



QUEEN'S UNIVERSITY BELFAST

*Title of studentship	SMART Cancer Nanomedicines
Value / what is covered?	Self-funding
Awarding body	
Number of studentships	1
*Summary descriptive text / Example of research project	<p>An important limitation in the treatment of cancer with chemotherapeutics is the inability to achieve therapeutically effective local drug concentrations avoiding healthy tissue damage. Liposomes are phospholipid-based delivery systems, clinically used for the transport of chemotherapeutics. The clinical use of phospholipid-based delivery systems is based on reduced toxicity to healthy tissues with a simultaneous increase in tumour accumulation. However, the accumulation of drug-loaded liposomes in the tumour tissue does not necessarily lead to a higher drug bioavailability.</p> <p>This project focuses on designing smart (stimuli-responsive) nanosystems for on-demand drug release for anti-cancer drug delivery. The scientific approach of this project is to fabricate new types of responsive drug delivery systems (e.g. temperature and hypoxia). The developed smart nanoparticles will be characterised, and their biological activity <i>in vitro</i> and <i>in vivo</i> will be evaluated. This highly interdisciplinary project combines expertise in formulation and biological testing and will provide a unique opportunity for excellent students to work in a stimulating multidisciplinary team.</p>
*Supervisor(s)	Dr Wafa Al-Jamal
*Eligibility / residence Status	Overseas/UK/EU
Country	Northern Ireland
*Start date and duration	From 1 April 2020 and for 3 years
*Faculty	MHLS
*Research centre / School	Pharmacy
Subject area	Smart nanoparticles, cancer nanomedicine, and targeted drug delivery

Candidate requirements / Key skills required for the post	Applicants should have a 1st or 2.1 honours degree (or equivalent) in a relevant subject. Relevant subjects include Pharmacy, Pharmaceutical Sciences, Biochemistry, Biological/Biomedical Sciences, Chemistry, Engineering, or a closely related discipline. Students who have a 2.2 honours degree and a Master's degree may also be considered, but the School reserves the right to shortlist for interview only those applicants who have demonstrated high academic attainment to date.
*Deadline for applications	September 2020
*How to apply / contacts	Postgraduate Research applicants must have applied to Queen's, via the Direct Applications Portal. https://dap.qub.ac.uk/portal/user/u_login.php
Relevant links / more information	http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/PostgraduatePositions/ http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/ http://pure.qub.ac.uk/portal/en/persons/wafa-aljamal
Keywords for search filters	Responsive nanoparticles, targeted drug delivery, cancer nanomedicine.
Training provided through the research project	This highly interdisciplinary project combines expertise in responsive materials, nanomedicine formulation, and drug delivery. It will provide a unique opportunity for excellent students to work in a stimulating multidisciplinary team. The candidate will be working on designing novel responsive nanocarriers that will be characterised using a range of spectroscopic techniques. The project will also involve evaluating the nanoparticles' activity in relevant <i>in vitro</i> and <i>in vivo</i> models. The successful candidate will be a highly motivated, hard-working graduate with excellent communication and organizational skills.
Expected impact activities	This research aims to develop new smart nanocarriers suitable for anticancer drug delivery.