**Project Title**  
Light-activated anti-infective surfaces for healthcare.

**Supervisors**  
Professor Colin P. McCoy (main supervisor), Professor Sean P. Gorman, Dr. Louise Carson

**Description**  
The prevention and control of infection in hospitals and care homes is a high-priority area of research. Manufacturing facilities and food production sites also require environments where bacteria, viruses and fungi can be effectively controlled.

We have recently demonstrated a method of localising light-activated compounds on material surfaces, which generate highly toxic species on exposure to normal daylight and are capable of killing bacteria, viruses and fungi without inducing resistance, which is seen with many conventional drugs. The photoactive technology, which is based on the established clinical principle of photodynamic therapy, is not depleted during use, so can give long-lived, persistent resistance to infection to a wide range of materials.

This project will extend the application of this technology in exciting new areas, and will explore interesting properties observed when the technology is used in combination with other species. Understanding this synergy will allow us to develop new surfaces for a range of healthcare and related settings.

This 3-year project will give extensive experience in materials science, characterisation and microbiology as part of an internationally-funded research team.

**Start Date**  
October 2015

**Keywords**  
Triggered delivery, photodynamic therapy, infection control, biomaterials

---

**Contact Details**  
pharmacypostgrad@qub.ac.uk

**How to Apply**  
Postgraduate applications should be made using Queen’s Online:  
http://go.qub.ac.uk/pgapply

Please note that there are two application processes: one for admission to the university and another for postgraduate awards.

**Further Information**  
Additional information for prospective postgraduate students can be found on the School of Pharmacy website:  
http://www.qub.ac.uk/pha  
and the Queen’s Postgraduate website:  
http://www.qub.ac.uk/home/ProspectiveStudents/PostgraduateStudents/