



## *School of Pharmacy PhD Projects 2013*

**Project Title** Development of novel strategies to enhance resistance to infection and encrustation and to enhance lubricity of urinary catheters

**Supervisors** Prof. David Jones, Prof. Colin McCoy and Dr. Gavin P. Andrews

**Description** Medical device related infection and encrustation are major problems associated with medical devices, resulting in increased patient morbidity and mortality. Additionally lubricity is an important determinant of catheter performance, influencing the ease of insertion and removal of this class of medical device. Several strategies have been employed to design catheters that offer simultaneously offer an enhanced resistance to infection and encrustation and offer a lubricious surface, all with limited/no effect. In this programme, novel coatings of catheters will be designed and formulated as microemulsions in which the disperse oil phase will be designed to offer antimicrobial properties. In use it is expected that the antimicrobial disperse phase of the emulsion will exude to the surface of the catheter and simultaneously kill and remove the attached microorganisms. Similarly by consideration of the properties of the antimicrobial disperse phase, attached encrustation may similarly be solubilized and removed from the catheter surface by the exuding action of the oil phase.

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

**Start Date** October 2013

**Keywords**

### **Contact Details**

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### **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/>