Chemistry Update

Newsletter 295, 23 March 2018

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Calendar of Events

Durham ECR Mini-Symposium
Speakers: Dr Alyssa Avestro, Dr Matthew Kitching & Dr James Walton, University of Durham
Date: Wednesday 28 March
Time: 12.30pm—2pm
Location: C/B/101

JISC EdTech in Higher Education Interactive Award Lecture
Speaker: Dr Glenn Hurst, University of York and Verity Nalley, Digi Lab
Date: Wednesday 4 April
Time: 2pm—4pm
Location: C/B/101

3rd Year PhD Johnson Matthey Poster Competition with Guest Seminar
Date: Tuesday 10 April
Posters
Time: 10.30am—1pm
Location: C/B/101
Winners Announced followed by Seminar
Speaker: Dr Martin Partridge, Johnson Matthey
Time: 15.00
Location: C/A/101

Bioinorganic Seminar
Speaker: Professor Thomas Ward, University of Basel
Date: Wednesday 18 April
Time: 2pm—3pm
Location: C/A/101

Annual Equality and Diversity Seminar
Speaker: Professor Ellie Highwood, University of Reading
Date: Wednesday 25 April
Time: 1pm—2.30pm
Location: C/A/101

Microwave Commercialisation Club Workshop
Date: Thursday 26 April
Time: 9.30am—4pm
Location: GCCE, 1st Floor F Block

Date of Next Issue:
27 April 2018

Chemistry Admissions Highlights

Our Departmental undergraduate Chemistry Admissions newsletter shows what an exciting and successful year we have had.

Our recently produced **2018 *Chemistry Admissions* newsletter**, prepared by our undergraduate admissions team, illustrates our continued success in both teaching and research. Notable achievements have included our **outstanding NSS results**, our jump to **second place in the Guardian University League Table**, the successful launch of our landmark MOOC, called **Exploring Everyday Chemistry**, and our celebrations to mark 10 years since we gained our **Athena SWAN Gold Award**.

The newsletter also features some of our award winners, including Royal Society of Chemistry research prizes, as well as research highlights – from new ways of safely trapping carbon dioxide, to the development of novel antibiotics and a new technique to enhance the performance of magnetic resonance imaging (MRI) in identifying disease. Some of our research funding is all included, notably the award of **£1.6 million** to invest in a technique called **cryoelectron microscopy** (cryo-eM), which helps us to see, for example, how drugs get into cells.

Our UCAS offer holders have been posted a hardcopy of *Chemistry Admissions* and it is also available on the web.

The admissions team has also recently revamped their undergraduate course pages for prospective applicants for 2019/20 entry, as well as producing a new animation video to promote our undergraduate student journey – from preparing to study, to progression through the four years of our MChem degree, highlighting course options and our distinctive college-based teaching, followed by graduation and employment.

Professor James Clark Gives ACS Guest Lecture

Professor James Clark, Director of the Green Chemistry Centre of Excellence (GCCE), gave the Guest Lecture at the American Chemical Society GCI Pharmaceutical Roundtable meeting in Stevenage in March on "Ways to overcome Green Chemistry barriers in Pharma".

The ACS GCI Pharmaceutical Roundtable was developed to encourage innovation while catalysing the integration of green chemistry and green engineering in the pharmaceutical industry.

Green Chemistry Graduate Becomes Vice Chancellor

Professor Egid Mubofu, who obtained his PhD in the Green Chemistry Centre of Excellence (GCCE) has become Vice Chancellor at the University of Dodoma in Tanzania.

Professor Egid Beatus Mubofu received his BSc. (Ed.) from the University of Dar es Salaam in 1992, after which he spent a year working for Unilever (TZ) as a factory management trainee at Kibwele Factory. Between 1994 and 1997, he pursued his MSc (Chem.) programme at the University of Dar es Salaam. In October 1997, he joined the University of York and received his PhD in Chemistry in June 2001, supervised by Professor James Clark and Dr Duncan Macquarrie.

