

PhD Studentship

Supramolecular hydrogels

Applications are invited for a three-year full-time PhD studentship entitled “Supramolecular Hydrogels” to be jointly supervised by Dr Alison Edwards and Dr Andrew Hall at the Medway School of Pharmacy in Kent.

Nature has utilised carbohydrates as structural (extracellular matrix) and functional (recognition) elements, thus it is logical to employ them in the design of hydrogels, *i.e.* functional materials which are gels formed in water. A key focus of the project will be the efficient and scalable synthesis of hydrogelators using low-cost carbohydrate-based starting materials from renewable sources. Building on existing knowledge of aromatic carbohydrate amphiphiles, a number of designed potential gelators will be prepared using sugar scaffolds *via* short synthetic routes. Gelation will be assessed in water and a phosphate buffer solution, which mimics biological conditions, using a thermal trigger. Spectroscopic, microscopic and materials techniques will be employed to characterise the resultant hydrogels and their modes of self-assembly. The results will inform the design of different gelation triggers (*e.g.* pH and enzymatic) and explore biocompatibility for different applications.

This is an interdisciplinary project and will involve close collaboration with Prof. Rein Ulijn at the University of Strathclyde, Glasgow.

Candidates should have at least a first or upper second-class degree, or equivalent, in the following areas: chemical or materials sciences. An MSc in the above subject areas would be particularly welcome, as would experience of organic synthesis (carbohydrate or peptide) or materials characterisation.

To apply, send (preferably by e-mail) a detailed CV, the names and contact details of two academic referees and a cover letter to Dr. Andrew J. Hall, Medway School of Pharmacy, Universities of Greenwich & Kent, Central Avenue, Chatham, Kent, United Kingdom ME4 4TB, e-mail: A.Hall@kent.ac.uk.

This position provides tuition fees, plus a maintenance allowance, for UK and EU nationals only. Self-funding international applicants are also encouraged to apply.

The closing date for applications is **Sunday 28th October 2012**.