Information on Postgraduate Research Scholarship – Ref: Bezos-NRI-01-25			
Faculty:	Engineering and Science – Natural Resources Institute	**Department:**	Food and Markets
Lead Supervisor:	Vahid Baeghbali		
Co-Supervisor	Parag Acharya		
Project Title:	Advancing High Moisture Extrusion of Plant Protein blend for Next Generation Meat Analogue (HME4PPB)		
Project Description:	There is growing demand for sustainable, nutritious, and ethically produced protein sources which includes novel alternative proteins from underutilized plant and algae sources. The High Moisture Extrusion (HME) has emerged as a transformative process technology in the development of next-generation meat analogues (Ref: Foods, 2025, 14(8), 1396). However, there is a clear knowledge gap in applicability of HME to plant proteins beyond soy and pea to deliver optimal texturization. Current, there is lack of scientific insights on understanding how HME process drives physicochemical, texture, and sensory properties of plant protein blend. This PhD project aims to explore process-quality inter-relationship of textured plant protein blend using under-utilized legume and algae by optimising the HME process. Working at the cutting-edge facilities of the Medway Food Innovation Centre (MFIC; https://mfic.gre.ac.uk) and supported by the $30m Bezos Centre for Sustainable Protein (led by Imperial College), the candidate will get direct hands-on exposure to run Thermo Fisher twin-screw extruder and training to use other industry-grade analytical equipment. This project would offer the selected candidate developing industry relevant skills to optimise HME process and learn various analytical methods to characterise quality attributes of food products. Research objectives (include but not limited to): • Characterize Feed Materials: Evaluate the functional properties of plant protein feed sources by assessing particle size analysis, measuring protein solubility, surface hydrophobicity etc. • Process Optimisation: Optimise HME parameters (moisture content, pH, melt temperature, screw speed, etc.) for selected plant protein blends to generate optimal texture and sensory. Design of Experiments (DoE) will be used. • Product Characterization: Analyse water- and oil-holding capacities, thermal behaviour, texture profile, microstructure, and rheological properties of extrudates and also employ testing methods to assess HME driven fibrous structure formation. • Sensory Evaluation: Assess taste and aroma profiles of extruded materials.		

	The project will generate 3*/4* publications and provide the student networking opportunity with various UK hubs involved in alternative protein research and gain transferable skills to help with future employment opportunity in this emerging area.
Duration:	3 years, Full-Time Study

Bursary available (subject to satisfactory performance):

Year 1: £20,780 (FT) or pro-rata (PT) Year 2: In line with UKRI rate Year 3: In line with UKRI rate

In addition, the successful candidate will receive a contribution to cover the tuition fees equivalent to the university's **home rate (UK)**, currently £5,006 (FT) or pro-rata (PT), for the duration of their scholarship. **International applicants** will need to pay the remainder of tuition fee for the duration of their scholarship.

This fee is subject to an annual increase.

Full bursary is available via funding from Bezos Centre for Sustainable Protein (PID B0737)

Person Specification of Essential (E) or Desirable (D) requirements:

Criteria:	**E or D**
Education and Training:	
• 1st or 2nd class, First Division (Upper Second Class) honours degree or a taught master's degree with a minimum average of 60% in all areas of assessment (UK or UK equivalent) in a relevant area to the proposed research project	**E**
• For those whose first language is not English and/or if from a country where English is not the majority spoken language (as recognised by the UKBA), a language proficiency score of at least IELTS 6.5 (in all elements of the test) or an equivalent UK VISA and Immigration secure English Language Test is required, if your programme falls within the faculty of Engineering and Science a language proficiency score of at least IELTS 6.5 overall with a minimum of 6.0 in all elements of the test or an equivalent UK VISA and Immigration secure English Language Test is required. Unless the degree above was taught in English **and** obtained in a majority English speaking country, e.g. UK, USA, Australia, New Zealand, etc, as recognised by the UKBA.	**E**
Experience & Skills:	
• Previous hands-on experience of undertaking laboratory research (e.g. laboratory-based master's dissertation).	**E**
• Master's degree (MSc) in Food Science, Food Engineering, Chemical Engineering, Biosystems Engineering, or a closely related discipline.	**E**
• Experience with laboratory techniques and equipment for food processing and analysis (e.g., food product development, texture analysis, rheology, spectroscopy, microscopy, etc.).	**E**
• Strong understanding of food quality characteristics, protein chemistry, analytical methods, and data analysis.	**D**

• Familiarity with alternative protein sources (e.g., plant-based, algae, microbial, insect, or precision-fermented proteins).	**D**
• Publication Record: Co-authored publications at reputable journals, and posters, or conference presentations.	**D**
• Experience working with or within the food industry, particularly in R&D or product development roles.	**D**
Personal Attributes:	
• Good attention to details, personal discipline and motivation	**E**
• Able to, under guidance, complete independent work successfully	**E**
• Ability to work collaboratively in multidisciplinary teams.	**E**
• Strong interpersonal skills and ability to work effectively as part of a research team.	**D**
Other Requirements:	
• Please note that this is a laboratory-based position. The successful candidate is expected to work primarily at the Medway Food Innovation Centre laboratories and should therefore be prepared to either commute daily to the Medway Campus or relocate to the Medway area.	**E**
• This scholarship may require Academic Technology Approval Scheme approval for the successful candidate if from outside of the EU/EEA	**E**
Closing date for applications:	***midnight UTC on 29/08/2025***
For further information contact:	**v.baeghbali@greenwich.ac.uk**

Making an application:

Please read this information before making an application. Information on the application process is available at: https://www.gre.ac.uk/research/study/apply/application-process. Applications need to be made online via this link. **No other form of application will be considered**.

All applications **must include** the following information. **Applications not containing these documents will not be considered.**

- **Scholarship Reference Number (Bezos-NRI-01-25)**– included in the personal statement section together with your personal statement as to why you are applying
- **a CV including 2 referees** *
- **academic qualification certificates/transcripts and IELTs/English Language certificate if you are an international applicant or if English is not your first language or you are from a country where English is not the majority spoken language as defined by the UK Border Agency** *

**upload to the qualification section of the application form. Attachments must be a PDF format.*

Before submitting your application, you are encouraged to liaise with the Lead Supervisor on the details above.