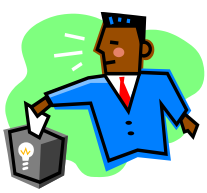
After leaving York, Professor Mubofu joined the Chemistry Department at University of Dar es Salaam as a Lecturer in 2003, was promoted to Senior Lecturer in 2008 and served as Head of the Chemistry Department, at the University of Dar es Salaam. He is now an Associate Professor and serves as the Director General of Tanzania Bureau of Standards (TBS).

Professor Mubofu's research interests are on green chemistry, nanomaterials and catalysis using environmentally friendly, locally available reagents and surfactants. Since 2005, he has supervised over 22 postgraduate students, has well over 50 publications in high impact scientific journals and 5 book chapters.

Professor Mubofu has now been appointed Vice Chancellor of The University of Dodoma, a public university established in 2007, located in central Tanzania in the country's capital city, Dodoma. Under Professor Mubofu's leadership, The University of Dodoma will continue its major expansion, and when complete, the ambition is for the university to enrol 50,000 students, making it the largest university in Tanzania.

The GCCE where Professor Mubofu carried out his PhD here in York is an internationally-leading academic facility for pioneering pure and applied green and sustainable chemical research through its technology platforms on microwave chemistry, alternative solvents, clean synthesis and bio-based mesoporous materials, with a strong emphasis on waste valorisation and clean technologies.

Online Department Suggestion Box



The online Equality and Diversity suggestion box has been extended to be a suggestion box for the whole Department. You can submit your thoughts / suggestions / ideas for general Departmental matters as well as matters relating to Equality and Diversity. You can find the Google form on the intranet homepage or at this link.

York Academics Contribute to New Air Pollution Report

Evidence and recommendations from researchers in the Department of Chemistry have been included in a new air pollution report released by the House of Commons.

The unprecedented joint inquiry was launched in 2017 amid concerns over the inadequacy of the Government's plan to improve air quality in the UK, as demonstrated by a series of successful judicial challenges in recent years.

Dr Sarah Moller and Professor Alastair Lewis provided detailed evidence to the inquiry on a range of topics including air pollution measurement strategy, priorities for emissions controls and potential changes to the taxation of fuels and pollution in the UK.

Recommendations

Their recommendations were frequently cited in the report, as was recent research from the University on European trends in NO_2 which indicated that roadside air pollution targets may be met sooner than is currently anticipated.

The Department of Chemistry at York hosts a NERC research centre, the National Centre for Atmospheric Science (NCAS), which has a key role in providing impartial advice to Government on the basic science of air pollution.

Dr Moller works as a joint appointment between the University and Defra, and also holds a NERC Knowledge Exchange Fellowship.

She said "The University plays a unique role in air pollution science in the UK. It not only generates a large volume of original research and hosts the NERC centre, but it also leads on linking the latest UK air quality research with Defra. It is very encouraging to see scientific advice being used so widely in reports of this kind."

Investment

Researchers at York have proposed that more emphasis be placed on directly measuring emissions to air, to help confirm that new policies to improve air quality are working and to avoid any repeat of the unanticipated problems associated with NOx from diesel engines.

They have also recommended that the taxation of carbon dioxide emissions and other air pollutants be combined where possible to encourage investment in technologies that simultaneously meet

national priorities to reduce greenhouse gas emissions and improve air quality.

Professor Lewis added: "The recent government announcement of £4.3 million in new infrastructure for air pollution research will mean we can provide even more detailed information and advice on trends in air pollution and emissions and allow the University and NCAS to continue to shape future actions to improve air quality in the UK."

Rescheduled Workshop: Sustainable Manufacturing for the Chemical Industry

Dr Liz Rylott's workshop from the "Sustainable Manufacturing for the Chemical Industry" series has been rescheduled from last month due to snow.

