**FoodBioSystems DTP - PhD Project Advertisement Text**

**Project Title**: FOODBIOSYSTEMS - Developing a new energy efficient technology for dewatering of food materials

**Lead Supervisor:** Dr Valentina Stojceska - Brunel University London (BUL), College of Engineering, Design and Physical Sciences, RCUK Centre for Sustainable Energy Use in Food Chains
**Email:** valentina.stojceska@brunel.ac.uk

**Co-Supervisors:**
Dr Afroditi Chatzifragkou - University of Reading (UoR), Department of Food and Nutritional Sciences
Prof Savvas Tassou - Brunel University London, Institute of Energy Futures, RCUK Centre for Sustainable Energy Use in Food Chains

**Research Group**: FOODBIOSYSTEMS BBSRC DTP
**Project ID:** FBS2020-60

**Application Deadline**: 6 March 2020

**Project Description:** The food and beverage industry is the second highest energy-consuming sector in the UK that has experienced only modest reductions in energy usage over recent decades. Some progress has been made in the reduction of energy consumption and emissions from the food chain in response to government initiatives and legislation and the desire of many companies to improve social and environmental performance. It has been achieved primarily through the application of well-proven energy conservation technologies and activities that could lead to quick return on investment. However, much more radical solutions are needed to reduce further energy demand in the food sector and mitigate the related climate change impacts. Energy can be saved at the processing plant level by optimizing and integrating processes and systems to reduce energy intensity, which includes more efficient processes such as drying, minimization of waste through energy recovery and better use of by-products.

This 4-year PhD studentship involves development of novel drying process and food products/ ingredients that could be used in the food supply chain to improve overall sustainability and circular economy. The project involves: (i) Design and construction of laboratory drying cell; (ii) Screening and characterization of different food materials; (iii) Assessment of drying processing on targeted food materials; (iv) Analysis and interpretation of laboratory results (physical and chemical properties) & (v) Assessment of environmental impact of a newly developed technology.

You will have an opportunity to work between BUL and UoR and take part in the multidisciplinary research area at the CSEF at BUL. CSEF has established a unique cross-disciplinary hub of engineers, scientists and industry experts to develop energy-efficient food manufacturing, distribution and retail systems to support companies achieve their short, mid and long term CO2 emissions reduction targets.

**Funding Notes:** This project is part of the FoodBioSystems BBSRC Doctoral Training Partnership (DTP), it will be funded subject to a competition to identify the strongest applicants. Due to restrictions on the funding, this studentship is only open to UK students and EU students who have lived in the UK for the past three years.

The FoodBioSystems DTP is a collaboration between the University of Reading, Cranfield University, Queen's University Belfast, Aberystwyth University, Surrey University and Brunel University London. Our vision is to develop the next generation of highly skilled UK Agri-Food bioscientists with expertise spanning the entire food value chain. We have over 60 Associate and Affiliate partners. To find out more about us and the training programme we offer all our postgraduate researchers please visit https://research.reading.ac.uk/foodbiosystems/.

**Training opportunities:** Both Universities will provide training, technical and academic support.
You will have an opportunity to work in a multidisciplinary research area that involves food engineering, food science and environmental sustainability. You will develop transferable skills with engaging with the food industry interested in developing this technology and potentially work on their food materials and waste.

**Student profile:** The successful candidate will possess minimum 2:1 Honours degree in Food Science/ Engineering/Technology, Chemical or Process Engineering or equivalent qualification(s). Degree in MPhIl, MEng, MSc or relevant industrial experience would be an advantage.