



Research Centre	National Centre for Plasma Science and Technology
Post Title	Research Fellow Fusion Physics
Level on Framework:	Level 2
Post Duration	Fixed Term Contract up to 3 months

Background

EUROfusion Ireland is the Irish research unit of the EUROfusion consortium, which is a pan-European association of laboratories concerned with the implementation of the EURATOM research programme in the field of magnetically confined fusion. The consortium connects some 26 national laboratories and has a budget for the period 2018-2020 of EUR424M. The research programme of the consortium is “reactor focused” in that its aim is to support a demonstration of commercially useful power generation from magnetically confined fusion at the earliest possible date. In practice, this means that the goals of the programme are large-scale power production from fusion in the Iter experimental reactor, which is expected to occur around 2030, and beyond that the development of a prototype commercial fusion power plant by about 2040.

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

EUROfusion Ireland's research programme aims to address critical problems in selected areas of the wider EUROfusion consortium. In particular, there is an emphasis on issues affecting the edge plasma region of magnetically confined fusion devices. Owing to the high power densities expected in burning fusion plasmas, managing power flow across the edge plasma is expected to be a critical issue. Therefore, research activities that improve understanding and hence ability to predict the behaviour of this region are important. These include impurity transport in the edge plasma, and radio-frequency phenomena associated with electromagnetic plasma heating technologies. Doctoral research student projects are an important implementation instrument.

Principle Duties and Responsibilities

Reporting to the EUROfusion Programme Manager the Research Fellow will:

- Execute particular research projects that may be decided from time to time with the EUROfusion Programme Manager, including (but not limited to) computational projects associated with the EUROfusion High Level Support Team (HLST).
- Assist the EUROfusion Programme Manager and research group in the design and development of the research programme.
- Disseminate the outcomes of the research in which they are engaged including publishing in high quality peer reviewed journals of international standing.
- Explore new areas of the EUROfusion programme where Irish researchers and companies may become involved in fusion research. Where relevant, engage with other agencies in pursuit of the same goals. These other agencies could include Fusion for Energy, the international ITER Organisation, and Enterprise Ireland.
- Mentor, assist and supervise postgraduate research students working in the general area of fusion science and technology.
- Assist the EUROfusion Programme Manager in the management and co-ordination of key aspects of the research programme (e.g. financial management, reporting, equipment managementetc.).
- 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.
- Liaise with other international Research Units inside and outside the EUROfusion Consortium with the aim of developing mutually advantageous joint research programmes.
- Carry out administrative work associated with the programme as necessary.

Minimum Criteria

- A PhD in a discipline relevant to fusion science and technology
- A minimum of 4 years' postdoctoral research experience
- A broad knowledge of the field of fusion research is essential
- Experience of the development of software on High Performance Computing systems
- Knowledge of the goals and structure of the research programme of the EUROfusion Consortium is also essential

Desirable Criteria

- Demonstrated skills in the design, management and 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 & 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.