

## Post Graduate Research Position:

### Generation of fully functioning Biomimetic Analytical Platforms (water quality)

The National Centre for Sensor Research (NCSR) is a world renowned, large-scale, multidisciplinary research facility focused on the science and applications of chemical sensors and biosensors (<http://www.ncsr.ie>). This state-of-the-art facility situated on the campus of Dublin City University comprises custom-designed laboratories, a range of specialist support units and equipment, and dedicated technical and administrative staff. The NCSR hosts over 250 researchers, and several large-scale research initiatives including the Biomedical Diagnostics Institute ([www.bdi.ie](http://www.bdi.ie)), the Irish Separation Science Cluster ([www.separationscience.ie](http://www.separationscience.ie)) and members of CLARITY, the Centre for Sensor Web Technologies (<http://www.clarity-centre.org/>).

Within the Marie Curie Initial Training Network ATWARM, we are offering a PhD position for a period of 3 years to research on advanced technologies for water resource management. The successful candidate will be based with in the Adaptive Sensors Group, DCU ([www.dcu.ie/chemistry/asg/](http://www.dcu.ie/chemistry/asg/)), which is part of the SFI funded CLARITY CSET ([www.clarity-centre.org/](http://www.clarity-centre.org/)).

### JOB DESCRIPTION

This project is focused on the fabrication of microfluidic manifolds and the integration of advanced features such as energy scavenging capabilities, low power wireless communications, remote (wireless) control of instrument status and activity (sampling, analysis, communication, power management etc.) and incorporation of low-power detection schemes. The design & fabrication of instrument prototypes including location of electronic and fluidic components, and the integration of pumps & valves; will make use of state of the art equipment like 3-d printer and rapid prototyping systems. A particular emphasis will be placed on the design and fabrication of microfluidic chips for environmental analytical applications and will employ approaches such as laser micromachining, and micromilling to generate micron resolution fluidic structures (channels, mixer zones, detection cells etc.)

Project objectives include:

- Integration of photo/electro-actuators developed in a parallel project into a microfluidic platform that includes: fluidic manifolds exhibiting biomimetic behaviour; biomimetic structures with detectors (optical, electrochemical); integral reagent addition and calibration standards; integral electronics, communications and power generation/storage
- Demonstration of a fully functioning analytical platform.

### QUALIFICATIONS

To be considered applicants must have a first class or upper second class BEng in the field of Engineering. Research experience or a degree in the field of materials or polymer science or mechatronics with a focus on polymer microfabrication is desirable.

### SKILLS REQUIRED

Analytical and interdisciplinary thinking, good team player but self-motivated and capable of delivering high quality outputs

### FURTHER INFORMATION

For further information please see <http://ec.europa.eu/euraxess>, enter ATWARM in the search field and scroll to: [PhD Position in the field of polymer engineering, microfluidics.](#)

Candidates expressing an interest in this position should email Patricia McCrory ([p.mccrory@qub.ac.uk](mailto:p.mccrory@qub.ac.uk)) at Queen's University Belfast (ATWARM coordinator) and provide a CV.

According to Marie Curie mobility rules, Irish nationals need not apply.

***Dublin City University is an equal opportunities employer***