

Faculty of Science and Health

FACULTY RESEARCH COMMITTEE



Undergraduate Summer Research Internship Scheme 2017

Project Title: *Applications of nanoparticles for waste water treatment*

Principal Investigator: *Mr. Brian Freeland*

School/Research Centre: *School of Biotechnology*

Project Description

Project Aims

This project consists of utilising Nanoparticles fabricated from pulsed laser ablation of solids in liquid (PLAL), a green “synthesis” production technology. He/she will investigate the application of nanoparticles as an antibacterial agent for waste water treatment. The work will involve developing assays to determine the effectiveness of various PLAL generated colloids, of differing concentrations and particle sizes and determine which material offers the most efficient anti-bacterial properties.

Potential Candidates

The student will get exposure to various state-of-the-art characterisation tools for examining nanoparticles morphology and components. They will integrate that knowledge with standard “on-the-bench” biological assays and on-line bioprocess monitoring, which the group have considerable experience in.

After completing this project, the student will have gained experience in nanotechnology and its uses in waste water treatment, an emerging field with currently very promising results and wide reaching applications. They will have gained lab based experience in a cross disciplinary laboratory including Biotechnologists, physicists, chemists and engineers. This is a good opportunity to attain more a more advanced level of laboratory & research skills and would be helpful for a student towards IRC applications.