

Development of integrated sustainable processes for food waste valorisation

Lead Supervisor: Dr Afroditi Chatzifragkou, University of Reading, Department of Food and Nutritional Sciences
Email: a.chatzifragkou@reading.ac.uk

Co-Supervisors: Dr Valentina Stojceska (Brunel University London), Prof Savvas Tassou (Brunel University London), Alistair House (A & R House (BCL) Limited)

Project Description: Post-farm-gate food chain is responsible for around 15 Mt of food waste, which accounts for more than 20 MtCO_{2e} emissions. Around half of the food waste (6.5 Mt) is avoidable and derives from activities within the UK Supply Chain, with nearly 4.0 Mt of food waste deriving directly from the manufacturing stage and a substantial amount of this waste goes to landfill and land spreading. We aim to tackle the challenge of sustainability in the field of food processing and waste valorisation through a CASE studentship, in partnership with A & R House (BCL) Limited and Brunel University. A & R House (BCL) Limited activities involve drying processing of food wastes, with a view to retain their antioxidant activity and re-distribute them in the food supply chain as food ingredients. Brunel University London is home to the Institute of Energy Futures which has a holistic approach to the energy costs of food distribution, bringing together researchers from a range of disciplines, as well as mainstream engineering research. The project will investigate the wet extraction of bio-active components from selected food waste feedstocks and the optimisation of drying processing of the subsequent solid residues, that will lead into fibre-rich ingredients, applicable in food formulations. You will be working together with a supervisory team (University of Reading and Brunel University London) that brings together unique expertise in food waste valorisation, food processing and environmental sustainability, which are put into context within a commercial setting through our non-academic partner, A & R House (BCL) Limited. The successful implementation of the project will lead into the development of processes that result in complete utilisation of fruit waste streams, with minimum environmental impact and the generation of ingredients and compounds that can be re-introduced into the food supply chain.