

## Candidate Information

<b>Position:</b>	Research Fellow - Materials for Nitrogen Sensing Applications
<b>School/Department:</b>	Chemistry and Chemical Engineering
<b>Reference:</b>	22/109675
<b>Closing Date:</b>	Monday 28 March 2022
<b>Salary:</b>	£34,304 per annum
<b>Duration:</b>	3 Years

### JOB PURPOSE:

To be an active member of a multidisciplinary research team assisting in the development of an ultrasensitive nitrogen sensor using polymer assisted bacteria for real-time monitoring of water quality. This will involve, synthesis and characterisation of polymer or composite sorbents, evaluation of nitrogen species binding selectivity using a variety of analytical methods, and the design of a sensing platform for implementation of the produced materials to the sensing of nitrogen species in water. The post holder will be responsible for the planning and delivery of the research activity within this project so that the overall research objectives of the project are met. The post is supported by NSF, DfE and SFI via the US-Ireland R&D partnership programme, and is in collaboration with Dublin City University (ROI) and Rensselaer Polytechnic Institute (US).

### MAJOR DUTIES:

1. To undertake research under supervision of the grant holders within the research project and as a member of a research team.
2. To develop and refine polymer or composite sorbents and an experimental apparatus in order to implement a sensor platform for measurement of nitrogen species in fresh water.
3. To carry out analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to the area of research.
4. To present regular progress reports on research to members of the research group and to external audiences to publicise research findings.
5. To prepare in consultation with supervisors and advisory board, material for publication in peer reviewed journals, and presentations at international conferences and trade shows and to potential commercial partners.
6. To maintain links with collaborators, project mentors and commercial partners.
7. To carry out occasional supervision of other research staff and students associated with the project.
8. To carry out routine administrative tasks associated with the research project to ensure that project is completed on time and within budget. These will include organisation of project meetings and documentation, financial control, risk assessment of research activities.
9. Any other reasonable duties within the general ambit of the post.

### ESSENTIAL CRITERIA:

1. Have a degree in Chemistry.
2. Have or be about to obtain a PhD in in materials, analytical chemistry or sensors, or a closely related area.
3. Have at least 3 years' relevant research experience to include:
  - Demonstrable experience in the synthesis and characterisation of porous polymers or composite sorbents.
  - Demonstrable skills in analytical and/or environmental chemistry.
4. A publication record commensurate with stage of career.
5. Ability to contribute to broader management and administrative processes.
6. Willingness to contribute to the School's outreach programme.
7. Sufficient breadth and depth of specialist knowledge in the area of chemical analysis.
8. Ability to communicate complex information clearly.
9. Ability to build contacts and participate in internal and external networks.

10. Ability to assess and organise resources.
11. Ability to work efficiently as a team member and be highly motivated.
12. Evidence of willingness to travel, spend time in collaborating institutions outside NI and present at international conferences.
13. Willingness to conduct field work. A driving license will therefore be required.

**DESIRABLE CRITERIA:**

1. Have or be about to obtain a PhD in ion recognition or molecular imprinting.
2. Experience in chemical analysis of water samples, in particular using chromatographic techniques.
3. Experience in processing and characterisation of polymers or composite sorbents.
4. Knowledge of the scientific literature related to waste treatment.