The details of the workshop and rescheduled date are as follows:

Wed 25 April 2018 15:00—17:00	**Where there's muck there's brass? Remediating, with added value, metal and organic wastes from contaminated land**	Dr Liz Rylott, Centre for Novel Agricultural Products (CNAP), Dept. of Biology

Contaminated land can pose significant implications in terms of environmental and health hazards and is very expensive - managing contaminated land in Europe costs an estimated €6.5 billion per year. The second in a series of workshops covering Sustainable Manufacturing for the Chemical Industry from a number of multidisciplinary viewpoints, this particular workshop covers the cleaning of land contaminated through anthropogenic activities in order to return it to use in multiple applications. Some of the most common and also most difficult to remediate contaminants and pollutants will be discussed as well as a range of methodologies for resolution of the issue, with varying levels of sophistication and cost.

For more information and to register, see:
https://www.eventbrite.co.uk/e/where-theres-muck-theres-brass-tickets-42937695804

Global Fossil Fuel Emissions of Hydrocarbons Underestimated

Global levels of ethane and propane in the atmosphere have been underestimated by more than 50%, new research involving scientists in the Department of Chemistry has revealed.

These hydrocarbons are particularly harmful in large cities where, through chemical reactions with emissions from cars, they form ozone – a greenhouse gas which is a key component of smog and directly linked to increases in mortality.

Fracking

Ethane and propane escape into the air from leaks during natural gas extraction and distribution, including from fracking – the process of drilling down into the earth and fracturing rock to extract shale gas. This new study shows that global fossil fuel emissions of these hydrocarbons have been underestimated and are a factor of 2-3 times higher than previously thought.

When ethane and propane mix with nitrogen oxides from vehicles and power plants they form ozone - a greenhouse gas which is a key component of smog and directly linked to increases in mortality.

The authors of the international study involving researchers from York, Oslo and Colorado are now calling for further investigation into fossil fuel emissions of methane, a potent greenhouse gas which is emitted along with ethane and propane from natural gas sources.

Co-author of the study, Professor Lucy Carpenter from the Department of Chemistry at the University of York, said: “We know that a major source of ethane and propane in the atmosphere is from “fugitive” or unintentional escaping emissions during fossil fuel extraction and distribution. If ethane and propane are being released at greater rates than we thought, then we also need to carefully re-evaluate how much of the recent growth of methane in the atmosphere may also have come from oil and natural gas development. The current policy case for fracking, for example, is partly based on the belief that it is less polluting that coal.”

Damaging Consequences

The study used data collected from 20 observatories world-wide. The researchers from the University of York provided high-resolution data from a monitoring station in Cape Verde – a crucial location in the Atlantic which captures air blown over the Sahara, from North America, the Middle East and North Africa.

Like other hydrocarbons, when ethane and propane mix with nitrogen oxides from vehicles and power plants they form ozone in the troposphere – the lowest layer of the atmosphere that constitutes the air we breathe. While ozone in the Earth's second layer of atmosphere – the stratosphere – is desirable, ground level ozone has damaging consequences for ecosystems and human health.

Scientists need to understand accurately the levels of hydrocarbons in the atmosphere to predict the exposure of populations to ozone. This is particularly important for some suburban and rural areas which are already known to be on the edge of the limits of safe exposure.

Pollution

Professor Ally Lewis, a co-author of the study added: "Levels of ethane and propane declined in many places the 1980s and 1990s, but global growth in demand for natural gas means these trends may be reversing. The effects of higher ozone would be felt in the rural environment where it damages crops and plants, and in cities on human health.

"Tropospheric ozone causes a variety of serious health complaints and along with particulate matter and nitrogen dioxide is one of the three major causes of pollution-related deaths."

Discrepancy between simulated and observed ethane and propane levels explained by underestimated fossil fuel emissions is published in *Nature Geoscience*.

New Starters

Dr Pedro Bule Gomes , PDRA in YSBL
Room: BK151/BK253 ; Ext: 8278; Email: pedro.bule@york.ac.uk

Scott Hicks, Teaching Laboratories Assistant
Room: C/F010; Ext: 4958/2530; Email: scott.hicks@york.ac.uk and chem-tl-tech@york.ac.uk

Gregg Addicott, new role as Undergraduate & Teaching Laboratories Administrator
Morning: Room: C/F010; Ext: 1045; Afternoon: Room: C/A109, Ext: 4544;
Email: gregg.addicott@york.ac.uk

