Postdoctoral Researcher

Marine and Environmental Sensing Technology Hub (MESTECH)

(Three Year Contract)

Project - The role of passive sampling in screening and monitoring of new and emerging chemicals

This project represents an important collaboration between two research centres (DCU & MI) together with the Environment Agency UK (EA), Inland Fisheries Ireland (IFI) and an industry partner (TE Laboratory) to assess the potential of passive sampling in monitoring priority pollutants in Ireland. This work is underpinned by a number of studies carried out in Ireland already (in DCU and MI) and a vast array of literature in the area of priority pollutant monitoring. This project will pilot the use of passive sampling technology combined with biota monitoring to assess the presence of priority substances in Irish surface waters. This will focus in particular on new pollutants earmarked as candidates for the Annex X priority substances list under the EU Water Framework Directive. This will consider the implications for compliance with current and proposed EQS and investigate the potential for incorporating passive sampling and biota testing in future compliance, investigative and trend monitoring.

Key objectives of this project are:

To test use of various passive sampling technologies and biota monitoring in surface water monitoring of priority substances in Ireland;

- Quantitative and qualitative screening of selected priority substances and proposed priority substances in a number of Irish waters representative of different pressures;
- Develop broad qualitative GCMS screening for other substances in surface waters to identify potential;
- Assessment of the status of cypermethrin pollution in Irish surface waters;
- Screening study of certain pharmaceutical substances in Irish surface waters;
- Develop recommendations and guidelines for use of passive samplers in future monitoring of surface waters in Ireland;
- Develop recommendations and guidelines for biota monitoring, including species/tissue selection, in future monitoring for chemical status in Ireland.

Role:

The Postdoctoral Researcher will be employed by DCU in MESTECH to work as part of the project team. This position comprises a combination of laboratory based method development and analysis in addition to development of field based monitoring capacity. The post doc will work closely with the research assistant in development of deployment and sampling sites. The Postdoctoral Researcher will complete method development, validation and analysis for a broad suite of WFD listed environmental pollutants in a variety of samples including passive samplers
and water. On an on-going basis the position will require the review of the applicability of passive sampling based methodologies in relation to WFD compliance. The successful candidate will also be involved in organising and participation in steering committee meetings and project workshops as well as publication of research in the peer-reviewed press. The Postdoctoral Researcher will contribute to the writing of an invited book on priority substance monitoring.

Duties and Responsibilities:

The Postdoctoral Researcher will be required to perform the following duties:

- Conduct scientific research on the on-going application of passive sampling technologies in respect of WFD legislative monitoring.
- Conduct scientific research on development and validation of methods of analysis based on LC-MS-MS and/or GC-MS for screening and focused analysis.
- Organisation of subcontracting of analysis as appropriate.
- Ordering of consumables and management of instrumentation relevant to project delivery.
- Supervision of other project personnel (e.g. project research students) as deemed appropriate for project delivery.
- Tutorials and lectures in topics related to the project.
- Assisting in the preparation of annual reports and the draft final report.
- Presentation of studies at national and international scientific meetings and stakeholder workshops; publishing of research in peer-reviewed journals.
- Other tasks relevant to successful project completion.
- Contribute to a book on the analysis of priority pollutants.

Qualifications & Experience:

a) Essential

- A PhD degree in chemistry, analytical chemistry or a subject directly related to the chemical sciences.
- A minimum of 3 years hands on experience in modern chromatographic techniques, in particular HPLC, LCMS and/or GCMS of primarily trace organic pollutants.
- A minimum of 2 years experience in the preparation and clean-up of environmental samples for primarily trace organic pollutants.
- Good knowledge of legislation in particular Water Framework Directive and most recent updates.
- Experienced at a working level in method development validation.
- A working knowledge of a range of passive sampling technologies.
- Effective communication skills, both written and verbal.
- Experienced in the use of Microsoft Word, Excel and PowerPoint
- An aptitude for solving problems in a logical, stepwise manner.
- The ability to manage time effectively and to meet deadlines.

b) Desirable

- A track record in publication in peer review literature.
- A full driving licence.
- Experience in project management, workshops, conferences, team research dissemination etc.

Informal enquiries to:
Professor Fiona Regan, Email: fiona.regan@dcu.ie
Closing date: 18th January 2013

Starting Salary: €33,975*
*Subject to experience & qualifications

Applications forms are available at: 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

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