

Postdoctoral Researcher in Electronic Engineering
School of Electronic Engineering
Research Framework – Level 1
Fixed Term Contract of up to 24 months (full-time)

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

Background & Role

Dublin City University (www.dcu.ie) is a research-intensive, globally-engaged, dynamic institution that is distinguished both by the quality and impact of its graduates and by its focus on the translation of knowledge into societal and economic benefit.

Project Descriptor

The DURABLE Consortium (Drones Robots Renewable Energy) is a major EU INTERREG initiative in the Atlantic Area to monitor and improve the reliability of unattended power generation facilities, e.g. wind and solar farms. The principal aim of the project is to reduce operation and maintenance costs in the renewable energy sector, specifically through improved surveillance and repair of these systems. The consortium consists of 15 partners from academia and industry distributed in the coastal Atlantic region from five countries (Ireland, United Kingdom, France, Spain and Portugal).

It is well known that the radio frequency (RF) electromagnetic fields are emitted by the generators, control electronics and switching components in the nacelles or hubs of modern wind turbines. These systems produce RF emissions in the kHz through to the GHz range, and are often considered a nuisance as they can impact point-to-point telecommunication systems. However, in this project the Dublin City University (DCU) team will investigate the use of these RF emissions in order to infer the health of the turbine system electronics and to monitor any serious excursions, which could indicate fault conditions.

Principal Duties and Responsibilities

Reporting to his/her Principal Investigator the Postdoctoral Researcher will:

- Conduct a specified programme of research under the supervision and direction of the Principal Investigator. The programme of research will involve the design and test of electromagnetic interference (EMI) and electromagnetic compatibility (EMC) type systems (collectively referred to as Radio Emission Spectroscopy herein) for remote deployment including
 - test of off-the-shelf components including antenna systems, EMI/EMC systems, and related technology
 - development of control and analysis software

- development of Field Programmable Gate Array (FPGA) builds of such systems to meet customise requirements within the DURABLE Consortium
- being available to travel to power farms (wind/solar) at locations operated by the partners in the DURABLE consortium.
- Assist in identifying and developing future research and funding initiatives
- Engage in the dissemination of the results of the research in which s/he is engaged with the support of and under the supervision of the Principal Investigator
- Assist with the supervision of PhD students, researchers, internship students, and project students working in the area radio emission spectroscopy, EMI/EMC, and related techniques
- 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 support as assigned by the Head of School under the direction of the Principal Investigator
- Liaise with both internal and external stakeholders including industry and academic partners/collaborators
- Carry out administrative work associated with the programme of research as necessary

Minimum Criteria

Applicants should have a PhD in Electronic Engineering, Physics/Applied Physics or a cognate discipline. Proven experience in the use of electromagnetic interference and/or electromagnetic compatibility hardware and/or radiofrequency electromagnetics would be desirable.

Salary: Postdoctoral Researcher (Level 2 point 1 to point 4) €37,223 - €40,661per annum*.

**Appointment will be commensurate with qualifications and experience, and will be made on the appropriate point of the salary scale.*

Closing date: 31st July 2019

Candidates will be assessed on the following competencies:

Discipline knowledge and Research skills – Demonstrates knowledge of a research discipline and the ability to conduct a specific programme of research within that discipline.

Understanding the Research Environment – Demonstrates an awareness of the research environment (for example funding bodies) and the ability to contribute to grant applications.

Communicating Research – Demonstrates the ability to communicate their research with their peers and the wider research community (for example presenting at conferences and publishing research in relevant journals) and the potential to teach and tutor students.

Managing & Leadership skills - Demonstrates the potential to manage a research project including the supervision of undergraduate students.

Informal enquiries to:

Prof. Patrick McNally, School of Electronic Engineering, DCU, Dublin 9

E-mail: patrick.mcnelly@dcu.ie

Phone: +353 (0)1 700 5119

Application Procedure:

To apply for this role, application forms are available from the DCU Current Vacancies (open Competitions) website at <https://www.dcu.ie/hr/vacancies/index.shtml> and also from the Human Resources Department, Dublin City University, Dublin 9. Tel: +353 (0) 1 7005149.

Please clearly state the role that you are applying for in your application and email subject line: Job #RF1244 - Postdoctoral Researcher in Radio Emission Spectroscopy

Applications should be submitted by email to hr.applications@dcu.ie or by Fax: +353 (0)1 7005500 or by post to the Human Resources Department, Dublin City University, Dublin 9. Human Resources Department, Dublin City University, Dublin 9. Tel: +353 1 700 5149; Fax: +353 1 700 5500 Email: Insert hr.applications@dcu.ie

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