UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Process Chemistry,

Faculty of Engineering and Physical Sciences

Salary: Grade 7 (£37,099 – £44,263 p.a.)

Reference: EPSCH1105

Location: Institute of Process Research and Development (with limited scope for hybrid working)

Closing date: Wednesday 08 May 2024

Fixed term for up to 17 months, to end by 31 October 2025

We are open to discussing flexible working arrangements

Research Fellow in Process Chemistry,
School of Chemistry,
Institute of Process Research and Development (iPRD).

Are you a creative process chemist looking for your next challenge? Does developing interdisciplinary solutions to poor air quality, a problem affecting the health of thousands of people, motivate you? Do you want to develop your networks both in one of the UK's leading research-intensive institutions and with industrial partners?

You will join our team from the Schools of Chemistry, and Chemical and Process Engineering, working to develop LowCat, a new catalyst for NO_x emissions mitigation. You will support a late-stage commercialisation project funded by the Science and Technology Facilities Council. The project builds on existing work demonstrating the effectiveness of LowCat for exhaust emissions mitigation and initial scale up of manufacture to the kg scale. The team at University of Leeds are working with partners from University College London, the ISIS Neutron facility and MinChem limited to deliver a scalable process for manufacture of an optimised catalyst to a range of target markets.

You will work closely with process chemistry experts in the Institute of Process Research and Development and at MinChem limited, as well as academic project collaborators, and will lead on the development of a continuous flow process for production of a consistent, optimised product. You will design and construct a novel continuous flow process with reaction monitoring, product separation and purification. You will test catalyst activity, lifetime and consistency using a gas / heterogeneous reactivity apparatus. In addition, you will seek opportunities to publish work, contribute to intellectual property protection and assist in commercialisation activities. This offers the opportunity to develop wider research skills and networks which could support career development either in academia or industry.

Working in the Institute of Process Research and Development (iPRD) you will join a vibrant, growing and widely recognised Institute of around 40 academics, PhD students and post-doctoral researchers, with a strong focus on collaborative working with industry to develop more efficient and sustainable processes.


Holding a PhD (or have submitted your thesis before taking up the role) in Chemistry or Chemical Process Engineering or a closely allied discipline; you will have excellent communication skills and the ability to work under pressure to meet deadlines.

What does the role entail?

As a Research Fellow, your main duties will include:

- Designing, planning and conducting a programme of investigation, in consultation with Professor John Blacker and Drs Mary Bayana and Alexander James;
- Designing a scalable continuous flow process for the manufacture of the LowCat material and developing techniques to monitor the extent of reaction, optimisation of conditions and consistency of product;
- Consulting and teamworking on the process and product performance with other academic project collaborators and representatives of MinChem Ltd;
- Optimising the process and product in terms of catalyst activity, lifetime, consistency and any other appropriate metric decided by the project team;
- Identifying opportunities to publish work and to assist in the writing of papers;
- 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 research;
- Preparing papers for publication in leading international journals and disseminating research results through other recognised forms of output;
- Making a significant contribution to the dissemination of research results by publication in leading peer-reviewed journals and by presentation at national and international meetings;
- Working independently and as part of a larger team of researchers, both internally and externally, to develop new research links and collaborations and engage in knowledge transfer activities where appropriate;
- 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 have submitted your thesis before taking up the role) in Chemistry or Chemical Process Engineering or a closely allied discipline;
- A strong background in continuous flow processes or process scaleup;
- Excellent laboratory and practical skills with experience in developing reactions and separations;
- Experience in analytical techniques for monitoring reactions and products;
- The ability to problem solve and respond to emergent tasks toward project goals;
- Good time management and planning skills, with the ability to meet tight deadlines and manage competing demands effectively without close support;
- A developing track record of peer reviewed publications in international journals;
- Excellent communication skills both written and verbal, and the ability to communicate your research at national and international conferences;
- 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 working in industry or with industrial partners;
- Experience of commercialisation of academic research or products.

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 Alexander James, Research Fellow
Tel: +44 (0)113 343 8078
Email: A.James1@leeds.ac.uk

Additional information

Please note: If you are not a British or Irish citizen, you will require permission to work in the UK. This will normally be in the form of a visa but, if you are an EEA/Swiss citizen and resident in the UK before 31 December 2020, this may be your passport or status under the EU Settlement Scheme.

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 and the School of Chemistry.

A diverse workforce
As an international research-intensive university, we welcome students and staff from all walks of life and from across the world. We foster an inclusive environment where all can flourish and prosper, and we are proud of our strong commitment to student education. Within the Faculty of Engineering and Physical Sciences we are dedicated to diversifying our community and we welcome the unique contributions that individuals can bring, and particularly encourage applications from, but not limited to Black, Asian and ethnically diverse people; people who identify as LGBT+; and people with disabilities. Candidates will always be selected based on merit and ability.

The Faculty of Engineering and Physical Sciences are proud to have been awarded the Athena SWAN 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
We are a campus based community and regular interaction with campus is an expectation of all roles in line with academic and service needs and the requirements of the role. We are also open to discussing flexible working arrangements. To find out more about the benefits of working at the University and what it is like to live and work in the Leeds area visit our Working at Leeds information page.

Information for disabled candidates
Information for disabled candidates, impairments or health conditions, including requesting alternative formats, can be found on our Accessibility information page or by getting in touch with us at hr@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.