Research Centre	National Centre for Plasma Science and Technology
Post Title	Research Fellow in Experimental Plasma Physics
Level on Framework:	Level 2
Post Duration	Fixed Term Contract up to 2 years

Background

The National Centre for Plasma Science and Technology at DCU conducts a wide range of plasma related projects in collaboration with industry partners, academic collaborators, and other stakeholders. One of the current major funded research activities is an SFI funded SPOKE project in collaboration with the AMBER research center, based in Trinity College Dublin and low-pressure plasma processing is a key component of this research project. This role will support the plasma-based experimental programme associated with this project as well as carrying out the day to day management activities associated with the execution of the work programme.

Research Career Framework

As part of this role the researcher will be required to participate in the DCU Research Career Framework (http://dcu.ie/hr/ResearchersFramework/index.shtml). This framework is designed to provide significant professional development opportunities to researchers and offer the best opportunities in terms of a wider career path.

DCU has a strong track record in attracting both Irish and European Union research funding under Horizon 2020 (and all previous Framework programmes), Marie Curie Actions and Erasmus. We offer a dynamic and internationally-focused environment in which you can advance your academic career.

The Project

“Infiltration techniques for producing patterns and films from block copolymers and polymer brushes” is an SFI co-funded research project funded through the SFI SPOKE instrument and co-funded by Intel. This project is highly relevant to the roadmap of the semiconductor processing industry and examines new concepts in surface patterning. The project aims to provide a detailed understanding of mechanism of infiltration and feature formation, understand properties of materials, process variables and limitations of the technique and ultimately deliver a materials roadmap towards integration into manufacturing.

Principle Duties and Responsibilities

Reporting to the Principal Investigator the Research Fellow will:

- Execute the plasma-oriented research objectives in the laboratories in close partnership with other team members, collaborators and the industrial partner.

- Assist the PI and research group generally in the ongoing adaption. design and development of the research programme.

- Disseminate the outcomes of the research in which he/she is engaged including publishing in high quality peer reviewed journals of international standing.

- Mentor, assist and supervise postgraduate research students working in the general area of plasma science and technology.

- Assist the PI in the management and co-ordination of key aspects of the research programme (e.g. financial management, reporting, equipment management, etc.).

- Liaise with other research groups associated with the project consortium with the aim of developing mutually advantageous joint research programme.

- Engage in appropriate training and development opportunities as required by the Principal Investigator, the School or Research Centre, or the University.

- Engage in teaching and teaching assistance as assigned by the Head of School under the direction of the Principal Investigator.

- Carry out administrative work associated with the programme as necessary.

Minimum Criteria

- A PhD in a discipline relevant to laboratory plasma science and technology
- A minimum of 4 years' postdoctoral research experience
- A broad knowledge of the field of low-pressure research and semiconductor processing
- A track record in optical diagnostics, in particular laser induced fluorescence and optical emission spectroscopy
- A track record in electrical diagnostics, in particular Langmuir probe, ion kinetics, and plasma density measurements
- A track record of partnership with the modelling community, in particular particle in cell simulations and global models
- A detailed comprehension of plasma processing of metal-salt infiltrated polymer thin-films

Desirable Criteria

- Experience with large-scale research projects, in particular projects with industry partnership
- Demonstrated skills in the design, management and the active conduct of research
- A high level of interpersonal and team working skills
- Strong report writing, time management skills and ability to work to deadlines
- Good presentation and academic article writing skills would also be desirable.

Candidates will be assessed on the following competencies:

Discipline knowledge and Research skills– Demonstrates the ability to design and implement part of a programme of research (for example by using critical thinking and the application of relevant research methodologies).

Understanding the Research Environment– Demonstrates a thorough understanding of the research environment both nationally and internationally and the ability to contribute substantially to grant applications.

Communicating Research– Demonstrates the ability to communicate their research effectively to the research community and wider society (for example by publishing their research in high quality peer reviewed journals) and the ability to teach and tutor students.

Managing & Leadership skills- Successfully manages research projects including the management and supervision of postgraduates and/or junior research staff.

Mandatory Training:

The post holder will be required to undertake the following mandatory compliance training: Orientation, Health and Safety, Research Integrity and Intellectual Property and Data Protection training. Other training may need to be undertaken when required.