



QUEEN'S UNIVERSITY BELFAST

*Title of studentship	Cold Plasmas for Microbial Control in the Food Chain
Value / what is covered?	Fully funded 100% of UK/EU tuition fees paid and an annual stipend for UK residents only (living expenses), currently at £14,777
Awarding body	DFE
Number of studentships	1
*Summary descriptive text / Example of research project	<p>The ability to generate plasmas (quasi-neutral, wholly or partially ionised gases) at ambient or tissue tolerable temperatures has given rise to the nascent field of plasma medicine. Cold plasmas have rapidly evolved as a technology for biological applications such as microbial decontamination and wound healing, owing to the chemical and bioactive radicals generated reactive oxygen (ROS) and nitrogen species (RNS), known collectively as RONS. This technology is increasingly proposed for applications in human medicine and recently many potential applications in the agri-food sector have emerged. Queen's University Belfast have recently established the AgriPlas Centre for Cold Plasmas in AgriFood Research to explore this exciting technology for controlling food and feed contamination, reducing antibiotic use in the food chain and reducing food waste.</p> <p>This Industry CAST award in partnership with Linden Foods, aims to understand and develop cold plasma based approaches to control spoilage-associated microorganisms and extend shelf-life of fresh, processed meat products. Cold plasma offers a range of unique possibilities in extension of product shelf-life through the in-situ production of a diverse range of reactive oxygen and nitrogen species (RONS) which are rapidly antimicrobial and in a range of modalities (direct plasma exposure, plasma activated water and in-pack plasma production) which are available in the AgriPlas lab. Thus, we (QUB-Linden Foods) are uniquely placed, through this PhD programme, to evaluate and translate cold plasma technology into real-world food processing applications.</p>
*Supervisor(s)	Prof Brendan Gilmore Gareth Weir, Linden Foods Dr Padrig Flynn
*Eligibility / residence Status	UK/EU only
Country	Northern Ireland

*Start date and duration	To Be Confirmed with Supervisors Funding covers a three-year full-time PhD.
*Faculty	MHLS
*Research centre / School	Pharmacy
Subject area	Pharmaceutical Microbiology, Antimicrobials and AMR, Plasma Medicine
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, Molecular Biology, Pharmaceutical Sciences, Biochemistry, Biological/Biomedical Sciences, Chemistry, Engineering, or a closely related discipline.
*Deadline for applications	15 th November 2019
*How to apply / contacts	Postgraduate Research applicants for Pharmacy who are interested in applying for a fully funded DFE studentship must have applied to Queen's, via the Direct Applications Portal, and submitted all required supporting documents by the closing date, which will be announced later in the Academic year. 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/
Keywords for search filters	Cold plasma, biofilms, ESKAPE pathogens, Immune activation
Training provided through the research project	The successful candidate will join a multidisciplinary team focusing on the microbiological interactions with cold plasma, currently funded by BBSRC and Innovate UK. The PhD candidate will be trained and develop high-level expertise in biofilm microbiology, plasma physics/plasma medicine, molecular microbiology, and have significant input and placement within the food industry
Expected impact activities	The project will deliver impact through the demonstration of cold plasma as a multimodal, multi-target approach to control spoilage associated microorganisms, as an alternative to conventional antimicrobial approaches. The candidate will present their work at international conferences and through peer reviewed, high impact publications