



Waterford Institute of Technology  
INSTITIÚID TEICNEOLAÍOCHTA PHORT LÁIRGE

## Postgraduate Scholarship Information Sheet

<b>Scholarship title</b>	Designing novel antibiotic particles for inhalation therapy
<b>Reference number</b>	WD_2017_PhD_016
<b>Supervisor(s)</b>	Dr Helen Fox and Dr Niall O'Reilly
<b>Research Group</b>	Pharmaceutical and Molecular Biotechnology Research Centre
<b>Department / School</b>	Department of Science, School of Science and Computing
<b>Duration</b>	4 years
<b>Status: Full-time / part-time</b>	Full-time
<b>Funding information</b>	Funding agency: Waterford Institute of Technology Funding programme: WIT PhD Scholarship
<b>Value of the scholarship (per annum)</b>	Stipend: €10,000 Fees: €4,500 Research costs: €2,000
<b>Teaching requirement (if any)</b>	Two hours of academic development activities per week during the academic year in line with scholarship requirements
<b>Closing date and time</b>	Monday 24 <sup>th</sup> April 2017 at 5pm GMT
<b>Commencement date</b>	1 <sup>st</sup> September 2017

### Post summary

Applications are invited for a PhD position in the Pharmaceutical and Molecular Biotechnology Research Centre (PMBrc) in WIT. The PhD will use spray drying to prepare inhalable drug particles for administration by dry powder inhaler (DPI). The project will investigate how spray drying parameters and particle composition influence the particles' size, shape, surface/bulk characteristics and stability using characterisation techniques such as differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), dynamic vapour sorption (DVS), nitrogen sorption, particle size analysis, surface energy analysis, scanning electron microscopy (SEM), powder x-ray diffraction (XRPD) and solid-state nuclear magnetic resonance (ssNMR). Atomic force microscopy (AFM) will be used to map the particles' surface to assess the impact of formulation conditions, particle composition and surface features on the particle's physical properties at a particulate level. During the PhD, the student will be expected to carry out lab work, analyse and interpret result data, stay up to date with current literature and communicate results through presentations, reports and the publication of journal articles.

## Person specification

### Qualifications

#### Essential

- Applicants should hold or expect to attain, as a minimum, a 2.1 Honours degree<sup>1</sup>, or equivalent, by the 1<sup>st</sup> of August 2017, in chemistry, physics, pharmaceutical science or related discipline

#### Desirable

- MSc in chemistry, pharmaceutical science, materials science or related discipline

### Knowledge & Experience

#### Essential

- Experience of working in a lab

#### Desirable

- Experience of carrying out research in a lab environment
- Experience in spray drying or AFM
- Experience in the use of materials characterisation and analytical techniques and instrumentation.
- Previous experience in materials characterisation, pre-formulation, particulate interactions or powder handling.
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### Skills & Competencies

#### Essential

- Strong communication, presentation and report writing skills
- Ability to work independently
- High degree of competence in Word, Excel and Powerpoint
- Applicants whose first language is not English must submit evidence of competency in English, please see [WIT's English Language Requirements](#) for details.

#### Desirable

- Experience using literature search and reference management software

## Further information

For any informal queries, please contact Helen Fox by email at [hfox@wit.ie](mailto:hfox@wit.ie) or telephone +353 (0)51 306151

For queries relating to the application and admission process please contact the Postgraduate Admissions Office via email [pgadmissions@wit.ie](mailto:pgadmissions@wit.ie) or telephone +353 (0)51 302883.

Website: [www.wit.ie](http://www.wit.ie)

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<sup>1</sup> If undergraduate examination results are not known at the time of application, WIT may make a provisional offer of a scholarship on condition that the applicant's bachelor's degree results is a first class or upper second-class honours.

## **Application procedure**

Please download the Research Postgraduate Application Form from the WIT Website.

Any queries relating to the application process should be emailed to [pgadmissions@wit.ie](mailto:pgadmissions@wit.ie)

**The Institute may decide to interview only those applicants who appear from the information available, to be the most suitable, in terms of experience, qualifications and other requirements of the post.**

**WATERFORD INSTITUTE OF TECHNOLOGY IS AN EQUAL OPPORTUNITIES EMPLOYER**



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