UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Experimental Gas Phase Kinetics, School of Chemistry

Salary: Grade 7 (£32,548 – £38,833 p.a.) (due to external funding restrictions at appointment will not be made above £32,548 p.a.)

Reference: MAPCH1074

Fixed term until 30 November 2020

Closing date: 1 January 2018

Research Fellow in Experimental Gas Phase Kinetics
School of Chemistry

Are you looking to apply your skills in experimental physical chemistry to a study of the role of Criegee intermediate decomposition and reaction with water vapour in atmospheric chemistry?

As a Research Fellow in Experimental Gas Phase Kinetics you will join a 3-year NERC-funded project focused on understanding the chemistry of Criegee intermdiates in the troposphere, and particularly on the role of unimolecular decomposition and reaction with water vapour. Criegee intermediates are reactive species produced in the atmospheric oxidation of unsaturated volatile organic compounds by ozone, in ozonolysis reactions. Until recently, direct experimental investigations of Criegee intermediate chemistry and kinetics has proved challenging. In this role you will use recently identified photolytic sources of Criegee intermediates to investigate the kinetics and product yields of key Criegee intermediate reactions in the troposphere, using a combination of broadband time-resolved UV absorption spectroscopy and quantum cascade laser (QCL) IR absorption spectroscopy. You will also develop UV instrumentation to enable the direct detection of Criegee intermediates in ozonolysis reactions in the Highly Instrumented Reactor for Atmospheric Chemistry (HIRAC). The resulting data will feed into models of tropospheric chemistry using the Master Chemical Mechanism (MCM) to assess the impacts on atmospheric composition.

You will have a PhD in Experimental Physical Chemistry and/or Atmospheric Chemistry, the ability to carry out complex physical chemistry experiments independently and a good background knowledge of contemporary research in laboratory studies of Atmospheric Chemistry.

What does the role entail?

As Research Fellow your main duties will include:

- Designing, planning and conducting a programme of investigation, in consultation with Dr Daniel Stone;
- Generating independent and original research ideas and methods in the investigation of the role of Criegee intermediates in atmospheric chemistry;
- 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;
- Contributing to the supervision of PhD and MChem students, and acting as a mentor to less experienced colleagues;
- Evaluating methods and techniques used and results obtained by other researchers and relating such evaluations to your own research;
- To contribute to, and to encourage, a safe working environment.

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 Research Fellow you will have:

- A PhD in Experimental Physical Chemistry and/or Atmospheric Chemistry;
- The ability to carry out complex physical chemistry experiments independently;
- A good background knowledge of contemporary research in laboratory studies of Atmospheric Chemistry;
- Ability to design, execute and write up research independently;
- 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;
- Good time management and planning skills, with the ability to meet tight deadlines;
- A proven ability to work well both independently and as part of a team;
- Ability to work accurately and carefully;
- A strong commitment to your own continuous professional development.

You may also have:

- Experience in transient UV and/or IR absorption spectroscopy;
- Practical experience in using laser flash photolysis;
- Experience of programming languages such as IDL or Python for data processing and/or LabView for instrument control;
- Experience in the chemistry of the Earth's troposphere, and in particular the role played by reactive trace species.



How to apply

You can apply for this role online; more guidance can be found on our How to Apply information. 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 Daniel Stone, University Academic Fellow
Tel: +44 (0)113 343 6508
Email: d.stone@leeds.ac.uk

Additional information

Find out more about the research of Daniel Stone.

Working at Leeds
You can find out more about our generous benefits package and more about what it is like to work at the University and live in the Leeds area in 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 in our Accessibility information 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.