Postdoctoral Research Associate
Department of Chemistry

Closing date: 30 March 2018
Interview date: 23 April 2018
Vacancy reference: 6446
Applications are invited for a Research Associate position to work with Professor James Lee and Dr James Hopkins in the Wolfson Atmospheric Chemistry Laboratories (WACL) at the University of York. The position is funded from two separate projects: A United Nations Environment Program (UNEP) project to examine fugitive methane emissions from off-shore oil and gas facilities and a NERC project, “A Two City study of Air Quality in Vietnam.”

The two distinct projects have the shared focus of quantifying the VOC content of samples collected during field projects. The first project will involve collecting and analysing whole air samples during research flights around oil and gas drilling platforms in the North Sea, UK, and assist in apportioning the source of enhanced methane. The second project will focus on Hanoi, Vietnam to identify VOC emission sources in the area and compare these to identical observations being made in Ho Chi Minh City, Vietnam as part of the same project and put these in the context of other emerging megacities.

The Department of Chemistry is one of the UK’s leading Chemistry departments and we are renowned internationally for our research. This is combined with a commitment to teaching and outstanding student satisfaction, and we have been recognised consistently for our family-friendly policies and are proud of our Athena SWAN Gold Award: https://www.york.ac.uk/chemistry/ed/

As a Department we strive to provide a working environment which allows all staff and students to contribute fully, to flourish, and to excel. We aim to ensure that there is a supportive and egalitarian culture at all levels and across all staff groups. We promote good practice and a strong culture of equality in higher education. Further information can be found within this brief and on our website: www.york.ac.uk/chemistry/
After a period of basic training in the operation of the GC-FID system, including software familiarisation, you will use the instrument to analyse air samples taken in stainless steel canisters on board an aircraft looking at emissions from North Sea oil and gas facilities. This will result in a dataset of VOCs, which will be used in conjunction with in-situ methane measurements taken from the aircraft to distinguish gas field emissions from other sources from onshore plumes and to examine emissions from individual rigs. This data will also allow an assessment of the effect of any fugitive emissions from the off-shore oil and gas sector for local and regional air quality.

During the second half of the appointment, you will set-up and operate a GC-FID instrument during a field campaign in central Hanoi, Vietnam. You will work closely with colleagues to compare data sets from different instruments and report initial findings from the field. Upon completion of the field campaign you will be responsible for ensuring that the data quality is of a high standard and submit the data to the Centre for Environmental Data Analysis (CEDA). You will analyse the data, in conjunction with that collected by co-workers and with reference to local meteorological data and air mass trajectories to determine the sources of VOCs in the region. Comparisons will then be drawn between the composition observed in Hanoi and that observed by colleagues based in Ho Chi Minh City. For both projects, you will be expected to attend project meetings and be involved in detailed discussions of the data collected to draw meaningful conclusions worthy of publication in peer reviewed journals.

Main purpose of the role

- To conduct research under the supervision of senior colleagues and to contribute to the production of research.
- Partake in field campaigns on an aircraft based in Cranfield, UK and the ground-based deployment in Hanoi, Vietnam.
- Analyse air samples for a range of VOCs using gas chromatography.
- Quality control the data produced from the field campaigns.
- Submit the data produced to the Centre for Environmental Data Analysis (CEDA).
- Better understand the interferences and uncertainties associated with the measurement of VOCs.
- To assist in the identification and development of potential areas of research and the development of proposals for independent or collaborative research projects.

Key responsibilities

(Role holders will be required to undertake some or all of the duties below)

- To conduct individual and collaborative research projects, duties to include: analysis and interpretation of research data; use of appropriate research techniques and methods; writing up of research results and dissemination through publications, seminar and conference presentations and public engagement and outreach activities; contributing to the identification of possible new areas of research.
- To contribute to the preparation of research proposals and applications to external bodies.
- To undertake appropriate organisational and administrative activities connected to the research project, including conference organisation, and the development of promotional or educational material including website maintenance and development.
JOB DESCRIPTION

• To develop and initiate collaborative working internally and externally, duties to include: the building of internal contacts and participation in internal networks; collaboration with colleagues on joint projects as required; participation in and identification of external networks in order to share information and identify potential opportunities for collaboration and possible sources of funding; attendance at and contribution to relevant meetings.

• To provide guidance to other staff and students, as required, as well as coordinating the work of small research teams.