Chemistry Fellowships Day 2018

The Department of Chemistry held its second Independent Research Fellowships Open Day on Friday 16 March 2018. The event was again well attended by internal and external visitors from the Universities of Leeds, Durham, Cardiff, Southampton, Bristol, Imperial, Oxford and Cambridge. The day began with a welcome from our Head of Department, Professor Duncan Bruce, who gave his perspective on why fellowships are important for the Department, followed by an informal 'get to know you' session where the attendees identified what they wanted to get out of the day. Professor Lucy Carpenter, Chair of Research Committee, presented the Departmental and thematic research strategies, outlining how fellowships complement these strategies, followed by presentations from Dr Andy Goddard, Chemistry Research Facilitator, and Dr Meghan Halse, Fellowships Champion, on the mechanics and processes involved with of applying for a fellowship. Dr Karen Clegg, Head of Research Excellence Training (RETT) then presented how the University of York could support fellowship candidates prior to application and what training and support would be available for fellowship holders.

After a networking lunch and tours of the Department, current and former fellowship holders gave talks, offering their perspectives and advice on applying for and holding fellowships including what their profile was when they applied for their fellowships. The day ended with a panel discussion addressing questions that had come up throughout the day, including those identified in the initial get to know you session. The day concluded with an informal networking drinks reception. The day was again a great success and we look forward to working with the attendees in the future on their exciting applications. Thank you to everyone who helped on the day and who held informal meetings with our attendees. The presentations from the day are now available on the internet.

New Branded Lab Coats Available in the Department

The Department of Chemistry has purchased 20 new lab coats, embroidered with the University of York logo, to be worn for publicity filming, photo shoots and events. We made good use of these lab coats last month when Reuters came to the Department to film a news story in the Green Chemistry Centre of Excellence (GCCE).

From left to right: Mark Dowsett, Cassie Lewis, Professor Michael North, Dr Alison Parkin and Dr Katie Lamb modelling the new lab coats

If you would like to borrow these lab coats (which come in a variety of sizes), please e-mail greenchemistry@york.ac.uk. They can be collected from the GCCE where they are being stored. Please note that as the material is poly-cotton, they are **not suitable for research purposes**.

Re-scheduled Board of Studies Meeting

The July 2018 Board of Studies meeting has been re-scheduled from 4 July 2018 to Wednesday, 11 July 2018, C/A102 (2pm).

The full calendar of 2017/18 BoS meeting dates can be found on:

https://www.york.ac.uk/chemistry/chem-intranet/staff-intranet/working-chemistry/committees-groups/bos/

Using Google Team Drives in the Department of Chemistry

More detailed, step-by-step instructions are available from the G Suite Learning Centre:
https://gsuite.google.com/learning-center/products/drive/get-started-team-drive/

What is a Team Drive?

Team Drives are useful for groups of people (the 'team') to collaborate by storing, sharing and editing documents. The benefit of using a Team Drive is that files then belong to a team and not to an individual, so there is no risk of documents disappearing when an individual/team member leaves the University.

How to Create a Team Drive

Open your Drive and right-click Team Drives in the Navigation column on the left. Select **New Team Drive** and then in the pop-up box choose a name for your Team Drive. Click **Create**. The Drive will appear under 'Team Drives' in the Navigation column.

Helpful Hint

When naming the Team Drive, it is helpful to identify the folder by including the Department name and the team description, e.g. Chemistry Admin Team Drive.

Adding Members

Right-click the Team Drive in the Navigation column and select **Add members**. In the pop-up box add their details, and select their levels of access by clicking on the downward arrow next to **Full**. You can later change their permissions or remove people entirely by selecting **Manage members** when you right-click on the Team Drive in the Navigation column.

Adding Content

Documents and folders can be added to the Team Drive by anyone with Edit access. This is done in exactly the same way as you would add documents to My Drive.

