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Calendar of Events

UCAS Interview Afternoons
Date: 2, 3, 5, 9, 10, 12 & 16 December
Time: 12pm - 4pm
Location: DS/008

Postgraduate Open Day
Date: Wednesday 4 December
Time: 1.15pm-5pm

Organic Symposium
Date: Wednesday 18 December
Time: 2pm - 5.30pm
Location: A/101

Date of Next Issue: 20th December 2013
Chemists Triumph in Green Gown Awards

The Department of Chemistry’s Green Chemistry Centre of Excellence emerged top in the Research and Development category of the annual Green Gown Awards which recognise exceptional sustainability initiatives in academic institutions. Judges praised the scale of the Centre’s links with industry and their contribution to promoting research and development with businesses across the Yorkshire and Humber region, nationally and internationally.

Dr Avtar Matharu, the Centre’s Deputy Director said: “This Award recognises our hard-fought efforts over ten years in developing, maintaining and enhancing the high quality provision of green and sustainable chemistry. We are aiming to enable a strategic step change to a knowledge-based, low carbon, biorenewable economy.”

The University was shortlisted for another two Green Gown Awards. Estates and Campus Services were finalists in the Carbon Reduction category with a project to minimise the amount of waste going to landfill. The introduction of mixed recycling and sending food waste for anaerobic digestion helped the campus reduce the amount of waste sent to landfill from 67 per cent to 10 per cent in one year.

A project to use more local fresh food on campus was a finalist in the Facilities and Services category. The project, managed by the University’s Commercial Services staff, reduced the University’s food miles by over 31,500 per year, reduced the number of food suppliers by over 16 per cent and cut food costs. Food complaints fell by 47 per cent and term time food sales increased by nearly ten per cent.

Now in their ninth year, the Green Gown Awards attracted 81 finalists from colleges and universities across the UK. The awards were presented by TV geologist Professor Iain Stewart.

Speaking at the awards ceremony, Professor Stewart said: “The Green Gown Awards are about celebrating a shift in thinking within the university and college sector to embrace those that are really pushing ahead with meaningful ways of making a future that works for all.”
York to Help Train Next Generation of Environmental Scientists

Two partnerships involving the University of York have received a share of £100m funding from the Natural Environment Research Council (NERC) to train the next generation of environmental scientists.

The Science and Universities Minister David Willetts recently announced £100M funding for 15 doctoral Training Partnerships (DTPs) from the Natural Environment Research Council (NERC). York Chemistry are involved in two of these DTPs:

- Leeds York NERC Doctoral Training Partnership (DTP) Site for PhD Training in Environmental Research—(SPHERES), in partnership with the University of Leeds
- Adapting to the Challenges of a Changing Environment—(ACCE), a consortium formed by the Universities of York, Sheffield and Liverpool and NERC’s Centre for Ecology and Hydrology

These DTPs aim to equip the next generation of environmental scientists with the skills necessary to understand the complex interactions within the Earth system. This enables them to contribute to the development of scientific and policy solutions to the problems we will face in the coming decades, on both national and global scales. Both the DTPs aim to develop confident and multi-skilled postgraduate students who can relate the science they undertake to business, policy, public needs and society. The training delivered through the partnerships will have an emphasis on generic skills such as entrepreneurship and commercialisation of research and will aim to address the environmental science skills gaps identified in NERC’s skills review 2012.

Science and Universities Minister David Willetts said: “This significant investment highlights the Government’s commitment to supporting postgraduate training and research in the environmental sciences. We’re dedicated to providing the next generation of environmental researchers with the necessary skills and training to succeed in academia and industry.”

Professor Brendan Keely, from the Department of Chemistry, said: “The ACCE DTP award to York and our partners enables us to train and develop the next generation of environmental scientists in a truly multidisciplinary environment encompassing chemistry, biology, ecology and archaeological sciences. The training, which is supported by a range of partners from industry, public bodies and NGOs, will equip them to access a wide range of career options that are of direct benefit to society and the economy.”
‘Missing Heat’ Discovery Prompts New Estimate of Global Warming

An interdisciplinary team of researchers, including York Chemists, say they have found ‘missing heat’ in the climate system, casting doubt on suggestions that global warming has slowed or stopped over the past decade.

