UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Milk Fat Crystallisation, School of Food Science and Nutrition

Salary: Grade 7 (£33,199 – £39,609 p.a.) Due to external funding restrictions, appointments will not be made above £35,211 p.a.

Reference: MAPFS1090

Closing date: 08 August 2019

Fixed-term for 12 months commencing 1 September 2019

We will consider job share / flexible working arrangements

Research Fellow in Milk Fat Crystallisation
School of Food Science and Nutrition,
Faculty of Mathematics and Physical Sciences

Are you an ambitious researcher looking for your next challenge? Do you have an established background in crystallisation and/or colloid science? Do you want to further your career in one of the UKs leading research-intensive Universities?

We are looking for a candidate with crystallisation and/or colloid science background for a postdoctoral research position in “Acoustic control of milk fat crystallisation” sponsored by Arla Foods . You will investigate the potential of controlling milk fat nucleation and growth by application of acoustics or ultrasound at a level below cavitation induction.

Milk fat crystallisation can either take place in bulk (i.e. a continuous lipid phase) or in emulsion droplets (e.g. milk fat globules). In either case, the amount, size and shape of the resulting fat crystals have immense impact on the properties of the resulting dairy products. Therefore, the objective of the project will be to establish a proof of principle on application of acoustic/ultrasound on either type of food matrix (bulk and emulsion). The structure and functionality of the crystalline materials produced will be investigated by suitable analytical techniques available at either University of Leeds (Bragg Centre of Materials Characterisation) or – if relevant – at Arla Innovation Centre, Aarhus, Denmark.

Working under the supervision of Dr Elena Simone and Professor Megan Povey, you will join the Food Crystal Engineering and Food Physics groups and contribute to leading research in the areas of food colloids processing and characterization as well as food crystallization.

With a PhD in Physics, Chemistry, Maths, Food Science or Engineering, you will have a strong background in crystallisation, acoustic and/or colloid science/soft matter and experience in standard characterization techniques for crystalline materials.



What does the role entail?

As a Research Fellow, your main duties will include:

- Conducting research on milk fat crystallisation under acoustic/ultrasound fields by:
    - Preparing model concentrated colloidal systems with controlled structure;
    - Designing appropriate crystallisation experiments for the study of milk fat nucleation and growth mechanisms;
    - Using ultrasound spectroscopic techniques for the characterisation of concentrated colloidal systems and other complex media;
    - Using light scattering, microscopy and X-ray diffraction for the determination of the structure and properties of concentrated colloidal systems;
- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Developing research objectives and proposals and contributing to setting the direction of the research project and team including preparing proposals for funding in collaboration with colleagues;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own work;
- Preparing papers for publication in leading international journals and disseminating research results through other recognised forms of output;
- Working both independently and also as part of a larger team of researchers, engaging in knowledge-transfer activities where appropriate and feasible;
- Maintaining your own continuing professional development and acting as a mentor to less experienced colleagues as appropriate;
- Contributing to the training of both undergraduate and postgraduate students, including assisting with the supervision of projects in areas relevant to the project.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.



What will you bring to the role?

As a Research Fellow you will have:

- A PhD in Physics, Chemistry, Maths, Food Science or Engineering;
- A strong background in crystallisation, acoustic and/or colloid science/soft matter;
- Experience in standard characterization techniques for crystalline materials (e.g., light diffraction/scattering, X-ray diffraction, differential scanning calorimetry, electron microscopy);
- Good time management and planning skills, with the ability to meet tight deadlines, manage competing demands and work effectively under pressure without close support;
- A proven track record of peer-reviewed publications in high impact factor journals;
- Excellent written and verbal communication skills including presentation skills;
- A proven ability to work well both individually and in a team;
- A strong commitment to your own continuous professional development.

You may also have:

- Experience of pursuing external funding to support research;
- Knowledge of acoustic/ultrasound theory for material characterisation.

How to apply

You can apply for this role online; more guidance can be found on our How to Apply information page. Applications should be submitted by **23.59** (UK time) on the advertised closing date.

Contact information

To explore the post further or for any queries you may have, please contact:

Dr Elena Simone, Lecturer in Food Crystal Engineering
Tel: +44 (0)113 343 2748
Email: E.Simone@leeds.ac.uk



Additional information

A diverse workforce
The Faculty of Mathematics and Physical Sciences is proud to have been awarded the Athena SWAN Bronze Award from the Equality Challenge Unit, the national body that promotes equality in the higher education sector. Our equality and inclusion webpage provides more information.

Working at Leeds
Find out more about the benefits of working at the University and what it is like to live and work in the Leeds area on our Working at Leeds information page.

Candidates with disabilities
Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our Accessibility information page or by getting in touch with us at disclosure@leeds.ac.uk.

Criminal record information

Rehabilitation of Offenders Act 1974
A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our Criminal Records information.