Professor of Sustainable Chemistry & Director of Green Chemistry Centre of Excellence

Department of Chemistry

Closing date: 24 October 2021
Interview date: 23 November 2021
Vacancy reference: 9838
INTRODUCTION

We are seeking a successor to Professor James Clark as Director of the Green Chemistry Centre of Excellence (GCCE) to work with existing GCCE academics to provide the drive and vision needed to ensure that the GCCE maintains its global status and takes advantage of new national and international opportunities in green chemistry, sustainable development and circular economies.

Current GCCE research interests include: utilising food supply chain waste as a chemical feedstock; carbon dioxide capture and utilisation; design and development of sustainable solvents; development of sustainable materials; energy efficient processing including use of microwave reactors (batch and flow). This work is carried out in a highly collaborative environment with partners within Chemistry, other York departments and at other UK and overseas institutions. The successful candidate will have research interests that complement and have the potential to enhance and extend our existing research strengths. The appointee will be expected to secure substantial research funding from diverse sources including industry, to engage in collaborations within and external to the department and to commit to the advancement and strategic development of the Department of Chemistry.

The successful applicant will also be expected to carry out teaching and administrative responsibilities to a high standard. GCCE contributes to undergraduate modules on green and sustainable chemistry and, in addition, delivers a taught MSc in Green Chemistry and Sustainable Industrial Technology which is attracting growing numbers of students from around the world.

The Department of Chemistry is one of the UK’s leading Chemistry departments, renowned internationally for its research. This is combined with a commitment to outstanding teaching and student satisfaction, and an international reputation for Equality, Diversity and Inclusion, recognised through a number of Athena SWAN Gold Awards.

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.

Further information can be found within this brief and on our website: [www.york.ac.uk/chemistry/](http://www.york.ac.uk/chemistry/)

Professor Caroline Dessent
Head of Department
Main purpose of the role

Professors at York are expected to advance their subject nationally and internationally, and to contribute to maintaining the University as an international centre of excellence for the relevant subject area through research and publication, teaching, networking and consultancy.

The role holder will be the new Director of the GCCE and will lead and manage the various activities within the Centre with support from other colleagues.

Professors are required to undertake the duties outlined below:

Key responsibilities

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

To support the research activities of the Department

- To carry out internationally outstanding research and scholarship in areas related to green chemistry, sustainable development and circular economies
- To disseminate this research through articles in high-impact journals, and other appropriate forms of dissemination, including national and international conference presentations
- To play a leading role in the Department in identifying and securing external funding through research grants and contracts, and in developing collaborative research income-generating activities
- To attract and supervise research students, and, as appropriate, post-doctoral researchers and other support staff

To support, comply with, and contribute fully to research plans and policies of the Department and the University

To support and mentor junior academic colleagues in order to promote quality of teaching and research and their career development

To design and be responsible for delivery of modules and teaching programmes for undergraduate and graduate students

To play a leading role in departmental and interdepartmental curriculum development and quality enhancement

To coordinate team teaching, as required, including liaison with other staff and with postgraduates who teach

To design and mark assessments, and give feedback

To supervise undergraduate and graduate projects and dissertations

To undertake pastoral support of students, as a personal supervisor or in another designated role

To support and promote fully the University and Department teaching quality assurance standards and procedures

To contribute to the efficient management and administration of the Department

- To make an important contribution to the leadership and management of the Department, including supporting early career staff and developing new collaborative initiatives
- To attend Departmental meetings, meetings of the Board of Studies, and other committees and working groups within the Department and University
- To carry out relevant professional duties, commensurate with the Professorial grade
- To undertake specific departmental roles and management functions as may be reasonably required by the Head of Department

JOB DESCRIPTION

At a glance

<table>
<thead>
<tr>
<th>Salary</th>
<th>Minimum starting salary £65,961 on the professorial scale</th>
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<tbody>
<tr>
<td>Hours of work</td>
<td>37 per week (flexibility available)</td>
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<tr>
<td>Contract type</td>
<td>Open</td>
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<tr>
<td>Based at</td>
<td>Heslington Campus</td>
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## PERSON SPECIFICATION

