



## *School of Pharmacy PhD Projects 2014*

- Project Title** Formulation and characterisation of novel liquid crystalline hydrogel systems designed for the prevention of infection and encrustation on urological medical devices
- Supervisors** Prof. David Jones, Dr. Colin McCoy & Dr. Gavin P. Andrews
- Description** Hydrogels are hydrophilic polymers that are composed of a high proportion of water, which renders them biocompatible. Despite this, there are however two disadvantages to the use of these materials, namely low resistance to medical device related infection and an inability to offer controlled release of bioactive agents. Novel hydrogel materials have been designed within the School of Pharmacy containing lipophilic, liquid crystal surfactant systems that offer resistance to both biofilm formation and encrustation, two major clinical problems associated with urological medical devices. This project will further develop these materials and examine the mechanism behind the observed biological properties. In addition, the ability of these systems to offer controlled drug delivery will be examined
- 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** 1 October 2014
- Keywords** Hydrogels, medical device related infection, material science

### **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/>