

Post Specification

Post Title:	Research Fellow in CRANN/School of Chemistry
Post Status:	Fixed Term (full-time); 4 years
Research Group / Department / School:	Characterisation & Processing of Advanced Materials Research Group, CRANN/School of Chemistry. Trinity College Dublin, the University of Dublin
Location:	Advance Microscopy Laboratory Unit 27/29 Trinity Enterprise Centre Grand Canal Quay, Dublin 2, Ireland. Trinity College Dublin, the University of Dublin
Reports to:	Professor Valeria Nicolosi, Principal Investigator
Salary:	Appointment will be made on the appropriate point of the IUA Post-Doctorate Researcher Level 2 salary scale in line with government pay policy i.e. €37,750 - €42,394 gross per annum
Hours of Work:	
Closing Date:	12 Noon (Irish Standard Time) on the Friday the 25 th of March of 2019

Post Summary

The Characterisation & Processing of Advanced Materials Research Group, led by Professor Valeria Nicolosi, is currently seeking a Research Fellow with significant practical experience in High-resolution Transmission Electron Microscopy (HRTEM) and aberration corrected Scanning Transmission Electron Microscopy (AC-STEM). The post is available from the 1st of June 2019 (or as soon thereafter as possible) for 4 years.

The candidate will have a PhD in Physics, Chemistry, Materials Science or a related discipline, or equivalent experience, with significant postdoctoral research experience in advanced electron microscopy. We are looking for someone with a high level of expertise in both the theory and practical operation of aberration-corrected scanning transmission electron microscopes; with the organisation and self-motivation to be able to support a wide range of programmes ranging from nanomaterials to energy storage research. You will have excellent communication skills and will be able to work cooperatively with colleagues at all levels.

Experience in in-situ TEM (liquid-cell, heating, gas-heating, cryo, etc.) techniques would be also desirable.

The Research Fellow will be based at the Advanced Microscopy Laboratory part of the CRANN Institute, Trinity College Dublin (<https://www.tcd.ie/crann/aml/>). The centre centralises cutting-edge microscopy activities in Ireland. Key instruments to this project are a NION UltraSTEM200 and an FEI Titan300 (equipped with an EELS and EDS spectrometers and a range of in-situ TEM holders such as a Hummingbird liquid-biasing holder, a DENNS heating holder and a DENNS gas-heating holder).

Background to the Post

Professor Nicolosi leads the Characterisation & Processing of Advanced Materials Group (<https://www.tcd.ie/Physics/>) within the School of Chemistry and the Advanced Microscopy Laboratory in CRANN. The group is devoted to the processing and electron microscopy structural characterisation of low-dimensional nanostructures and devices. Dispersability, processability and manipulation of these objects are important objectives of the group, together with full structural characterisation of devices. In the group, particular attention is given to the study of material's atomic structures to better understand their fundamental physical and chemical properties. The group works on a range of low-dimensional nanomaterials, such as carbon nanotubes, inorganic nanowires, graphene and other inorganic two-dimensional nano-sheets.

Standard Duties and Responsibilities of the Post

The post holder will be responsible for the structural characterization of exfoliated 2D nanosheets by aberration-corrected STEM and in-situ TEM, and the investigation of their structure by atomic-resolution EELS and EDX. Key to this project will be the close collaboration within the team (especially with regard to nanomaterials processing and device fabrication), with the technical staff at the Advanced Microscopy Laboratory and with Prof. Lewys Jones and his Ultramicroscopy research group (TCD Physics, <https://www.tcd.ie/Physics/research/groups/ultramicroscopy/>).

The post holder will be expected to take on the day-to-day running of the research programme under the supervision/direction of Prof. Nicolosi. In addition to the core work outlined above, the post holder will be expected to:

1. Write papers and give presentations on the research conducted;
2. Assist with the day to day running of the research group including, training and supervising of students, general administration, procuring orders etc.;
3. Engage with both new and existing collaborators, visitors, and seminar speakers,

4. Work in close collaboration with the CRANN's Advanced Microscopy Laboratory's technical staff, including representing the group at the monthly 'AML Steering Committee'.
5. Develop and maintain a data management plan for results generated in the Advanced Microscopy Laboratory.

Funding Information

Science Foundation Ireland

Person Specification

Qualifications

A PhD in Materials Science, Physics, Chemistry, Materials Science or a related discipline (Essential).

Knowledge & Experience (Essential & Desirable)

1. Strong and proven postdoctoral research experience in advanced electron microscopy and high level of expertise in both the theory and practical operation of aberration-corrected scanning transmission electron microscopes (Essential)
2. Experience of working with collaborators (Essential).
3. Experience in the training and supervision of junior researchers (Desirable).
4. Experience and proven ability in: in-situ electron microscopy techniques (Desirable).
5. Evident good knowledge of the physics behind all of the above described fields (Essential).
6. A strong publication record in internationally peer-reviewed journals commensurate with the stage of career (Essential)

Skills & Competencies

1. Well-organised and self-motivated with the ability to manage the day-to-day running of a research project, to identify research objectives and to carry out appropriate research activities within a given timescale.
2. Excellent oral and communication skills, including the proven ability to write in English at a suitable standard for the preparation of written reports, publications and presentations of the work at generalist and specialist levels, including discussions with engineers and scientists in different fields.
3. Willingness to travel to collaborators across Europe and to conferences to disseminate results.

Further Information for Applicants

For additional details on these research positions please contact:

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