JOB DESCRIPTION

Job Title: Post-doctoral Research Fellow in Food Rheology and Texture analysis

Grade: AC1

Department: Food & Markets, Natural Resources Institute

Responsible to: Dr Parag Acharya

Responsible for:

- Delivering NRI owned KPIs for projects (linked to PID B0737) related to food rheology and texture analysis of alternative protein/meat and dairy alternatives
- Overall management of MFIC, in particular the operation and maintenance of texture analyser (e.g. TA.XTPlusC) and advanced rheometer (e.g. DHR20) like ordering consumables overseeing installation etc. when required
- Retaining and growing food rheology expertise at MFIC and support relevant food innovation projects
- Co-leading the cutting edge research on alternative protein which are linked to the texture and rheological analysis, deliver enterprise/corporate projects, and involve in (student) training.
- Maintaining and implementing NRI's QMS procedures and laboratory work instructions for MFIC.

Key Contacts:

- Head, Medway Food Innovation Centre
- Head of Food & Markets Department
- Director, NRI

Standard Occupational Classification (SoC code): N/A

Non-Contractual Nature of Role Profile: This role profile is non-contractual and provided for guidance. It will be updated and amended from time to time in accordance with the changing needs of the University and the requirements of the job.

PURPOSE OF ROLE

The Natural Resources Institute (NRI) of the University of Greenwich is part of the $30M Bezos Centre for Sustainable Protein (BCSP), funded by Bezos Earth Foundation (PID B0737). As part of BCSF, led by Imperial College, London, there is a PDRA opportunity to work at the Medway Food Innovation Centre (MFIC) for 2 years project (with potential opportunity to extend) to develop key scientific insights on the rheological and texture properties of alternative protein-based products. By 2050, the world will need to produce twice as much protein as it does today to feed its population and meeting

this demand through the emission intensive animal agriculture would jeopardise the climate issue. Thus, BCSP brings together top academic researchers, industrial partners and policy makers across the UK, Europe, and USA to drive food innovation leveraging animal alternative protein sources like plant/algae/microbes etc. Inferior taste and texture including mouthfeel are some of the biggest challenges for plant-based meat and dairy alternatives in the marker which pose a critical quality gap compared to the conventional meat and dairy. This is considered as the main reason for consumer dissatisfaction with foods made with alternative sustainable proteins. It is therefore essential to understand how different alternative protein varieties and processing methods affect the texture and mouthfeel properties of products like meat analogues and dairy alternatives. Such understanding of the texture attributes should provide key insights how to improve the palatability of these novel products. Leveraging state-of-the-art texture analysis and rheology facility, MFIC will drive transformative research and help industry with key alternative protein technology unlock for such new product development.

The University of Greenwich has set up the MFIC which aims to deliver step-changing research on alternative protein, provide R&D solutions for food industries via enterprise support as well as conduct excellent training and courses on novel food product and process technologies. MFIC is equipped with the advanced texture analysis platform consists of Stable Micro TA.XTPlusC Texture Analyser with necessary accessories suitable for analysing meat and dairy alternatives. This will be supplemented with advanced DHR 20 Rheometer with Tribology accessories. These will be extensively used by the selected candidate under the direct supervision of a faculty expert to assess the texture and rheological properties of meat and dairy alternatives. With support from the MFIC team as well as Food Processing and Innovation (FPI) research group within NRI, the successful candidate will have the responsibility to deliver the agreed KPIs for BCSP. The PDRA will also ensure that TA.XTPlusC Texture Analyser and DHR 20 Rheometer are seamlessly operational, besides, work closely with the MFIC head to support developing technical solutions for texture challenges related to the new product development by food businesses involved within the Food Accelerator programme.

KEY ACCOUNTABILITIES

With support from the MFIC team within NRI, the successful candidate will be the work package lead for rheology and texture analysis to deliver relevant projects for BCSP, as well as the maintenance of the relevant equipment (DHR20 and TA.XTPlusC).

The successful candidate should have proven experience of food rheology and texture analysis (prior knowledge of rheology is essential) with at least PhD level background.

