

UCC

**Research Masters/Ph.D – 2yr duration (M.Sc), 4yr Ph.D**

(If students meet the academic standard after two years then the M.Sc can be upgraded to a Ph.d on completion of two further years of research)

**Novel Clean label Strategies for the Nutritional and Sensory Optimisation of Reduced Salt and Fat Processed Meat Products**

**Background**

NATRIOPT optimises processed meats through the reduction and or replacement of salt and fat using novel ingredients as replacers (eg. edible seaweeds). Potential therapeutic benefits of seaweed consumption have been reported in the management of body weight, obesity and cardiovascular diseases thus offsetting negative effects of salt and fat. There is also considerable evidence that heterogeneity of distribution of salt content (eg, two batters with different salt contents unevenly mixed or encapsulation) in processed products enhances sensory perception of salt flavour intensity. Additionally inclusions of aromas that suggest saltiness and fat/creaminess can offset the sensory disadvantages of salt- and fat-reduced products and is termed Odour-induced saltiness enhancement (OISE). These will be explored along with the effects of matrix changes on flavour chemistry systems utilising advanced GC (Gas Chromatography) techniques. Salt and fat reduction has a major impact on flavour perception due to changes in the ratios of polar and non-polar flavour molecules. To date this has not been comprehensively undertaken and adds a unique dimension to the proposed project. This data, captured from state of the art GC techniques as well as sensory and consumer data will be mined using chemometrics. Thus this deep understanding of the inherent flavour chemistry systems involved in salt and fat reduction/replacement combined with affective (hedonic) sensory data will allow for the development of optimised products from both a nutritional and sensory perspective. To date UCC (University College Cork) and Teagasc Ashtown have obtained very extensive experience in nutritionally optimising processed meats (PROSSLOW, MEATMATRIX) and are uniquely aligned in progressing the state of the art in this field. This is very timely considering recent negative scientific reports and media attention concerning processed meats. By building on existing knowledge and utilising novel natural replacers, products which are more appealing to consumers can be developed.

Ideally the candidate should have some familiarity with sensory analyis, gas chromatography mass spectrometry, compositional and statistical analysis. Expertise already exists in these key disciplines within the institutes involved and training will be provided as necessary.

**Requirements**

All available postgraduate positions are solely research based. M.Sc positions are two years in duration and all candidates must hold a 2.1 honours equivalent or higher in the areas of; food science, nutrition, material sciences, food or process engineering, chemistry or biological-based sciences. Candidates holding a 2.2 honours degree may be considered for M.Sc positions but should also possess some relevant work or industrial experience. If students meet the academic standard after two years then the M.Sc can be upgraded to a Ph.d on completion of two further years of research

**Award**

This is a joint research project between the Food Packaging Group Department of Food Science and Nutrition, University College Cork Department and Food Biosciences, Teagasc Food Research Centre, Moorepark. The project is part of the Department of Agriculture and Food's Food Institutional Research Measure (FIRM).

The student will be based at both the Food Packaging Group in University College Cork and Teagasc Food Research Centre Moorepark, Fermoy, Co. Cork. The student will be registered at University College Cork under the supervision of Dr Maurice O’Sullivan and Prof. Joseph Kerry in association with the Teagasc supervisor, Dr Kieran Kilcawley.

The postgraduate employed will be paid €22,000 per annum, out of which college fees must be paid. The stipend is subject to satisfactory output of scientific results and publications and is tenable for 2 years for this project.

**Further Information/Applications**

Please send CV’s and cover letter to Dr Maurice O’Sullivan, Packaging Group, School of Food and Nutritional Science, University College Cork, Co. Cork, Republic of Ireland  
email: [maurice.osullivan@ucc.ie](mailto:maurice.osullivan@ucc.ie)

**Applications should state final grade scores in third level degrees and proven competency in English language where relevant.**

**Closing Date for Applications 5:00pm, 1st September 2017.**