



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Automated and Continuous Production of Nanomaterials, Faculty of Engineering & Physical Sciences



Salary: Grade 7 (£33,797– £40,322 p.a.)

Reference: EPSPE1016

Closing date: 02 August 2020

Fixed-term for 36 months

We will consider flexible working arrangements

Research Fellow in Automated and Continuous Production of Nanomaterials

Faculty of Engineering & Physical Sciences

Are you an ambitious researcher looking for your next challenge? Do you have an established background in reaction engineering, flow chemistry, control system engineering and nanoparticle synthesis? Do you want to further your career in one of the UKs leading research intensive Universities? Do you want to be part of an EU funded international innovation programme?

You will form a critical part of the Leeds team which are leading this ambitious and exciting international project [SABYDOMA](#).

You will develop a micro-meso-fluidic system for nanoparticle synthesis and couple it with an automated control system also developed in this project by another Research Fellow, to automatically optimize nanoparticle quality in real-time based on the detected quality of the particles being produced. This is an Innovation project and during the project lifetime, the developed technology will be transferred to several partner companies.

You will have a PhD (or close to completion) in chemical reaction engineering or a closely allied discipline, with a strong background in micro-meso-fluidic system design and experience in nanoparticle synthesis and characterisation, and flow chemistry and continuous processing.

What does the role entail?

As a Research Fellow, your main duties will include:

- Developing a micro-meso-fluidic system for the continuous production of nanomaterials (NMs), e.g. metals NMs and metal oxide NMs;
- Optimising the flow-based reactor system based on computational and experimental fluid dynamics and reaction kinetics;
- Enabling high-throughput synthesis and online and offline characterisation of NMs;
- 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 (or close to completion) in chemical reaction engineering or a closely allied discipline;
- A strong background in micro-meso-fluidic system design;
- Familiarity with programming languages (e.g. MATLAB, Python, LABVIEW);
- Definite experience in nanoparticle synthesis and characterisation;
- Experience in flow chemistry and continuous processing;
- A proven track record of peer-reviewed publications related to this project in high impact factor journals;
- Good time management and planning skills, with the ability to meet tight deadlines and work effectively under pressure;
- Excellent written and verbal communication skills including presentation skills;
- Proven ability to manage competing demands effectively, responsibly and without close support;
- 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;
- Experience of modelling reaction and transport processes (mass and heat transfer, mixing, computational fluid dynamics, multiphase flows);
- Good communication skills with industrial partners;

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:

[Kejun Wu](#), School of Chemical and Process Engineering

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Additional information

Faculty and School Information

Further information is available on the research and teaching activities of the [Faculty of Engineering & Physical Sciences](#), and the [School of Chemical and Process Engineering](#).



A diverse workforce

The Schools in the Faculty of Engineering & Physical Sciences are proud to have been awarded the Athena SWAN [Bronze or Silver](#) 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 page.