• To assist with undergraduate teaching in own area of expertise.
# PERSON SPECIFICATION

## Qualifications

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Essential / Desirable</th>
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<tbody>
<tr>
<td>First degree in Chemistry, Physics or Engineering</td>
<td>Essential</td>
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<tr>
<td>PhD in (or soon to be awarded) in Chemistry, Physics, Engineering or equivalent experience</td>
<td>Essential</td>
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## Knowledge

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<tr>
<th>Knowledge</th>
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<tbody>
<tr>
<td>Knowledge in atmospheric science with the ability to engage in high quality research</td>
<td>Essential</td>
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<tr>
<td>Knowledge of a range of research techniques, in particular methodologies for in situ gas phase observations</td>
<td>Essential</td>
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<tr>
<td>Has research expertise in an area that will complement and enhance the department's research strategy and goals</td>
<td>Essential</td>
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<tr>
<td>Research expertise in data manipulation</td>
<td>Essential</td>
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<tr>
<td>Knowledge of techniques for the measurement of atmospheric VOCs</td>
<td>Desirable</td>
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## Skills, abilities and competencies

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<thead>
<tr>
<th>Skills, abilities and competencies</th>
<th>Essential / Desirable</th>
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<tbody>
<tr>
<td>Highly developed communication skills to engage effectively with a wide ranging audience, both orally and in writing, using a range of media</td>
<td>Essential</td>
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<tr>
<td>Ability to write up research work for publication in high profile journals and engage in public dissemination</td>
<td>Essential</td>
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<tr>
<td>Ability to develop research objectives, projects and proposals for own and joint research, with the assistance of a mentor if required</td>
<td>Essential</td>
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<td>Competency to conduct individual and collaborative research projects</td>
<td>Essential</td>
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<td>Ability to identify sources of funding and contribute to the process of securing funds, with collaborators if required</td>
<td>Essential</td>
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<td>Competency to make presentations at conferences or exhibit work in other appropriate events</td>
<td>Essential</td>
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# PERSON SPECIFICATION

## Experience

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<th>Essential/Desirable</th>
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<tr>
<td>Experience of carrying out both independent and collaborative research</td>
<td>Essential</td>
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<tr>
<td>Experience of writing up research work for publication</td>
<td>Essential</td>
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<tr>
<td>Ability to work as part of a team and also to work independently using own initiative</td>
<td>Essential</td>
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<tr>
<td>Experience of environmental fieldwork</td>
<td>Desirable</td>
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<td>Experience of instrument development</td>
<td>Desirable</td>
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<td>Experience of atmospheric measurements from an airborne platform</td>
<td>Desirable</td>
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## Personal attributes

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<th>Essential/Desirable</th>
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<tr>
<td>Attention to detail and commitment to high quality</td>
<td>Essential</td>
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<tr>
<td>Collaborative ethos</td>
<td>Essential</td>
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<tr>
<td>Interest in and enthusiasm for the subject matter of the project(s)</td>
<td>Essential</td>
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<td>Positive attitude to colleagues and students</td>
<td>Essential</td>
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<td>Willingness to work proactively with colleagues in other work areas/institutions</td>
<td>Essential</td>
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<td>Ability to plan and prioritise own work in order to meet deadlines, including using initiative to plan research programmes</td>
<td>Essential</td>
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<tr>
<td>Commitment to personal development and updating of knowledge and skills</td>
<td>Essential</td>
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<td>Willingness to travel overseas</td>
<td>Essential</td>
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The University of York has a world-leading research profile in atmospheric chemistry encompassing the science of global air pollution, stratospheric ozone depletion and climate change. The new £2M Wolfson Atmospheric Chemistry Laboratories were opened in 2013 bringing together around 40 researchers into a single dedicated building, the first of its kind in the UK. The laboratories host university staff (including four professorial appointments, two readers, one lecturer and two senior fellows), researchers from the NERC National Centre for Atmospheric Science and seconded staff from Government organisations such as Defra. Staff and research students are drawn from all over the world, currently including China, India, Singapore, Cape Verde, Spain, France and Germany. The research spans theory, laboratory/chamber studies, field measurements (including an overseas WMO observatory) and computer modelling and prediction.

Atmospheric chemistry research at York has generated more than 200 publications in the last 5 years including in journals such as Nature, Science and PNAS, and received more than £14M in external research funding, including more than £4M for equipment and high performance computing infrastructure. Several staff have received awards for their research including the Royal Society Rosalind Franklin Award (Carpenter), Royal Society of Chemistry John Eyres Award (Lewis), SAC Silver Medal (Lewis), Philip Leverhulme Prize (Carpenter, Lewis), and Desty Prize (Hamilton, Lewis). The research at York focuses on fundamental atmospheric processes but with emphasis on translation of basic research to policy and practice. For example research on natural emissions from trees was used by the UK Government to inform policy on summertime smog episodes, whilst new understanding of exchange of halogen compounds from the ocean has had a major impact on the UN stratospheric ozone assessment and the parties to the Montreal protocol. The atmospheric research at York also connects with industrial and commercial organisations in areas such as measurement technology, emissions characterization and security partnering with global organisations such as BP, Unilever, Givaudan, and DuPont, as well as a range of UK small and medium size companies.