<table>
<thead>
<tr>
<th>Essential / Desirable</th>
<th>Qualifications</th>
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<tbody>
<tr>
<td>Essential</td>
<td>PhD in Chemistry or related area</td>
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<td>Desirable</td>
<td>Membership of professional societies</td>
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<table>
<thead>
<tr>
<th>Essential</th>
<th>Knowledge</th>
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<tr>
<td>Essential</td>
<td>Outstanding and internationally recognised knowledge of green and sustainable chemistry and related areas</td>
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<tr>
<td>Essential</td>
<td>Knowledge of National and International funding schemes</td>
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<table>
<thead>
<tr>
<th>Essential</th>
<th>Skills, abilities and competencies</th>
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<tr>
<td>Essential</td>
<td>Ability to define, lead, manage and attract funds for internationally excellent research, operating across disciplinary boundaries</td>
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<tr>
<td>Essential</td>
<td>Proven leadership and managerial skills</td>
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<tr>
<td>Essential</td>
<td>Ability to manage and interact with staff and students at all levels and to contribute to broadening the strategic development of the Department</td>
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<tr>
<td>Essential</td>
<td>Evidence of international collaboration</td>
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<thead>
<tr>
<th>Essential</th>
<th>Experience</th>
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<tbody>
<tr>
<td>Essential</td>
<td>International leader in a major research field relevant to green and sustainable chemistry, leadership of research group/theme</td>
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<td>Essential</td>
<td>Substantial publication record relevant to green and sustainable chemistry in leading peer-reviewed journals</td>
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<td>Essential</td>
<td>Attraction and effective supervision of postgraduate students</td>
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<td>Essential</td>
<td>Significant and sustained success in securing research grants and other external funding, including from industry</td>
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<td>Essential</td>
<td>Invited presentations at major international conferences</td>
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<td>Essential</td>
<td>Effective and sustained involvement in major administrative tasks or positions of responsibility within a department or research unit</td>
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<tr>
<td>Desirable</td>
<td>Activity as an invited examiner at other institutions</td>
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# PERSON SPECIFICATION

## Experience (continued)

<table>
<thead>
<tr>
<th>Experience</th>
<th>Essential / Desirable</th>
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<tr>
<td>Experience of curriculum development, course design and teaching, learning and assessment methods at UG and PG levels and in encouraging student access and engagement</td>
<td>Desirable</td>
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<tr>
<td>Participation in national teaching initiatives or international equivalents</td>
<td>Desirable</td>
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## Personal Attributes

<table>
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<tr>
<th>Attribute</th>
<th>Essential</th>
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<tr>
<td>Demonstrable capacity for strategic thinking and planning</td>
<td>Essential</td>
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<td>Ability to take a lead in key administration functions within the department</td>
<td>Essential</td>
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<td>Self-motivated, pro-active and innovative</td>
<td>Essential</td>
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<tr>
<td>Demonstrate a personal commitment to equality, diversity and inclusion</td>
<td>Essential</td>
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The Department of 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 staff we have six 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 by the outstanding 4th places in the 2020 Times University League Table guide, the 2020 Complete University Guide and the Guardian League Table.

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 extensive laboratory provision, which has been recently extended and modernised, providing an excellent environment for both teaching and research; £35M has been spent on new buildings and equipment in the last seven years.

The University has 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 Welcome-Wolfson-funded Centre for Hyperpolarisation in Magnetic Resonance (CHyM) was completed in October 2012. The Wolfson Atmospheric Chemistry Laboratories (WACL) were opened in 2013 and have recently been extended (2018). A two-storey building housing new teaching and research laboratories (to house Green Chemistry) and offices was completed in March 2014. The department, through YSBL, 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. The facility is now in full operation.

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 photochemistry and laser spectroscopy.

We have over 30 administrative staff (including those funded externally), and over 50 technical staff who provide in-laboratory support to teaching and research activities, as well as providing analytical services (e.g. nuclear magnetic resonance, mass spectrometry, chromatography, X-ray diffraction and elemental microanalysis) and who deliver in-house mechanical, glass and electronics workshops services. 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 to minimise impacts to the environment wherever possible.

Continued over page
Undergraduate teaching

The degree programmes within the Department of Chemistry at the University of York are recognised nationally and internationally for the quality of their student experience, novel teaching methods and final outcomes. The undergraduate courses, 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.

Students rated the Department with an overall satisfaction rating of 94% in the most recent National Student Survey. Central to York’s teaching is the College system. All Chemistry students belong to one of the eight Teaching Colleges, which contain a number of tutors from different disciplines, one of whom is also the student’s pastoral supervisor. The College system provides the majority of the Department’s learning support through either tutorials (5 students per session) or workshops (whole College group, maximum 25 students). The core undergraduate Chemistry programme is delivered through lecture courses comprising between 5 and 9 lectures and while some core modules are themed, they are intended to be interdisciplinary and are not delivered as traditional sub-disciplines.

Student teaching laboratory work is undertaken in the recently built Chemistry F-block. In Years 1 and 2, students typically spend one whole day a week in the laboratory. MChem students in Year 3 undertake three advanced experiments in the Autumn Term and an open-ended group mini-project in the Spring Term, designed to act as preparation for final-year research projects. The Department offers a number of transferable skills courses throughout the programme covering topics such as ethics, presentation skills, team working, quantitative skills and mathematics.

Green Chemistry Centre of Excellence

Established originally in 1998 as the Centre for Clean Technology, the GCCE now occupies purpose-built and well-equipped accommodation over 1,400 m², including an Industrial Engagement Facility that offers academia-to-business and business-to-business interactions in a fit-for-purpose environment. Today the GCCE is a world-leading academic facility for pioneering pure and applied green and sustainable chemical research.

