



Applications are invited from suitably qualified candidates for the following position

**Research Assistant- Automated Materials Testing  
Advanced Processing Technology Research Centre  
Fixed Term Contract up to 12 Months**

**Dublin City University**

Dublin City University (DCU) 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', DCU is a values-based institution, committed to the delivery of impact for the public good. DCU was named Sunday Times Irish University of the Year 2021.

DCU is based on three academic campuses in the Glasnevin-Drumcondra region of north Dublin. More than 18,000 students are 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 delivering a transformative student experience, and its positive social and economic impact. The university continues to develop innovative programmes in collaboration with industry, such as the DCU Futures suite of degrees, which are designed to equip graduates with the skills and knowledge required in a rapidly evolving economy.

DCU's pursuit of excellence has led to its current ranking among the top 2% of universities globally. It is also one of the world's Top Young Universities (QS Top 100 Under 50, Times Higher Top 150 Under 100). In the Times Higher Education University Impact Rankings 2021, DCU ranked 23rd in the world for its approach to widening participation in higher education and its ongoing commitment to eradicating poverty, while it ranks 38th globally for its work in reducing inequality and 89th globally for gender equality.

The university is ranked 23rd in the world and first in Ireland for its graduate employment rate, according to the 2020 QS Graduate Employability Rankings. Over the past decade, DCU has been the leading Irish university in the area of technology transfer, as reflected by licensing of intellectual property.

**Advanced Processing Technology Research Centre**

The Advanced Processing Technology Research Centre (APT) focuses on state of the art research activities in the areas of Production Technology, Product Design & Sustainability, Micro and Nano

Systems Technology, Advanced Materials Engineering and Bio Systems. The APT is a leading international research centre which as a primary goal strives to provide significant translational benefit to the wider community. Research projects undertaken within APT are conducted to a world class level and support local and internationally based enterprises. The APT research group has established a strong infrastructure of equipment and people in the area of processing technologies at DCU. APTs education and outreach events include seminars and courses which enable the transfer of processing technologies knowledge to the broader community.

## **The Role**

I-Form Advanced Manufacturing Research Centre are seeking a Research Assistants to work on a project that will develop the next generation of nitinol based heat pumps.

A large focus of this project is on the optimisation of a core element in a heat pump system, the product of a partner company. The nitinol material will be metal 3D printed in various formats and tested. The core structure design will be optimised for achieving a combination of high strength and high latent heat capacity and release rate. This will provide a basis for the heat pump system enhancement. The design freedom of metal AM will thereby be investigated to allow for improved heat exchange efficiency and robustness.

In this role, a rig to control the stress level on the core and the temperature of the core, as well as the fluid flow will be implemented. Sensors to record strain, stress, temperature, and flow rate will be used to characterise the material response, the efficiency of the system, and to enhance the process control.

## **Principal Duties and Responsibilities**

Reporting to his/her Principal Investigator the Researcher will:

- A primary focus of this role is to conduct research in the area(s) relevant to the project.
- Provide assistance/advice within the group on the automation and testing topics.
- Assist the Principal Investigator and the research group in the design and development of the specific research programme.
- Produce top quality reports, in conjunction with the PIs.
- Support the development of proposals for research funding.
- Participate in Centre activities, including industry showcases, annual reviews and industry and agency visits to the labs.
- Carry out administrative work associated with the programme of research as necessary
- Other tasks relevant to successfully implementing the assigned research programme.

## **Qualifications, Skills and Experience Required**

The candidate must have a PhD in materials and manufacturing engineering with a focus on automation and control using control software such as LabVIEW. The team is seeking high performance, aspiring applicants with a desire to discover new knowledge and to drive forward advanced materials and manufacturing technologies.

**In addition, it is desirable that the candidate has a subset of the following skills:**

- Demonstrated ability in conveying 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.

### **Essential 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.

***Dublin City University is an equal opportunities employer. In line with the Employment Equality Acts 1998 – 2015, the University is committed to equality of treatment for all those who engage with its recruitment, selection and appointment processes. The University's Athena SWAN Bronze Award signifies the University's commitment to promoting gender equality and addressing any gender pay gaps. Information on a range of university policies aimed at creating a supportive and flexible work environment are available in the [DCU Policy Starter Packs](#)***