Research Centre: I-Form, Advanced Manufacturing Research Centre
Post title: Postdoctoral Researcher - Materials Data Analysis
Level on Framework: Level 1
Post duration: Fixed Term Contract up to 19 months

Background
Dublin City University (www.DCU.ie) is a young, ambitious and vibrant University, with a mission ‘to transform lives and societies through education, research, innovation and engagement’. Known as Ireland’s ‘University of Enterprise and Transformation’, it is committed to the development of talent, and the discovery and translation of knowledge that advances society and the economy. DCU is the Sunday Times Irish University of the Year 2021.

The University is based on three academic campuses in the Glasnevin-Drumcondra region of north Dublin. It currently has more than 18,000 students enrolled across five faculties – Science and Health, DCU Business School, Computing and Engineering, Humanities and Social Sciences and DCU Institute of Education. DCU is committed to excellence across all its activities. This is demonstrated by its world-class research initiatives, its cutting-edge approach to teaching and learning, its focus on creating a transformative student experience, and its positive social and economic impact. This exceptional commitment on the part of its staff and students has led to DCU’s ranking among the top 2% of universities globally. It also consistently features in the world’s Top 100 Young Universities (currently in QS Top 70 Under 50, Times Higher Top 150 Under 100).

DCU is placed 84th in the world, in the Times Higher Education University Impact Rankings – measuring higher education institutions’ contributions towards the UN Sustainable Development Goals. Over the past decade, DCU has also been the leading Irish university in the area of technology transfer, as reflected by licensing of intellectual property.

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.
The Role
I-Form Advanced Manufacturing Research Centre are seeking a Post-Doctoral Researcher to work on a project that will develop the next generation of materials engineering data analysis.

In this role, novel data analytic algorithms will be applied to the data streams coming from the metal AM and possibly also other advanced manufacturing processes, such as laser processing and pulsed laser ablation in liquid. The goal of this work will be to develop and assess the methodologies for correlating process data with part quality such as porosity, particle size, and other nano- or micro-scale material structure features. Other duties include project management, initiating and leading new research programmes, communicating research outputs nationally and internationally (for example by publishing in high quality peer reviewed journals of international standing, presentation at conferences and through interaction with industrial partners), and supervision of student projects.

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.

Research and Scholarship
He/she will be expected to sustain and conduct research, engage in scholarship of quality and substance, generate research income, supervise postgraduate students and publish at a high international standard both individually and, where appropriate, in partnership with colleagues in DCU and elsewhere. The appointee will be expected to have clearly articulated research interests and research profile development plans that support this area of research.

Principle Duties and Responsibilities

- Discharge the main requirements of the work of the project under the guidance of and in consultation with the Principal Investigator (PI)
- Act as the main internal and external point of contact for the project in consultation with the PI
- Provide input in consultation with the PI regarding medium and long-term planning as appropriate
- Train new staff in respect of work procedures as appropriate
- Provide guidance and direction to the project team when required; e.g. graduate interns, students on work experience, Research Assistants
- Monitor the work of members of the project team on behalf of the PI as required; e.g. graduate interns, students on work experience, Research Assistants
- Report on the progress of the project at relevant meetings (both internal and external)
- Take the minutes of such meetings, where required
- Draft management and progress reports for the project, as appropriate
- Attend relevant committee meeting when required
- Inform the PI of any possible challenges to the work-stream or any opportunities identified

Candidate Requirements

Minimum Criteria:
The candidate must be qualified to PhD level with a focus on data analysis for materials processing. The successful candidate should have some relevant experience related to advanced manufacturing technologies.

In addition to the above, the team is seeking high performance, aspiring applicants with a desire to
discover new knowledge and to drive forward advanced materials engineering data analysis technologies. It is desirable that the candidate possess a subset of the following skills:

- Excellent interpersonal and communication skills consistent with successful teamwork, paper publication output and a collegial approach.
- Ability to design and/or implement a substantial programme of research including initiating and directing new research programmes.
- Provided assistance to enterprises or other groups for technology development.
- Demonstrated ability in conveying their research nationally and internationally (for example by publishing in high quality peer reviewed journals of international standing, presentation at a conference and through interaction with industrial partners), particularly in advanced materials engineering data analysis.
- Demonstrated potential to attract research funding from competitive research funding schemes and/or industry.

Candidates will be assessed on the following competencies:

**Discipline knowledge and research skills** – Demonstrates knowledge of their 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 stake-holders) and the ability to contribute to grant applications and funding initiatives

**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

**Management & leadership skills** - Demonstrates the potential to manage a research project including the supervision of undergraduate students

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