Sharing Documents Outside the Team

Any documents added to the Team Drive can be accessed by the members of the team. It is also possible to share them with people outside the team. This is done the same way you would share documents in My Drive (right-click on a document and select **Share** or **Get shareable link**). The G Suite Learning Centre pages provide more details on sharing and access levels.

https://www.york.ac.uk/chemistry/chem-intranet/staff-intranet/working-chemistry/how-do-i/

Transferring Ownership of Files in Google Drive

If you leave the Department of Chemistry, it is important that any documents that you own, and those which you have shared with others, can still be accessed by the relevant people. Once someone has left the University, their account is closed by IT Services and any documents, of which they are the owner, are deleted.

The easiest way to ensure that files are not lost is to move shared files into a Team Drive, and add your team members to it. When you move a file into a Team Drive, the ownership of the file automatically passes over to the Team Drive itself and is no longer owned by an individual account. This means you won't lose files when a member of your team leaves. Please see 'How do I...Use Google Team Drive' for instructions on the creation and management of a Team Drive.

Check File Ownership

You can see all files owned by your account by going to https://drive.google.com and typing **owner:me** in the search box.

You can see the files that another person has shared with you by typing **owner:jo.bloggs@york.ac.uk** in the search box.

Transfer File Ownership to Another Google Account

You can change who owns a file or folder in Drive.

1. Go to Drive or a Docs, Sheets, or Slides home screen
2. Open the sharing box:
   - In **Drive**: Select the file or folder and click the share icon at the top 
   - In **Docs, Sheets, or Slides**: Open the file and click **Share** in the top-right corner of the file
3. If the new owner already has edit access, skip to Step 4. Otherwise, follow these steps:
   - Type the email address of the new owner in the "Invite people" field
   - Click **Share & save**
4. Click **Advanced** in the bottom-right corner of the sharing box
5. Click the drop-down menu next to the name of the person you want to own the file or folder
6. Select **Is owner**
7. Click **Done**

You will still have access to the file as an editor after you have transferred ownership to a different account.

https://www.york.ac.uk/chemistry/chem-intranet/staff-intranet/working-chemistry/how-do-i/

Chemical *Inter*Actions International Picnic

The Chemical *Inter*Actions social group for staff and students held an international picnic at the end of term. The idea was to get to know each other a little better whilst celebrating the diversity of nationalities we have here in the Department - and an excuse for some yummy food.

Staff and students brought along delicious dishes from around the world, including Russia, Brazil, China and the UK. There were Yorkshire cheeses, fantastic curries and tabbouleh along with a fantastic range of cakes, sweets and biscuits including Creme de Abacate (avocado cream with cocoa from Brazil).

The event was really well attended (over 30 people) and we would like to thank everyone that came along and contributed. It was a great opportunity to meet different people in the Department and try some new things. If anyone has any ideas for future events, or would like to be involved with the group, please get in touch: chemical-interactions-group@york.ac.uk .

Important Equality and Diversity Dates for Your Diary

Annual Equality and Diversity Seminar

Speaker: Professor Ellie Highwood, University of Reading

Wednesday 25 April 2018, 13.00—14:30, C/A101

Professor Ellie Highwood is Dean of Diversity and Inclusion and Professor of Climate Physics in the Department of Meteorology at the University of Reading. Professor Highwood will talk about diversity and inclusion at Reading and also discuss her research in climate science.

Celebrating 10 years of Chemistry Athena SWAN Gold: Beacon Symposium and Public Lecture

The Department of Chemistry is celebrating 10 years of Athena SWAN Gold this year. To celebrate this milestone, there will be a scientific symposium and a public lecture in May this year featuring Professor Carolyn Bertozzi of Stanford University, USA.

Scientific Symposium Celebrating Diversity in the Chemical Sciences

Wednesday 16 May 2018, 13.30—17.30, Piazza building

This scientific symposium will mark the occasion with talks from a diverse range of speakers, from early career researchers onwards.

The keynote lecture will be given by Professor Carolyn Bertozzi of Stanford University, USA. Other speakers include: Professor David Haddleton, University of Warwick and Professor Paul Walton, University of York.

More information can be found on the events page, a full programme of speakers and details of how to sign up will be available soon.

Public Lecture: What the sugar coating on your cells is trying to tell you

Speaker: Professor Carolyn Bertozzi, Stanford University, USA

Thursday 17 May 2018, 18.15, Spring Lane Building

More details on the events page.