Further information about the Wolfson Atmospheric Chemistry Laboratories is available at: [http://www.wacl.org.uk/](http://www.wacl.org.uk/)

The Department of Chemistry

The Department of Chemistry: [http://www.york.ac.uk/chemistry](http://www.york.ac.uk/chemistry) is one of the largest and most successful academic departments at York. The Department was placed in the top ten UK universities for Research Power by the 2014 Research Excellence Framework exercise (REF). Amongst our academic
THE DEPARTMENT

staff we have five Fellows of the Royal Society and many
national and international prize winners, contributing to a
dynamic and thriving department. The excellence of
Chemistry at York was recognised in the 2018 Guardian
League Table Guide, Complete University Guide and Times
University League Tables where it achieved an outstanding
2nd and two 4th places, respectively.

The Department has nearly 60 academic staff (including
teaching-only staff), more than 600 undergraduate students,
approximately 160 graduate students (mainly studying for
PhDs) and over 80 research associates and fellows. The
Department has a group of coherent laboratories, recently
extended and modernised, which provide an excellent
environment for both teaching and research; £35M has been
spent on new buildings and equipment in the last seven years.

Staff in the Department of Chemistry undertake research in a
wide range of fields and there are particular strengths in
analytical and archaeological science, atmospheric chemistry,
chemical and structural biology, green chemistry, materials
chemistry, metalloproteins, organometallic and catalytic
chemistry, synthetic organic chemistry and time-resolved
spectroscopy.

We have nearly 30 administrative staff (including those
funded externally), as well as over 50 technical staff who
provide assistance in the teaching and research laboratories
and maintain the workshops (mechanical, glass and
electronics) supporting these activities.

The undergraduate programmes, which typically attract over
1200 applications for the ca 180 places, have a flexible,
modular structure with opportunities for specialisation in
environmental, industrial and medicinal chemistry. There are
three-year (BSc) and four-year (MChem) courses with
opportunities for students to spend a year at one of a number
of overseas universities or in industry.

The Gold Award from Athena SWAN: https://
www.york.ac.uk/chemistry/ed/ for promoting women in
science was won by the Department of Chemistry in 2007 and
renewed in 2010 and 2015. This was the first Gold award
made in this scheme. The Athena SWAN Charter recognises
and celebrates good employment practice for women working in
science, engineering and technology (SET) in higher
education and research.

The case studies on our Equality and Diversity website:
https://www.york.ac.uk/chemistry/ed/fam-friendly-work/
illustrate the variety of working arrangements of staff which
are supported by the Department.

The Department of Chemistry operates a set of family-friendly
practices. Staff working patterns are flexible and a formal
Flexitime system is also in operation. The Department has
developed a maternity and paternity leave procedure to help
provide support for staff and the University has a nursery
http://www.york.ac.uk/univ/nrsry/ and a Child Care voucher
scheme.

The Department provides support for all categories of staff in
their applications for promotion, role reviews, awards, prizes
and rewarding excellence nominations. Staff are encouraged
to attend training events and take up opportunities for
professional development including those offered by the
award-winning University Learning and Development Team:
http://www.york.ac.uk/admin/hr/training/. The Department
strives to address diversity inequalities to ensure that there is
a culture that supports equality and encourages better
representation throughout the Department. Support for all
staff at all stages of their career is recognised as being
extremely important; individuals will be allocated a specific
mentor to help support them in future career development.
Social events are also held regularly for members of staff.

Opportunities for employment for partners exist across the
University, Science City York or within the City of York. The
Department recognises that employment for partners can be
an issue for new employees and will be understanding if you
raise this and will do its best to help.

The Department is committed to establishing a culture of
environmental good practice and all staff are asked to go
about their duties in a resource efficient way and minimise
impacts to the environment wherever possible.

The University has recently invested heavily in Chemistry. The
Dorothy Hodgkin Building was completed in two phases. The
first, housing Analytical Science and Synthetic Chemistry,
opened in 2005, while the second phase housing catalytic,
materials and synthetic chemistry was completed in 2012. The
department is exceptionally well equipped for NMR
spectroscopy and departmental instruments are housed in a
purpose-built building opened in 2006, while the Wellcome-
Wolfson-funded Centre for Hyperpolarisation in Magnetic
Resonance (CHyM) was completed in October 2012. The
Wolfson Atmospheric Chemistry Laboratories were opened in
2013 and are currently being extended (2018), while most
recently, a two-storey building housing new teaching and
research laboratories (to house Green Chemistry) and offices
was completed in March 2014. The department has recently
secured funding from the Wellcome Trust, the Wolfson
Foundation, a generous alumnus and the university to acquire
a 200 kV cryo-electron microscope and a building in which to
house it. Construction and installation are anticipated in 2018.
Founded on principles of excellence, equality and opportunity for all, the University of York opened in 1963 with just 230 students. In 2017 it is the home of more than 17,000 students across more than 30 academic departments and research centres. Since opening over fifty years ago, we have become one of the world’s leading universities and a member of the prestigious Russell Group.

