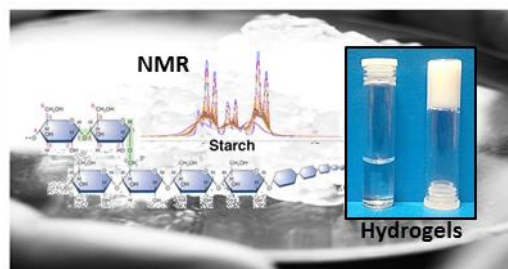

PhD Position

Sweetening Drug Delivery for Future Therapies: Hydrogels Based on Sugars for Biomedical Applications

Hydrogels are 3D, cross-linked networks of water-soluble polymers, and formulated in a variety of physical forms. Hydrogels show great promise in biomedical applications, (tissue engineering, regenerative medicine, diagnostics, cellular immobilization, separation of biomolecules or cells). Polysaccharides are excellent biopolymers for hydrogel preparation in biomedical contexts: they are non-toxic, water-soluble, and they can be biodegraded to nontoxic products easily assimilated by the body. Advances in polymer preparation for hydrogels (enzymatic procedures, nanocomposites, etc.) needs to be followed by an **understanding at molecular level of the processes of gelation**, the **role of water**, and the **impact on final performance**.



In this project, a highly multidisciplinary collaboration between the **School of Pharmacy (UEA)** and the **John Innes Centre (Norwich Research Park, NRP)**, we will use **state-of-the-art NMR spectroscopy** (solution, solid, and gel state advanced experiments) to deepen our understanding of the molecular details of novel hydrogel materials based on starch and nanocellulose fibres. We will use **cutting-edge glycobiology techniques** (enzymatic and click chemistry) for functionalisation of nanocrystalline cellulose, prepare advanced materials (nanocomposite and interpenetrating network hydrogels), and will develop novel NMR spectroscopic protocols to understand the structure and dynamics of the biomaterials. This project has been shortlisted for funding by the Norwich Biosciences Doctoral Training Partnership (NRPDTP). Shortlisted applicants will be interviewed as part of the studentship competition. Candidates will be interviewed on either the 12th, 13th or 14th January 2016.

The **Norwich Biosciences Doctoral Training Partnership (NRPDTP)** offers postgraduates the opportunity to undertake a **4 year research project** whilst enhancing professional development and research skills through a comprehensive training programme. You will join a vibrant community of world-leading researchers. All NRPDTP students undertake a **three month professional internship (PIPS)** during their study. The internship offers exciting and invaluable work experience designed to enhance professional development. Full support and advice will be provided by our Professional Internship team. Students with, or expecting to attain, at least an upper second class honours degree, or equivalent, are invited to apply. Interested strong candidates can contact **Dr. Jesus Angulo** (j.angulo@uea.ac.uk).

For further information and to apply, please visit the website: <https://www.uea.ac.uk/study/postgraduate/research-degrees/phds-and-studentships/pharmacy> (Applications will close on Monday 30th November 2015)

Funding Notes

Full Studentships cover a stipend (RCUK rate: £14,057pa - 2015/6), research costs and tuition fees at UK/EU rate, and are available to UK and EU students who meet the UK residency requirements.

Students from EU countries who do not meet the UK residency requirements may be eligible for a fees-only award. Students in receipt of a fees-only award will be eligible for a maintenance stipend awarded by the NRPDTP Bioscience Doctoral Scholarships, which when combined will equal a full studentship. To be eligible students must meet the EU residency requirements. Details on eligibility for funding on the BBSRC website: [View Website](#).