



UNIVERSITY OF LEEDS

## CANDIDATE BRIEF

**Research Fellow in Valorisation of Fermentation residues by Hydrothermal Carbonisation, Faculty of Engineering and Physical Sciences**



**Salary: Grade 7 (£37,099 – £44,263 p.a.) Due to funding restrictions, an appointment will not be made higher than £39,347 p.a.**

**Reference: EPSPE1102**

**Location: Leeds campus**

**Closing date: Monday 06 May 2024**

**Fixed-term for up to 12 months, available from 01 May 2024**

**We are open to discussing flexible working arrangements**

# Research Fellow in Valorisation of Fermentation residues by Hydrothermal Carbonisation, School of Chemical and Process Engineering.

Are you an experienced and ambitious researcher looking for your next challenge? Do you have a research background in hydrothermal carbonisation, process engineering, adsorbent characterisation and adsorption, and wish to contribute to the development of novel advanced carbon materials production? Do you want to further your career in one of the UK's leading research-intensive universities?

This is a unique opportunity to join the exciting UK academic/industry collaborative project **FermoChar** (Fermentation residue into engineered char-based materials for sustainable industrial applications; A pathway to NetZero), funded by the UK's Innovation Funding (Innovate UK).

This project brings together a multidisciplinary team of expert researchers in process engineering, biotechnology, adsorbent characterisation within the School of Chemical and Process Engineering, University of Leeds, Teesside University, and associated industrial partners working in the fermentation sector.

You will contribute to the production and characterisation of carbonaceous adsorbents from hydrothermal carbonisation of fermentation residues. The overall project aim is to develop methodologies for the valorisation of fermentation residues from different biotechnology processes. The appointed researcher will specifically focus on. i) the production of novel bespoke adsorbents, (ii) modification of adsorbents, (iii) experimental screening of different activation approaches, (iv) the production of materials for adsorption testing and (v) process optimisation and design.

## What does the role entail?

As a Research Fellow, your main duties will include:

- Performing laboratory scale hydrothermal carbonisation tests of fermentation residues to produce carbonaceous materials;
- Experimental screening of different activation approaches and surface modification of hydrochars;



- Characterisation of hydrochar products and different process streams, and undertaking assessment of suitability towards different applications;
- Designing methodology for optimising adsorbent properties;
- Liaising with the Leeds supervisory team, Teeside University and external partners to ensure effective collaboration and exchange of data;
- Taking a careful and responsible approach to health and safety within the laboratory including carrying out relevant updates to risk assessments;
- Preparing data for presentation at meetings and reporting on progress;
- 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 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 have submitted your thesis before taking up the role) in a chemical engineering or applied science topic related to hydrothermal carbonisation;
- Experience in the operation of laboratory scale high temperature and high pressure batch;
- Experience of characterisation techniques for the analysis of carbonaceous adsorbents;
- Experience in using Response Surface Methodologies for design of experiments;
- Experience in working with biological residues;
- An understanding of the health and safety risks associated with operation of hydrothermal reactors and the ability to liaise with the supervision team in the preparation of risks assessments and minimising hazards in the laboratory situation;
- 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 independently 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.

## 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 Andrew Ross](#)**, Associate Professor in Energy and Resource Recovery

Email: [A.B.Ross@leeds.ac.uk](mailto:A.B.Ross@leeds.ac.uk)

## 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

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](mailto: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.

