-injection molding process.
- Performance assessment of the microfluidic chips.
- Field testing of microfluidic chips using DCU’s deployable microfluidic analytical platform for water quality monitoring applications, in order to verify performance under real environmental conditions.

This project (CF/2012/2640A) is funded by Enterprise Ireland under the 2012 Commercialisation Fund – Technology Development scheme.

Applications forms are available at: [http://www4.dcu.ie/hr/vacancies/current.shtml](http://www4.dcu.ie/hr/vacancies/current.shtml) and from the Human Resources Department, Dublin City University, Dublin 9. Tel: (01) 700 5149; Fax: (01) 700 5500 Email: hr.applications@dcu.ie

_Dublin City University is an equal opportunities employer_