Team Specific:

- Act as a lead researcher for rheology analysis needed for projects of BCSP which includes responsibility for performing experiments, presenting results and reporting the project progress and regularly attain project meetings etc.
- Maintaining/handling/(basic) trouble shooting of TA.XTPlusC texture analyser and DHR20 Rheometer
- Operate as MFIC contact for the supplier Waters about the DHR20 Rheometer for maintenance and schedule routine check-up (e.g., equipment performance)
- Train MSc students with instrument operation and help with designing rheology and texture analysis experiments for MSc thesis projects
- Gain industrial research experience via working with the participating businesses on texture analysis and/or helping with the technical feasibility studies

Generic:

- Provide food rheology research support to develop bid for external grant applications
- Ensure routine procedures are performed for DHR20 and TA.XTPlusC according to schedule, e.g. calibration and monitoring etc.
- Contribute to departmental plans, activities, and efficient working practices
- Assist in achieving the research KPIs of the MFIC and Natural Resources Institute
- Demonstrate a commitment to equality, diversity and inclusion
- Contribute to the flavour analysis CPD development activities

Managing Self:

- Well-developed communication and presentation skills
- Successful research skills with a high level of competency using equipment
- Maintain own continuous professional development (CPD)
- Able to prioritise individual and project workloads and meet competing deadlines
- A methodical approach to tasks with attention to detail and ability to analyse problems
- Behave in a manner which reflects the University values and creates a positive environment for work and study

Core Requirements:

- Adhere to and promote the University's policies on Equality, Diversity and Inclusion and Information Security.
- Ensure compliance with Health & Safety and Data Protection Legislation.
- Support and promote the university's Sustainability policies, including the Carbon Management Plan, and carry out duties in a resource

efficient way, recognising the shared responsibility of minimising the university's negative environmental impacts wherever possible.
- Adhere to current legal requirements and best practice relating to digital content and accessibility, including Web Content Accessibility Guidelines when creating digital content.

Additional Requirements:
Undertake any other duties as requested by the line manager or appropriate senior manager, commensurate with the grade.

This is a professional, demanding role within a complex organisation with an ambitious strategic plan and agenda for change. The role holder will be expected to show flexibility in working arrangements, including working hours, to ensure that *Medway Food Innovation Centre* delivers the required level of service.

KEY PERFORMANCE INDICATORS:
- Produce and deliver work and set tasks to agreed timescales
- Demonstrate technical Knowledge in the field of food rheology and texture analysis
- Contribute to team effectiveness and wellbeing
- Comply with corporate standards

KEY RELATIONSHIPS (Internal & External):
Internal
- MFIC Head
- Head, Food and Markets Department
- NRI academic and support staff
- Faculty and University wide collaborations

External
- Project partners and collaborators within BCSP
- Private sector actors including food accelerator companies
- Relevant professional bodies in the field.

PERSON SPECIFICATION

EXPERIENCE:

Essential Criteria

- Knowledge and experience in food rheology and texture analysis
- Technical and operational capability of Rheometer and Texture analyser
- Demonstrated capability in rheological data analysis for food products
- Knowledge about rheology and texture analysis for alternative protein
- Perform food rheology research and preferably some exposure to industry collaboration
- Evidence of teamwork to deliver high quality analytical outputs against strict targets

Desirable Criteria

- Direct experience in handling and independently operating advanced rheometer (e.g. DHR20)
- Demonstrated capability in the data analysis for rheology experiments
- Experience in setting up texture profiling and related data analysis
- Some industrial experience
- Demonstrated contribution in publications and report writing
- Support postgraduate teaching programmes and experience in providing training on rheometer

SKILLS:

Essential Criteria

- Proven ability to operate rheometer and texture analyser
- Strong background in food rheology including data analysis
- Proven ability to work with texture profile analysis
- Proven ability to manage own workload
- Excellent oral and written communication skills and computer literacy e.g. MS Office

Desirable Criteria

- Experience of working with advanced rheometer (particularly operational knowledge of DHR20)
- Experience of the maintenance of texture analyser (e.g. TA.XTPlusC)
- Experience of maintaining research facilities to a required standard
- Experience of industry collaboration in food rheology

QUALIFICATIONS:

Essential Criteria

- PhD in food rheology or closely related field(s)

Desirable Criteria

N/A

PERSONAL ATTRIBUTES:

Essential Criteria

- We are looking for people who can help us deliver the values of the University of Greenwich: Inclusive, Collaborative and Impactful.

Desirable Criteria

N/A