Observational data on which climate records are based cover only 84 per cent of the planet – with Polar regions and parts of Africa largely excluded.

Now Dr Kevin Cowtan, a computational scientist at the University of York, and Robert Way, a cryosphere specialist and PhD student at the University of Ottawa, have reconstructed the ‘missing’ global temperatures using a combination of observations from satellites and surface data from weather stations and ships on the peripheries of the unsampled regions.

The new research published in the Quarterly Journal of the Royal Meteorological Society shows that the Arctic is warming at about eight times the pace of the rest of the planet. Previous studies by the UK Met Office based on the HadCRUT4 dataset, which only covers about five-sixths of the globe, suggest that global warming has slowed substantially since 1997. The new research suggests, however, that the addition of the ‘missing’ data indicates that the rate of warming since 1997 has been two and a half times greater than shown in the Met Office studies. Evidence for the rapid warming of the Arctic includes observations from high latitude weather stations, radiosonde and satellite observations of temperatures in the lower atmosphere and reanalysis of historical data.

A member of the Department of Chemistry at York, Dr Cowtan, whose speciality is crystallography, carried out the research in his spare time. This is his first climate paper.

Robert Way adds: “Changes in Arctic sea ice and glaciers over the past decade clearly support the results of our study. By producing a truly global temperature record, we aim to better understand the drivers of recent climate change.”

Sir John Holman at the General Assembly of the RSC

Sir John Holman gave the opening keynote address at the General Assembly of the Royal Society of Chemistry in Brighton on November 8th, on the theme of Technical Skills in Chemistry. John also presented the first-ever RSC Technician Awards at a glitzy Awards dinner that evening.
York Hosts CO$_2$Chem meeting on Applications of Cold Plasma to CO$_2$ Chemistry

CO$_2$Chem is the EPSRC funded grand challenge on utilizing carbon dioxide as a chemical feedstock and transforming the chemicals industry. Professor North is joint director of CO$_2$Chem and on 13 November he organised a one day meeting on application of cold plasma to CO$_2$ chemistry. The meeting took advantage of the fact that the EPSRC national centre for cold plasma research is based in York, immediately opposite the chemistry department.

The meeting was attended by 31 delegates, including European delegates from Belgium and the Netherlands, and featured main lectures from York and Differ (the Dutch institute for energy research). Shorter lectures were also given by delegates and there was ample time for networking.

Cold plasma has the potential to be a very energy efficient way of activating carbon dioxide and in particular converting carbon dioxide into carbon monoxide. Delegates heard about different ways of generating cold plasmas and the results of studies into carbon dioxide activation.

Baby Girl for Sam Hart

Sam Hart (YSBL) is now the proud father of a daughter, born on 11 November.
Professor Pratibha Gai received the L’ORÉAL-UNESCO Award for excellence in the physical sciences as the 2013 European Laureate in 15th annual For Women in Science Awards a few months ago in Paris. Her research (along with other Laureates’ work) was exhibited on the Champs Elysees in Paris (a rare honour!).
York Paper Receives Editorial Comment in Chemistry Journal


Murphy International Scientific Meeting on Heterotic Computing

Dr Angelika Sebald, Dr Viv Kendon and Professor Susan Stepney organised the recent Theo Murphy International Scientific Meeting on Heterotic computing: exploiting hybrid computational devices Royal Society Conference at Chicheley Hall, home of the Kavli Royal Society International Centre, Buckinghamshire as part of the Theo Murphy on Thursday 7 - Friday 8 November 2013.


Professor Richard Taylor’s Lectures

Professor Richard Taylor has been busy with external lectures recently. In late September he gave a lecture entitled "Tandem/Telescoped Approaches to Heterocyclic Scaffolds" at the Lilly pharmaceutical company in Ascot. Then in October, Richard gave a plenary lecture on heterocyclic natural product synthesis at the Society of Chemical Industry meeting on New Aspects of Heterocycles, held in the London Transport Museum. Later in October he gave an RSC Award lecture at the University of Newcastle (Adventures in Natural Product Chemistry) and in early November presented an invited research colloquium at the University of Cork in Ireland.