We are consistently recognised as one of the leading Higher Education Institutes and one of just six post-war universities which appear in the world top 100 (2013-14) and 15th in the Times & Sunday Times league table (2016). The University of York has won six Times Higher Education (THE) Awards and five Queen’s Anniversary Prizes.

The University is proud of its association with Athena SWAN, holding 12 awards in support of gender equality, representation and success for all, with gold awards for Chemistry and Biology and a University-wide bronze award.

Of 154 universities that took part in the Research Excellence Framework (REF) in 2014, The University of York ranked 14th overall and 10th for the impact of our research. The University is consistently in the top ten UK research universities and attracts over £60m a year of funding from research alone.

Our vision is to make the University of York a world leader in the creation of knowledge through fundamental and applied research, the sharing of knowledge by teaching students from varied backgrounds and the application of knowledge for the health, prosperity and well-being of people and society.
THE UNIVERSITY

Attractive workplace

Centred around the picturesque village of Heslington on the edge of the city of York, our colleges are set in an attractive landscaped campus. York enjoys a safe, friendly atmosphere with facilities including bars, shops, theatres and concert halls all within easy walking distance.

The University has undergone an unprecedented period of expansion and renewal since 2000. We have invested in twenty new buildings on the original campus and have completed the first and second phases of a £750m campus expansion. Our investment in new colleges, teaching and learning spaces, laboratories, research facilities and a new sports village mean there has never been a better time to join us.

During this period of change we've worked hard to retain our friendly, informal and collegiate atmosphere, which is important to our core values of inclusivity and interdisciplinarity.

We have a thriving international community and are committed to providing staff moving to York with as much support as possible through our Relocation Package and Welcome Officers.

The University aims to offer a nurturing and supportive environment as an employer. Flexible working hours, nursery facilities, childcare vouchers, cycle to work scheme, generous holidays and an attractive pension scheme all make the University of York one of the region’s leading employers.

For further information please visit our employee benefit pages.
The City of York

Internationally acclaimed for its rich heritage and historic architecture, York's bustling streets are filled with visitors from all over the world. Within its medieval walls you will find the iconic gothic Minster, Clifford's Tower and the Shambles - just a few of the many attractions.

But York isn't just a great place to visit - it's also a great place to live and work. While nourishing a vibrant cosmopolitan atmosphere, York still maintains the friendly sense of community unique to a small city.

Visit www.visityork.org for more information on the city of York

Shopping, culture and entertainment

York boasts specialist and unique boutiques but also all the high street stores on its busy shopping streets. Alongside them you will find cinemas, theatres, an opera house, art galleries, a vast range of restaurants, live music venues and clubs. York is particularly renowned for its multitude of pubs and bars, from the modern to the medieval.

Housing and schools

Whether you choose to live close to the city, in one of the surrounding villages or further afield, you will find a wide range of housing within comfortable distance of York and the University. For families, the area has a range of excellent schools both in the state and independent sector.

Great location

York is one of Britain's best-connected cities. Halfway between London and Edinburgh on the East Coast mainline, on intercity trains you can reach London King's Cross in less than two hours and Edinburgh in two and a half hours. York is also well served by road links, and it is easily accessible from the A1, M1 and the M62.

For those travelling from overseas, Manchester Airport is two hours away and Heathrow Airport just three and a half. Flights from nearby Leeds Bradford Airport provide easy access to mainland Europe. By Eurostar from London St Pancras, Paris is just over six hours away.

Yorkshire

The Lonely Planet guide recently declared Yorkshire the third best region in the world to visit. There is something to cater to every taste, whether it be the rugged landscapes of the Moors or the Dales, the picturesque seaside towns of Scarborough and Robin Hoods Bay, the gothic architecture of Whitby or the vibrancy of cosmopolitan Leeds.
Apply online

- Go to https://jobs.york.ac.uk
- Find this job using reference 6446
- Complete the online application form

You will need to submit your completed application by midnight (local UK time) on 30 March 2018

What will I need?

You will need to upload:

- your CV
- a letter describing how you meet the requirements of the job

You will also need details of 2 referees.

Help and assistance

Direct any informal queries to Dr James Hopkins jim.hopkins@york.ac.uk

If you have any questions about your application, contact the HR Services team:

recruitment@york.ac.uk

+44 (0)1904 324835