

Project proposal

Project title	<input type="text" value="Investigation of Pore Structure in Pharmaceutical Gels"/>	
First Supervisor	Professor <input type="text" value="Raid Alany"/>	<input type="text" value="Raid Alany"/>
Second Supervisor	<input type="text" value="Dr Nilesh Patel"/>	
School	<input type="text" value="Pharmacy and Chemistry"/>	
Other member of supervisory team (no more than three KU supervisors in total)	<input type="text" value="Prof David Wertheim"/> <input type="text" value="Professor Andy Augousti"/>	
Specific requirements beyond 2:1 degree	<input type="text"/>	

Project summary (max 4,000 characters)

MSc by Research

Pharmaceutical gels are systems comprising water-soluble polymers which are used as vehicles for drug delivery. They offer advantages over other drug delivery systems, e.g. a prolonged drug release system can be formed, which translates to less frequent dosing for the patient and thus aids adherence. Drug entrapment and release from these gels is dependent on the pore structures formed as a result of the interaction between the water-soluble polymers used. This has not been extensively investigated due to a lack of suitable investigative techniques. This project aims to apply microscope imaging to investigate pore structure in gels and relate this to drug release. Microscope techniques (2D and 3D) will be used to elucidate pore structure at different temperatures. The images will be analysed for pore size and connectivity. This is a multidisciplinary collaborative project involving Professor Raid Alany and Dr Nilesh Patel (School of Pharmacy and Chemistry), Dr David Wertheim (School of Computing and Information Systems) and Professor Andy Augousti (SEC Faculty) and may be of interest to students with a background in Biology, Chemistry and Pharmacy.

Related References:

Rupenthal ID, Green CR, Alany RG. *Int.J.Pharm.*2011,411:69-77.
Wang Y, Wertheim DF et al. *J.Pharm.Sci.*2010,99:2854-62.
Thrimawithana TR, Young S, Dunstan DE, Alany RG. *Carbohydrate Polymers.*2010,82:69-77.
Wang Y, Chang HI, Wertheim DF et al. *Biomaterials.*2007,28:4619-27.