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| College Management Unit: | College of Engineering & Architecture |
| School Unit: | School of Mechanical & Materials Engineering |
| Post Title & Subject Area (if relevant) | UCD Post-doctoral Research Fellow Level 1 |
| Project: | High-precision 3D printing |
| Post Duration: | 6 months |
| Line Manager | Prof. Michael Gilchrist |
| Competition Ref. N^o | 017978 |
| HR Administrator | Natalia McDonagh |

Position Summary:

This post will appeal to a motivated postdoctoral researcher with experience of micro 3D printing for the development of high-precision 3D printing equipment and related microfluidic diagnostic technology. The position is for 6 months. This research will involve optimizing existing 3D printing techniques and processes to achieve high-resolution outputs, with applications that include the fabrication of high-precision microfluidic chips, and the optimisation of complementary microfluidic diagnostic instrumentation. The successful candidate will work on topics that include hardware optimization, photopolymer material development and micro-scale fabrication, and will collaborate with a multidisciplinary research team to enhance the performance and application of these technologies.

This is a research focused role, where you will conduct a specified programme of research supported by research training and development under the supervision and direction of a Principal Investigator.

The primary purpose of the role is to further develop your research skills and competences, including the processes of publication in peer-reviewed academic publications, the development of funding proposals, the mentorship of graduate students along with the opportunity to develop your skills in research led teaching.

In addition to the Principal Duties and Responsibilities listed below, the successful candidate will also carry out the following duties specific to this project:

- Design and execute experimental plans
- Responsible for maintaining and operating 3D printing equipment, performing printing tasks, and characterizing printed samples to verify microstructural features
- Develop demonstrator microfluidic chips using 3D printing equipment
- Optimise the operational efficiency of a prototype microfluidics instrumentation

Principal Duties and Responsibilities:

- Conduct a specified programme of research and scholarship under the supervision and direction of your Principal Investigator.
- Engage in appropriate training and professional development opportunities as required by your Principal Investigator, your School or Institute, or the University.
- Engage in the dissemination of the results of the research in which you are engaged as directed by and with the support of and under the supervision of your Principal Investigator.
- Engage in the wider research and scholarly activities of your research group, School and Institute.
- Mentor and assist, as appropriate and as directed, the research graduate students in your group, School and Institute.

- Carry out administrative work associated with your programme of research.

Salary: €44847 per annum

Details on eligibility to compete and pension information is available at

<https://www.ucd.ie/hr/resourcing/eligibilitytocompete/>

UCD is committed to creating an inclusive environment where diversity is celebrated and everyone is afforded equality of opportunity. We welcome applications from everyone, including those who identify with any of the protected characteristics that are set out in our Equality, Diversity and Inclusion policy. Learn more about Diversity at

<https://www.ucd.ie/workatucd/diversity/>

Reasonable accommodations will be provided to any applicant during the interview process who discloses they have a disability or are neurodiverse.

Selection Criteria

Selection criteria outline the qualifications, skills, knowledge and/or experience that the successful candidate would need to demonstrate for successful discharge of the responsibilities of the post. Applications will be assessed on the basis of how well candidates satisfy these criteria.

Mandatory:

- PhD in mechanical engineering, with an interest in high-precision manufacturing
- Experience in developing precision equipment and micro-scale 3D polymer printers
- Experience in developing novel materials for 3D printing
- A demonstrated commitment to research and publications
- An understanding of the operational requirements for a successful research project
- Evidence of research activity (publications, conference presentations, awards) and future scholarly output (working papers, research proposals, and ability to outline a research project).
- Excellent Communication Skills (Oral, Written, Presentation etc).
- Excellent Organisational and Administrative skills including a proven ability to work to deadlines.
- Candidates must demonstrate an awareness of equality, diversity and inclusion agenda.

The PD1 position is intended for early stage researchers, either just after completion of a PhD or for someone entering a new area for the first time. If you have already completed your PD1 stage in UCD or will soon complete a PD1, or you are an external applicant whose total Postdoctoral experience, inclusive of the duration of the advertised post, would exceed 4 years, you should not apply and should refer to PD2 posts instead.

Desirable:

- Experience in microfluidic chip fabrication
- Proven collaborative and teamwork skills appropriate to working in a shared laboratory area
- Experience in setting own research agenda

Supplementary information:

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| The University: | https://www.ucd.ie/ |
| UCD Strategy 2020-2024: Rising to the Future | https://strategy.ucd.ie/ |
| The College/Management Unit: | https://www.ucd.ie/eacollege/ |
| The School/Programme Office/Unit: | https://www.ucd.ie/mecheng/ |
| Equality Diversity and Inclusion at UCD | https://www.ucd.ie/workatucd/diversity/ |

UCD offers a comprehensive **Research Careers Framework** in line with the Advisory Science Council Report '*Towards a Framework for Researcher Careers*'. This model provides a structured and supportive **Career and Skills Development** system designed to ensure that Post-docs in UCD are able to plan their careers and prepare for future opportunities in academia, industry or the public sector. For more information, please [click here](#)

Informal Enquiries ONLY to:

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| Name: | Professor Michael Gilchrist |
| Title: | Professor |
| Email address: | michael.gilchrist@ucd.ie |