

## Four PhD positions

The successful applicants will be based in the UCD Biofilm Laboratory (<http://biofilmlab.ucd.ie>). They will join a dynamic multi-disciplinary research team and involves collaboration with the Centre for Bionano Interactions (<http://www.ucd.ie/cbni>). The project is funded by Science Foundation Ireland ([www.sfi.ie](http://www.sfi.ie)). The Principal Investigator is Prof Eoin Casey (<https://goo.gl/J9IAO7>)

### Research Topic

Biofilms are accumulations of microorganisms that adhere to surfaces and to each other within a matrix of self-produced extracellular polymeric substances (EPS). The microorganisms in biofilms display a tolerance to antimicrobials, including disinfectants and antibiotics and are difficult to eradicate. Attention is now shifting to methods for the degradation/dispersion of the biofilm EPS matrix. This project aims to exploit the potential of nanoparticles (NPs) for biofilm control. There is currently a lack of a fundamental understanding of mechanisms associated with biofilm-nanoparticle interactions. A critical challenge concerns the role of the NP-biofilm matrix interactions.

### Your Profile

You should be motivated and enthusiastic with an excellent academic record. You must hold (or soon hold) a Masters or strong Bachelor's degree in Physical Chemistry, Microbiology, Chemical Engineering, or Materials Science and have some laboratory experience. You should have the ability to work independently and as part of a team

### Applications

To apply, send a (max) 2-page CV including course grade details, and a one page motivation letter to [eoin.casey@ucd.ie](mailto:eoin.casey@ucd.ie) Deadline is January 22<sup>nd</sup> 2017 or until the positions are filled

### References

Zanoni et al (2015) 'Antifouling activity of enzyme-functionalized silica nanobeads. Biotechnology and Bioengineering'. Biotechnology and Bioengineering, 113 :501-512 <https://goo.gl/ZT4Dqc>

Cao et al (2016) 'Revealing region-specific biofilm viscoelastic properties by means of a microrheological approach'. npj Biofilms and Microbiomes, [www.go.nature.com/2h0UT0J](http://www.go.nature.com/2h0UT0J)