Marie Skłodowska-Curie Actions

DCU Ollscoil Chathair Bhaile Átha Cliath Dublin City University

**DCU Faculty of Engineering & Computing, School of Mechanical and Manufacturing Engineering**
**Dublin City University**

School of Mechanical and Manufacturing Engineering is looking to host an experienced researcher via funding through Marie Sklodowska-Curie Individual Fellowships. In order to secure funding, the experienced researcher must develop a proposal with the host for the September 9th, 2020 deadline.

**Organisation Description**

DCU is a research-intensive University. DCU is committed to ensuring the highest standards of integrity in all aspects of our research, in line with the National Policy Statement on Ensuring Research Integrity in Ireland and the European Code of Conduct for Research Integrity. DCU provides research students with excellent designated research office space, internet and library resources. The school of Mechanical and Manufacturing Engineering operates within the Faculty of Engineering and Computing and is a young dynamic school providing degrees in Mechanical, Mechatronic and Biomedical Engineering at bachelor and master's level. The school has been successful in attracting funding from national and European agencies for research at doctoral and postdoctoral level.

**Project idea and researcher opportunities**

*Research Field:* The aim of the research proposed here is to develop a technique for monitoring phase change in materials using fractional calculus. Many materials transform from one physical state to another, for instance a liquid state to a solid state. While there are methods for monitoring such behaviour, they are generic in nature and do not account for the specific characteristics of the material under consideration. DCU has developed a new method whereby bespoke analytical techniques based on fractional calculus theory can be applied to complex systems allowing for a deeper understanding of the behaviour involved. This technique will be applied when designing and building suitable sensing systems for monitoring phase change.

**Researcher Requirements**

- The researcher must fulfil the MSCA-IF mobility and experienced researcher requirements. [1]

[1] **MSCA-IF mobility:** The researcher must not have resided or carried out the main activity (work, studies, etc.) in the country of the beneficiary for more than 12 months in the 3 years immediately before the call September 9th deadline (flexible 36 months in the 5 previous years if eligible for career restart or reintegration fellowship https://www.iua.ie/irish-marie-curie-office/funding-calls/individual-fellowships/ )
**Experienced researcher requirements**: The researcher must have at least 4-years full time research experience or hold a doctorate before the September 9th deadline.



- Applicants should have a PhD (or more than 4 years of research experience) in a relevant area of Mechanical or Mechatronic Engineering and demonstrate a promising track record of early research achievements.
- Good analytical and mathematical skills will be required given the nature of the project outlined above.

**Application procedure**

The applicant should provide:

1. A short CV
2. A description of any research proposals you have been involved with and your input to these.
3. A short statement indicating your experience of mechanical/mechatronic engineering.

**Contact information**

If you are interested in applying for a MSCA-IF with DCU School of Mechanical and Manufacturing Engineering please email Dr Gareth Whiting (gareth.whiting@dcu.ie) and Dr Ines Perić (ines.peric@dcu.ie)