This event is free to attend, ticketing details will be available soon.

Green Chemistry
Centre of Excellence

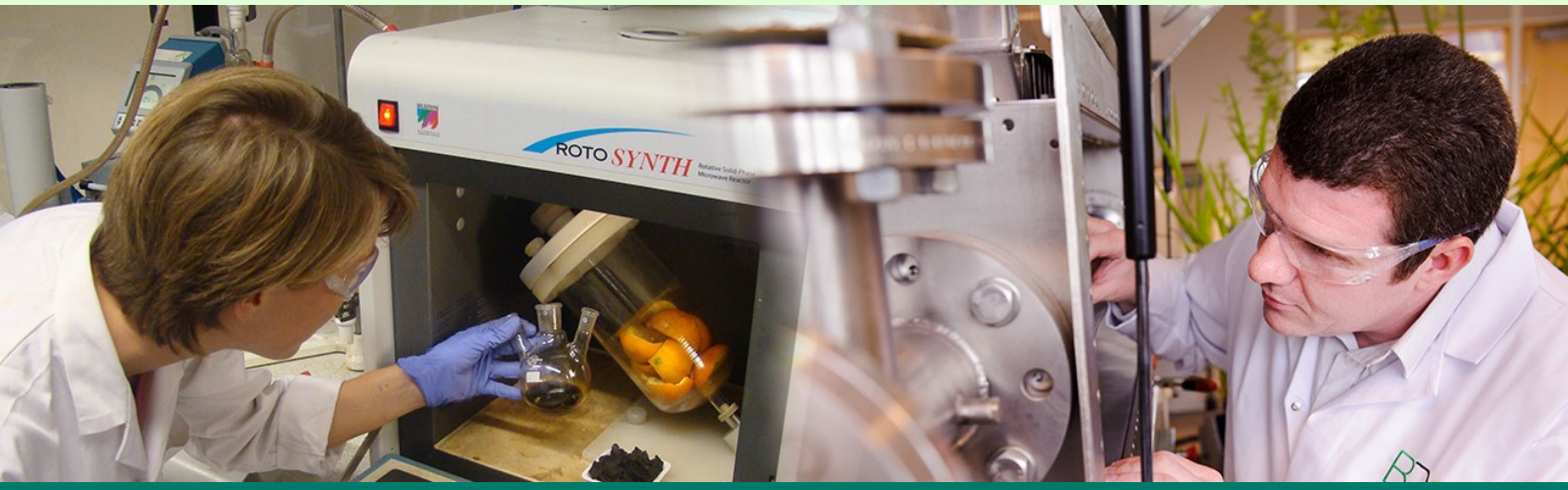
UNIVERSITY of York

Microwave Commercialisation Club Workshop

Taking microwave technology from the lab to industrial scale

Thursday 26th April 2018, 9.30am—4pm

Green Chemistry Centre of Excellence, Department of Chemistry, University of York



A free one-day symposium supported by the EPSRC Impact Acceleration Account (IAA)

The Microwave Commercialisation Club (MCC) is a multidisciplinary team including experts in microwave technology, chemical engineering, biomass chemistry and process management. Its aim is to support the transition of microwave technology into chemical and allied industries.

Confirmed Speakers

- John Robinson, University of Nottingham
- Jean-Paul Bernard, Sairem
- Stuart Dalrymple, C-Tech Innovation
- Mark Gronnow, Biorenewables Development Centre
- Stephen Roe, Advanced Microwave Technologies Ltd
- Jens Hoffmann, MUEGGE GmbH

We welcome proposals for short talks and posters

Who Should Attend?

- Microwave manufacturers
- Chemical and other manufacturing companies with an interest in green chemical manufacturing
- Food, agricultural and waste industries where biomass-rich waste can become valuable sources of renewable chemicals
- Energy companies in which biomass derived fuel sources are required to move towards more sustainable sources of fuel

Register your place for free by Monday 23 April 2018 at
https://mccworkshop.eventbrite.co.uk

Small travel grants are available—please contact alice.fan@york.ac.uk