Suggestion Box

Reminder: there is a Suggestion Box located next to the pigeon holes in the foyer of A Block and one outside Room K167 for YSBL staff. Suggestions from staff are most welcome. All suggestions are discussed at the departmental communications meeting.
Interview with Dr Andy Goddard

Sometime in the mid 90s I started my career here in York studying Chemistry. During my time as an undergraduate I worked in teaching labs in the summer, allegedly as a lab tech, but mostly to pass messages between Dave L and Dave B. I obviously wasn’t put off Chemistry or York and carried on to complete a PhD with Duncan Macquarrie in Sulphur based fire retardants. During the later stages of my PhD I became more interested in analytical techniques which led me to take a postdoc position in Birmingham, and subsequently Rennes, with Ian Smith and Ian Sims. This research was studying gas kinetics and chemical physics in the gas phase at low temperatures (down to 7K). During this postdoc I decided I was better at, and more interested in, designing and building experiments than actually collecting data. This decision led to me taking a number of postdoc positions in the School of Chemistry, University of Leeds designing, building and writing control software for Atmospheric Chemistry experiments for Mike Pilling, Dwayne Heard, John Plane and Paul Seakins. These projects included a pulsed Laval nozzle apparatus to study gas kinetics down to 70 K; a 2.25 m³ atmospheric simulation chamber (HIRAC) and an OH radical lifetime measuring equipment, including building the shed to put this laser based experiment together in while in Cape Verde.

After returning from shed building in Cape Verde, I started work as an Experimental Officer with responsibility for mechanical and electronic workshops, still in the School of Chemistry, University of Leeds. This work allowed me to work across all areas of Chemistry, offering automated solutions to data collection and analysis, leading to publications from Applied Optics and to Astrobiology. Following a number of retirements, and not ducking fast enough, I became the General Manager (Operations Manager) of the School of Chemistry.

When I came back from Rennes I had moved back to York and commuted to Leeds for ten years, but with the pressures of a young family I decided I would like to work closer to home, and secured the position of Research Facilitator here in York. Since moving back to York from Rennes we moved around South Bank a few times before ending up in Bishopthorpe in 2008 which is where I still live with my wife Pip and kids Bethan and Patrick. Outside of work I still like to do some rock climbing and mountain biking when I can, though most weekends and evenings are full of kids parties and swimming lessons.
Interview with Dr Terry Dillon, Lecturer in Physical Chemistry

Dr Terry Dillon arrived here after 12 years working overseas, largely in Mainz, Germany. “It was a fantastic experience for me to live abroad, and one that lasted a whole lot longer than I ever anticipated. I leave my heart and more importantly my season ticket in Germany, where the mighty Mainz 05 have been working miracles in recent years. I hope Yorkshire can provide some consolation when the cricket season gets underway.”

Terry grew up in Kent, before starting a life in chemistry at the University of Oxford “I was lucky to go to a really good state school, where there was something of a tradition of sending students on to top universities. The school was also put me in touch with a sponsor: I spent my summers synthesising novel aromachemicals at a (pretty smelly) industrial site near Ashford. We had a go at everything from CK1 to Toilet Duck. The firm has since gone through several changes of ownership, but I was delighted to learn that they offer MChem project placements to York students.”

For a while Terry was something of a chemistry all-rounder, with a foot in both physical and organic camps. It was in the 4th year of MChem however that he was properly introduced to experimental atmospheric chemistry. “It was pretty old-school. We were taught to glass-blow our own apparatus: lots of vacuum lines, oily pumps, and mercury sloshing around! It was however the best training for an experimentalist, and without doubt the most educational experience of my life.”

On to a preliminary taste of Yorkshire: four-years at the University of Leeds for a PhD, “I remember coming North as something of a culture shock. The people of Leeds are a doughty lot however, and they soon got over it!” Terry’s training continued apace, and it was at Leeds that he first used lasers to study atmospheric reactions. It was this experience of lasers that led to the opportunity to move to Germany, and a research fellowship at the Max Planck Institute for Chemistry in Mainz. “The fellowship was a great opportunity to concentrate on research, free from the demands of teaching, and real-life in general. Life in Mainz was good – it’s a similar city to York in many ways.” Terry’s research is at the interface of physical and atmospheric chemistry; using lab-based photochemistry and kinetics techniques to tackle a variety of atmospheric chemistry problems. “Work on halogens and organics oxidation will continue now in York. It’s a bit like coming full-circle, as my MChem way back in the 1990s was on a similar topic. Our understanding has improved a fair bit since then!”

