



<b>Research Centre:</b>	I-Form, Advanced Manufacturing Research Centre
<b>Post title:</b>	Postdoctoral Researcher
<b>Level:</b>	Level 1
<b>Post duration:</b>	Fixed Term Contract up to 3 Years

### **Research Career Framework**

As part of this role the researcher will be required to participate in the DCU Research Career Framework <http://www.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.

### **Background**

Dublin City University (DCU) is one of the largest universities in Ireland. Its student population is approximately 13,000, including 500 research postgraduates and over 1,800 taught postgraduate students, plus around 3,000 distance education students. DCU is a research-led university which has developed its own research specialists, established internationally recognized centres of excellence that have substantive collaborative links with leading universities and industrial partners.

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 to advance your academic career.

### **I-FORM Advanced Manufacturing Research Centre**

The I-FORM Advanced Manufacturing Research Centre has been established by Science Foundation Ireland (SFI) to deliver high-impact, innovative science and engineering research. I-

FORM has particular focus on additive manufacturing ('3D printing') combined with advanced digital technologies applied in a precision manufacturing environment, see <http://www.deantus.ie/>.

The Centre brings together a multi-disciplinary team of over 80 PhD and Post-Doc researchers in manufacturing engineering, materials and data science, in a cross-disciplinary and translational research environment. I-FORM operates in close collaboration with a global network of companies and collaborators.

### **Principle Duties and Responsibilities**

- Conduct a specified programme of research under the supervision and direction of the Principal Investigator.
- Assist in identifying and developing future research and funding initiatives
- Engage in the dissemination of the results of the research in which he/she is engaged with the support of and under the supervision of the Principal Investigator
- Supervise and assist undergraduate students working in this area with their research
- Engage in appropriate training and development opportunities as required by the Principal Investigator, the School or Research Centre, or the University.
- 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

### **Project: Surface and bulk characterisation of metal AM powders and produced components**

This project will utilize the chemical compositional measurement capabilities in DCU to determine both the elemental composition and the associated oxidation states in the near surface region of metal powders and subsequently in the metal AM produced parts. While the primary experimental techniques used in these studies will be X-ray photoelectron spectroscopy (XPS), advanced synchrotron radiation based measurement techniques may also be used to characterise more bulk-like chemical composition properties of both the metal powders and the SLM materials. Powder nano/micro-structure and fluidity will also be measured. Bulk mechanical properties from produced metal AM components will be recorded. Correlation of the

powder surface and bulk characterisation results with the SLM produced sample properties will be analysed within the project.

### **Minimum Criteria**

Applicants should have a PhD in a discipline relevant to surface and interface characterisation methods. A broad knowledge of surface and interface characterisation methods and vacuum technologies is essential. It is preferable for the candidate to have experience in additive manufacturing.

The team is looking for high performance aspiring applicants with a desire to discovering new knowledge and to drive forward advanced manufacturing technologies. Applicants are invited from high achieving graduates with the specific related backgrounds noted above. Ideally the applicant will have demonstrated:

- An ability to design and/or implement a substantial programme of research including initiating and leading new research programmes.
- Demonstrated ability in communicating their research nationally and internationally (for example by publishing in high quality peer reviewed journals of international standing, presentation at conference and through interaction with industrial partners).
- Experience in assisting with the supervision of postgraduate students would also be desirable as would financial management of a research project.
- A demonstrated ability of good communication skills will be sought.

**Salary:** \*€36,854 – €47,728

\*Appointments will be commensurate with qualifications and experience and will be made on the appropriate point of the salary scales, in line with current Government pay policy.

**Closing Date:** 16<sup>th</sup> March 2018

## **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.

**Communication 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/postgraduate students.

### **Informal enquiries to:**

Professor Greg Hughes, VPRI, [greg.hughes@dcu.ie](mailto:greg.hughes@dcu.ie) Phone: +353 (0)1 700 5390

Professor Dermot Brabazon, School of Mechanical & Manufacturing Engineering E-mail: [Dermot.brabazon@dcu.ie](mailto:Dermot.brabazon@dcu.ie) Phone: +353 (0)1 700 8213

***Please do not send applications to this email address, instead apply as described below.***

## **Application Procedure**

Application forms are available from the DCU Current Vacancies (Open Competitions) website at <http://www4.dcu.ie/hr/vacancies/current.shtml> and also from the Human Resources Department, Dublin City University, Dublin 9. Tel: +353 (0)1 700 5149; Fax: +353 (0)1 700 5500 Email: [hr.applications@dcu.ie](mailto:hr.applications@dcu.ie)

**Please clearly state the role that you are applying for in your application and email subject line: Job Ref 790 Post-Doctoral Researcher, I-Form, Advanced Manufacturing Research Centre**

Applications should be submitted by email to [hr.applications@dcu.ie](mailto: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: [hr.applications@dcu.ie](mailto:hr.applications@dcu.ie)

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