**Marie Skłodowska-Curie Studentship for PhD students at CÚRAM & UCD, Ireland**

The Medical Device Doctoral (MedDevDoc) program aims to address the gap between academic MedTech research and clinical translation by training doctoral students at CÚRAM, SFI Research Centre for Medical Devices. University College Dublin (UCD) is one of the host organisations of CÚRAM, which is also one of the leading universities in biomedical engineering in Ireland. This project is funded by the European Union’s Horizon Europe Excellent Science programme under the Marie Skłodowska-Curie grant agreement No. 101126640.

**Project descriptions:**

Title: High throughput molecular detection device utilising solid-state nanopore array for high-accuracy and high-efficiency detection

Nanopore-based DNA sequencing has obtained great commercial and scientific success. However, key limitations include using biological nanopores (large molecules from nature) to detect the targets one by one at a temporal sequence, which imposes significant limitations on the detectable target size and detection efficiency. This project utilises solid-state nanopore array chips (nanopores formed in biocompatible engineering materials) to detect molecules of various sizes. Millions of nanopores are used in the chip to change the conventional temporal-sequence detection to spatial-distribution-based detection based on an extremely innovative device design, and facilitated by AI technology. This method can be applied for virus detection, early-stage cancer diagnosis, proteins identification, DNA sequencing, etc. This project is hosted by the Centre of Micro/Nano Manufacturing Technology (https://www.mnmt-dublin.org/) at University College Dublin.

The target candidates are MSc students with background in molecular biology, life science, medical device, nanotechnology, biochemistry, physics, or related disciplines. The successful applicants will be recruited for a maximum of 4 years PhD research in the area of single molecule detection based on nanopore chips, including a mandatory secondment (six months) to a non-academic research partner appropriate to further the student's research, training, and career development needs.

The applicants who are interested in this position must contact the PI, Dr Jufan Zhang at UCD for more details before submitting the application. Please send your CV to Jufan.zhang@ucd.ie and indicate your interest.

Essential Criteria:

As per the MSCA definition:

* MedDevDoc are open to candidates who have a 1st class or a 2:1 honour first degree and have/are due to obtain a Master’s in disciplines mentioned above from different genders and nationalities. They must not already own a doctoral degree. Medical Doctors are also invited to apply if they can demonstrate an understanding of the clinical or life sciences research process.
* All applicants for whom first language is not English must present an English language qualification taken within two years before the application (Suggested English language qualifications include IELTS, Cambridge C1 Advanced, Cambridge C2 Advanced, TOEFL iBT/TOEFL iBT Home Edition, Pearson PTE and Duolingo)
* Comply with the MSCA mobility rule: have not resided or carried out their main activity (work, studies, etc.) in Ireland for more than 12 months in the three years immediately before the submission deadline.  Compulsory national service and short stays such as holidays are not considered.

**Gross Salary:**

Remuneration aligns with [EC rules](https://www.ait.ie/) for Marie Skłodowska- Curie COFUND grants:

The minimum gross salary range for doctoral fellowships is from €30,901 to €37,726 per annum.

The range depends on the applicant's eligibility, such as Mobility and Family allowance. Salaries are subject to taxes and deductions, e.g., deduction of PRSI (employee social security) and income taxes. For more information about tax entitlements, please go to [https://www.revenue.ie/](http://www.ucc.ie/en/)

**Start date:** Positions are available from November 2024.

**Introduction of CÚRAM:**

CÚRAM, SFI Research Centre for Medical Devices (CÚRAM – meaning "care" in the Irish language) is a national, SFI-funded, 64.8 Million Euro research Centre that brings together researchers from the University of Galway (GALWAY), University College Dublin (UCD), the Royal College of Surgeons in Ireland (RCSI), Trinity College Dublin (TCD), University of Limerick (UL), Dublin City University (DCU), University College Cork (UCC), Technological University of the Shannon (TUS), National Institute for Bioprocessing Research and Training (NIBRT), Technological University Dublin (TU Dublin). CÚRAM's vision is to be a global leader in creating and translating clinic-ready and patient-focused medical devices, develop the next generation of industry-relevant, publicly engaged researchers, and anchor for industry-applicable research. Cutting-edge science will develop devices using the latest research from biomaterials, stem cells, and drug delivery and the support of clinical solid collaborations, industry partners, and hospital groups to enable rapid translation to the clinic. CÚRAM industry partners include Irish companies and multinationals in medical device, pharmaceutical, and biotechnology.

**Introduction of Marie Skłodowksa-Curie Studentships:**

The MedDevDoc program is part of the Marie Skłodowksa-Curie Actions (MSCA), a European Commission funding program under Horizon Europe. Named after the double Nobel prize-winning Polish-French scientist Marie Skłodowksa-Curie, MSCA offers excellent and innovative research training, attractive career development, and knowledge-exchange opportunities across borders and sectors, e.g., academia and industry. Marie Skłodowksa-Curie Fellowships are internationally recognised as a mark of research excellence.