Terry has been desk-hopping around the department since arriving at the start of October, seen variously in the chemistry hub and in A-block. “It was a great way to meet as many people as possible, but I’m now happily settled into my office in the new Wolfson Atmospheric Chemistry Building. Feel free to drop-by”.
Second International Conference on CO$_2$ as Feedstock for Chemistry and Polymers

Professor Mike North gave an invited lecture and chaired a session at the Second International Conference on CO$_2$ as Feedstock for Chemistry and Polymers held in Essen from 7 to 9 October. This was the first conference Professor North attended as an employee of the University of York having only been in post for one week, and as the photo shows he was keen to ensure that his new post was clearly displayed on the slides.

This conference is unusual in attracting a predominantly industrial audience with most delegates coming from the European chemicals industry. There was also a good representation from journalists and even a delegate from the Dutch embassy. The meeting led to a number of new potential collaborations at least one of which is already being actively pursued.

Generous Donations Boost Launch of the Guy Dodson Fund for Structural Biology Research at York

Novo Nordisk A/S provides substantial support for structural biology PhD studentships at York, via the Guy Dodson Fund. The Guy Dodson Fund was launched following a memorial symposium held in York in June 2013 to celebrate the life in science of Professor Guy Dodson FRS (13 January 1937–24 December 2012). The fund aims to nurture the continuing strength of York’s structural biology research by providing bursaries to PhD students and supporting the development of students and postdoctoral researchers in this area.

Danish pharmaceutical company Novo Nordisk, a long-time collaborator of Guy Dodson and YSBL, has kick-started the fund with a substantial donation which will support PhD studentships. Ex-colleagues, collaborators and friends of Guy from around the world have also made generous contributions to the Fund.

An inspirational scientist, Guy Dodson carried out ground-breaking work in protein engineering and structures of insulin derivatives, and on the structure and mechanism of enzymes. With his wife,
Professor Eleanor Dodson, Guy created an influential protein structure research group at York, establishing the York Structural Biology Laboratory (YSBL) as a major research unit in the Department of Chemistry.

For further information please contact Professor Roderick Hubbard. To donate, please complete the form at: http://www.york.ac.uk/media/chemistry/news/Gift_form_Guy_Dodson_Funda.pdf

Drying Solvents, by Emma Dux

New Starters

Dr Margot Wenzel, Postdoctoral Research Associate
Extension No: 2584; Room: E114; Email: margot.wenzel@york.ac.uk

Mr Liang Wu, Postdoctoral Researcher in YSBL
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Children Challenging Industry in Hertfordshire

25 of Johnson Matthey’s finest chemists, engineers, marketing and HR personnel gathered in Autumn 2013 to become CCI ambassadors and learn how to design an effective site visit for 10-year olds. After dabbling in some of CIEC’s primary science activities, they began planning their site visits, which they will offer to five local schools before July 2014. A further four schools will be lucky enough to have visits from ambassadors. Clare Warren, the newly appointed Advisory Teacher for the region, has started carrying out the programme in classrooms, and will use activities from the CIEC resources Kitchen Concoctions, Runny Liquids and A Pinch of Salt*, to tell the story of catalyst manufacture at a level suitable for primary children. As is best practice within CIEC, this story is set firmly in the National Curriculum for science, tackling ‘working scientifically’ (Science Enquiry) as well as taking a look at properties of materials.

