



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow or Research Assistant in Hydrogen Utilisation for Domestic Heat, Faculty of Engineering



Grade 6 (£27,025 – £32,236p.a.) or Grade 7 (£33,199 – £39,609) pro rata

Please note that due to funding limitations appointments will not be made above £35,211 p.a. pro rata.

Reference: ENGPE1170

Closing date: 31 August 2019

Part time, 50% full time equivalent

Fixed-term for up to 12 months, available from 1 Oct 2019

Research Fellow or Assistant in Hydrogen Utilisation for Domestic Heat

School of Chemical and Process Engineering

Are you an experienced and ambitious researcher looking to work in the low carbon energy area? Do you have a research background in combustion and wish to contribute to the development of low carbon heat technologies for the domestic market? Do you want to further your career in one of the UK's leading research intensive universities?

This is a unique opportunity to join an exciting UK wide project “**Hy4Heat**” funded by the UK Department for Business, Energy & Industrial Strategy (BEIS) <https://www.hy4heat.info/> that seeks to develop technologies for the safe and efficient utilisation of hydrogen as a replacement for natural gas in the domestic heating sector. In particular the University of Leeds, in collaboration with industrial partners, are developing three innovative designs for domestic fires that will operate on hydrogen in order to facilitate a smooth transition to a low carbon domestic heat strategy.

This project brings together a team of expert researchers in combustion, materials and textiles technologies: University of Leeds (School of Chemical and Process Engineering and School of Design); Industrial partners: Clean Burner Systems, Birmingham Burners, Focal Point Fires and Legend Fires, as well as project managers ARUP and BEIS.

What does the role entail?

As a Research Assistant at Grade 6 your main duties will include:

- Numerical simulations of temperature and pollutant profiles for different burner designs using a computational fluid dynamics approach;
- Commissioning three different test fires with open fronted, closed fronted and innovative design specifications in collaboration with industrial partners;
- Assisting in the commissioning of new emissions monitoring equipment for nitrogen oxides and particulates as part of the project;
- Combustion and emission performance testing for the three fire designs using selected burner designs;



- Liaising with the Leeds supervisory team, industrial partners and the BEIS/ARUP team during the project, and in particular with BEIS during demonstration visits;
- Taking a careful and responsible approach to health and safety within the laboratory including carrying out relevant updates to risk assessments;
- Communicating research results through reports and publications or 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.

In addition as a Research Fellow at Grade 7 you will:

- Contribute to the design of domestic burners suitable for operation using hydrogen that match, or better the efficiency and pollutant emissions of current domestic fires;
- Act as a mentor to less experienced colleagues as appropriate;
- Contribute 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 Assistant at Grade 6 you will have:

- An Undergraduate or Master's degree in mechanical, or chemical engineering or a relevant science subject;
- Demonstrable experience of research in combustion technologies including the operation of combustion devices or in the numerical simulation of combustion applications;
- Reasonable knowledge of chemical kinetics in the context of gas combustion, practical or numerical experience of combustion devices;
- An understanding of the processes of air pollutant formation in gaseous combustion systems;



- An understanding of the health and safety risks associated with practical combustor research 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 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.

In addition as a Research Fellow at Grade 7 you will have:

- A PhD (or close to completion) in a Mechanical or Chemical Engineering topic related to combustion;
- Proven experience in operating combustion devices or in the numerical simulation of combustion applications;
- Proven and demonstrable experience in performance testing and emission measurements or emissions simulations for combustion application;
- Experience in supervision of both undergraduate and postgraduate students.

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:

[Prof Alison Tomlin](#), Professor in Environmental Modelling, School of Chemical and Process Engineering (SCaPE)

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Email: A.S.Tomlin@leeds.ac.uk



[Dr Valerie Dupont](#), Reader in Low Carbon Energy (SCaPE)

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Additional information

Faculty and School Information

Further information is available on the research and teaching activities of the School of [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's 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.