In 2011, the GCCE, along with the Centre for Natural Agricultural Products (CNAP, part of the Department of Biology), secured funding to establish the Biorenewables Development Centre (BDC) offering staff and collaborators the opportunity to demonstrate technology on a multi-kg scale and hence to advance research carried out in the GCCE and/or CNAP to TRL level 5 or 6. The BDC, which houses a wide range of large-scale batch and flow instruments including bespoke microwave facilities in premises close to the university campus, operates as a University-owned not-for-profit company, facilitating the production of large quantities of novel green products for evaluation. The combined facilities of the GCCE and BDC allow us to work from grams to kilograms with a strong emphasis on waste valorisation and clean technologies.

The success of the GCCE has been largely due to the vision and efforts of Professor James Clark and, as a result of his decision to partially retire, we are now seeking to appoint his successor.

With other exciting developments planned, our vision is to further develop the high-quality of provision of green and sustainable chemistry within the University of York and we aim to play a leading role in the global strategic step change to a low-carbon, bio-based economy. This will be achieved by pure and translational research, education, training, networking and partnerships embedded within a framework of sustainability.

The GCCE currently comprises four academic staff:

- Professor James Clark (Professor of Industrial and Applied Chemistry; Director of GCCE, 40% contract)
- Professor Michael North (Professor of Green Chemistry; Academic Group Leader for Green and Materials Chemistry)
- Dr Duncan Macquarrie (Reader)
- Professor Avtar Matharu (Professor and Deputy Director of GCCE)

Please see our other employment opportunities within the Department of Chemistry.
The **Gold Award from Athena SWAN** for promoting women in science was won by the Department of Chemistry in 2007, this was the first Gold Award made in this scheme and it was renewed in 2010 and 2015 with a new style Gold Award achieved in 2019. The Athena SWAN Charter recognises advancement of gender equality: representation, progression and success for all.

York is a founding signatory of the **Technician Commitment**, which aims to ensure visibility, recognition, career development and sustainability for technicians working in higher education and research, across all disciplines. Chemistry is fully engaged with delivering York’s commitment, and as such actively promotes networking (often through TechYork), career development opportunities and CPD activities for technicians.

The case studies on our [Equality and Diversity website](#) 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**.

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 [People and Organisational Development Team](#). 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 and individuals are 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 UNIVERSITY

We are a world-class institution, focused on creating an environment of excellence in which all our students, staff and researchers can thrive. Our Research Strategy encompasses our vision that York should provide a home for some of the best research in the world. (https://www.york.ac.uk/research/)

We are a high-performing member of the Russell Group, ranked 16th in the Guardian’s Best University UK Universities 2021 League Table, and 30th in the Complete University Guide 2020. We have been awarded TEF Gold for our research-led teaching which provides "consistently outstanding outcomes for students from all backgrounds".

Our Equality, Diversity and Inclusion Strategy speaks to the core of our values. We hold 16 awards from Athena SWAN, recognising the advancement of gender equality: representation, progression and success for all.

Our vision is to be a university for public good, supported by five key strategic themes:

- Internationalism
- Sustainability
- Civic responsibility
- Research
- Student experience and teaching

At the heart of the region

The University is deeply embedded in the local community of North Yorkshire. Our values and commitment to the public good have never been more important. We are a hub for sharing knowledge, inspiring collaboration and enriching lives.

Across the University, we are mobilising our knowledge, our people and our resources to tackle the immediate and long-term challenges created by the coronavirus crisis.

https://features.york.ac.uk/who-we-are/
Our campus community

Located within walking distance of York city centre, our safe and beautiful campus is home to our ten colleges and most departments. We also have departments located in the city centre at the historic King's Manor, and we are investing in the sustainable development of our whole campus.

All York students become members of our college system, which provides an inclusive and a valuable sense of community on campus alongside the cultural offerings of the thriving city of York.

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 is committed to promoting a diverse and inclusive community - a place where we can all be ourselves and succeed on merit. We offer a range of family friendly, inclusive employment policies, flexible working arrangements, staff engagement forums, campus facilities and services to support staff from different backgrounds.

For further information please visit our employee benefit pages

https://www.york.ac.uk/admin/hr/employee-benefits/selection/introduction/
THE CITY AND THE REGION

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](http://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 9838
- Complete the online application form

You will need to submit your completed application by midnight (local UK time) on 24 October 2021.

What will I need?

- Your CV
- A letter (2 pages maximum) describing how you meet the requirements of the job and demonstrating your understanding of the department (Labelled as ‘Cover Letter’)
- A statement (2 pages maximum) of your teaching experience, philosophy and how you envisage being able to contribute to departmental teaching, both within your sub-discipline but also to core chemistry. (Labelled as ‘Statement of teaching intentions’)  
- A Research Proposal (4 pages maximum) outlining your leadership plans and vision for the GCCE over the first 2, 5 and 10 years of your directorship. You should also include details of your own individual research plans and vision, and how these interface with the broader GCCE within this document. (Labelled as ‘Statement of Research Intentions’)
- Please do not upload any additional documents

You will also need to provide details of three academic referees (one International) and one Employment referee

Help and assistance

Direct any informal queries to Professor Caroline Dessent Email: chem-hod@york.ac.uk Tel: +44 (0) 1904 322500

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

recruitment@york.ac.uk

+44 (0) 1904 324835