♦ For more information, visit http://www.cciproject.org/topicBank/topicBank.htm

Right: Johnson Matthey employees at Royston, Hertfordshire, enjoying doing the Children Challenging Industry activity Kitchen Concoctions

Professor Dave Smith and Tunde Okesola in Malta

In November, Professor Dave Smith and PhD student Tunde Okesola attended a conference in Valletta, Malta on ‘Supramolecular Chemistry in Water’ as part of European COST network CM1005. Dave gave a plenary lecture, while Tunde gave a flash talk (his first conference presentation) and a poster. Both talks went well, and Dave & Tunde enjoyed the interesting science, warm climate and Maltese hospitality.
Solvent Purification Machines get an Upgrade

The Department's solvent purification machines in D-block have recently been fitted with fireproof cabinets and smaller solvent reservoirs. The cabinets were made by Trionyx in France in conjunction with Innovative Technology, the manufacturers of the solvent system. These changes will further enhance the safety features of the machines. Naser Jasim and Graeme McAllister spent a considerable amount of time designing and sourcing the upgrades (Graeme is pictured with one of the upgraded systems).
Opening of the Wolfson Atmospheric Chemistry Laboratories

The atmospheric group has moved into the Wolfson Atmospheric Chemistry Laboratories, that we are calling WACL for short (said as WACK-L). There were a few delays, with people packed and ready to go, but we are getting settled now and the labs are taking shape.

This building brings together the five atmospheric academics in one place, along with staff from the National Centre for Atmospheric Science, PDRAs and PhD students with over 30 people housed there. The move has provided us with lots more lab space, including a workshop, clean lab, a dedicated calibration lab and more storage (you will notice the removal of our many flight cases from A-block corridors). The main lab will house our instrumentation for gases and aerosols, including over 20 spectroscopic, chromatography and mass spectrometry instruments (including Prof. Lewis’ new “baby” – the GC-Q-TOFMS) and an atmospheric simulation chamber. It also has flexible space to house our portable instrumentation that gets sent off into the field. Currently we have kit on the way to Guam and Malaysia and on the way back from the Falklands. We have a dedicated meeting room that can hold 30 people in its “lecture” format, which has already been used to house a number of meetings including a workshop on ozone networks, a Q-TOF training workshop held by Anatune and weekly video conferencing with the Cape Verde Atmospheric Observatory.
F-Block Progress

The roof-mounted fume cupboard stacks were craned into position on 25 November.
Opening of the New Electronics Workshop

The brand new electronics workshop opened on Friday 22 of November. There were surprise appearances by celebrity soundalikes of Bill Gates and Jason Donovan at the opening. Bill announced to the crowd “Hi this is Bill Gates and I’d just like to welcome you to the new electronics workshop in the chemistry department. I love the fact it comes with windows as standard”.

Photos below show the workshop in 2010 when Roy was in charge and how it looks now.

2010 Electronics Workshop

New Electronics Workshop
Simple tips on being more Green

- Switch off equipment - “Leaving a single computer and monitor switched ‘on’ for 24 hours-a-day will cost over £50 a year. Switching it off and using ‘stand-by’ features when you are not using it could reduce this to £15 a year. Doing this may also prolong the lifespan of the equipment.” (Carbon Trust - www.carbontrust.co.uk)

- If you are the last one to leave, turn all the lights off.

- If computers have to be left on over night, check if the monitor can be turned off.

- Before ordering more chemicals/stationary from stores, ask colleagues to see if they have any extra or spare that they can give you.

We will be audited in March - please join our team!
(this is an on-going project)

For more information on the scheme go to http://www.green-impact.org.uk/about/
What can be recycled?

YES PLEASE!
ALL PAPER inc ENVELOPES
ALL PLASTICS inc CARRIER BAGS,
CRISP PACKETS,
CHOCOLATE/SWEET WRAPPERS/BAGS,
PLASTIC BOTTLES & CUPS,
FOOD PACKETS inc CARD & PLASTIC, FOIL
ALL CARDBOARD CARDBOARD CUPS
CARTONS inc TETRA PACKS
TOILET/KITCHEN ROLL INSERTS
ALL TINS inc EMPTY CANS & AEROSOLS

Questions? Email nick.abbott@york.ac.uk

NO THANKS!
FOOD WASTE (look for an orange food bin or a caddy)
GLASS (Glass bin in D Block coffee room)
HAZARDOUS WASTE
ANYTHING WITH A PLUG (contact Facilities help desks)
PRINTER CARTRIDGES (contact York Print Plus)
BATTERIES (look for nearby battery bin)

If in doubt, don’t chuck it out! Put it in the recycling bin......