

Chemistry Update

Newsletter 290, 27th October 2017

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Calendar of Events

Physical Seminar

Speaker: Professor Matthew Johnson, University of Copenhagen
Date: Wednesday 1 November
Time: 4pm—5pm
Location: C/B101

2017 RSC Organometallic Chemistry Award Lecture

Speaker: Professor Bill Jones, University of Rochester
Date: Thursday 2 November
Time: 12pm—1pm
Location: C/A101

Inorganic Seminar

Speaker: Dr Jose Goicoechea, University of Oxford
Date: Wednesday 15 November
Time: 1pm—2pm
Location: C/A122

Postgraduate Study Event

Date: Wednesday 15 November
Time: 2pm—4.30pm
Location: C/B101

Dial-a-Molecule 3D Space One-Day Meeting

Date: Friday 17 November
Time: 9am—5pm
Location: C/B101 & C/B102

Green Chemistry Seminar

Speaker: Dr Jason Hallett, Imperial College London
Date: Friday 17 November
Time: 3pm—4pm
Location: C/F106

Green Chemistry Seminar

Speaker: Professor Mark Waterland, Massey University
Date: Monday 20 November
Time: 3pm—4pm
Location: C/F106

Green Chemistry Seminar

Speaker: Dr. Jesús Arauzo, University of Zaragoza
Date: Tuesday 21 November
Time: 4.30pm—5.30pm
Location: C/F106

Organic / Careers Seminar

Speaker: Dr Mark Boys, Array Biopharma
Date: Wednesday 22 November
Time: 1pm—2pm
Location: C/A101

Critical Elements Day Symposium

Date: Thursday 23 November
Time: 9.30am—4pm
Location: C/F106, GCCE

Date of Next Issue:
24th November 2017

Food Flavour on a Molecular Scale

Dr Seishi Shimizu, in collaboration with Professor Steven Abbott of TCNF Ltd and Professor Matubayasi of Osaka University, has been measuring how much vanilla, almond or lemon flavour is bound to food macromolecules, which is crucial to understanding food flavour and aroma.



For many decades, experimental data on flavour-food binding was analysed using chemical equations even though the dynamic and fluctuating nature of binding cannot easily be simplified in this way.

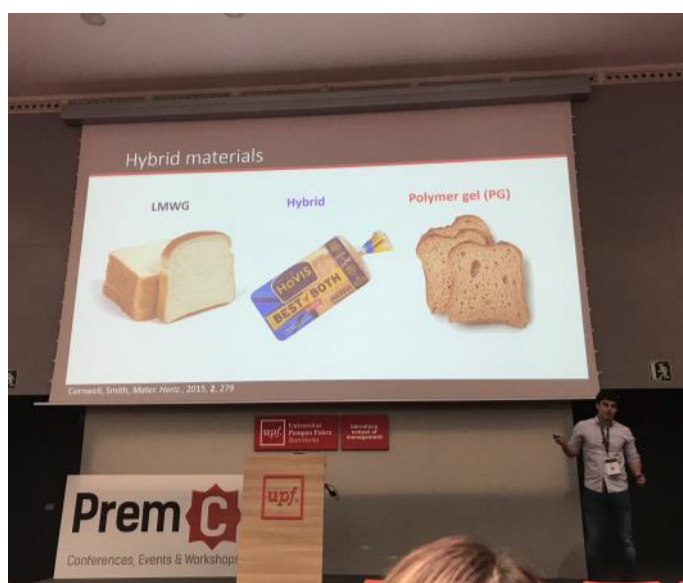
Starting from the fundamental laws of statistical thermodynamics and [fuelled by tea and coffee](#), Dr Shimizu and Professor Matubayasi wrote down a theory that can be used to capture such non-specific aroma-food interactions.

Professor Steven Abbott of TCNF Ltd. turned their theory into a web-based app so food scientists can calculate food-aroma interactions simply in the lab using their phones and tablets.

Dr Shimizu said “It is gratifying to see how theory, developed only by pen and paper, is still so powerful in solving fundamental questions on food.”

Their review, “[Quantifying non-specific interactions between flavour and food biomolecules](#)” has been featured as the front cover image of *Food & Function*, published by the Royal Society of Chemistry.

ICONAN 2017



In September, Phill Chivers, PhD student in the DKS Group gave an oral presentation at ICONAN 2017, the International Conference on Nanomedicine and Nanobiotechnology in Barcelona, Spain. In his talk, he explained his recent research on photopatterned hybrid hydrogels for drug delivery and tissue engineering. Phill's unique approach to hybrid gels combines the best of polymer gels and self-assembled low-molecular-weight gels into a single photo-patterned material. In his recent paper (*Chemical Science* 2017, 9, 7218), he demonstrated that he could achieve directional drug release from these hybrid materials - results he presented in his well-received conference talk.

Science Down Under

Dr Annie Hodgson recently accompanied five talented A-level science students to attend the 39th International Science School (ISS) in Sydney, Australia.



The [ISS](#) is a two-week celebration of science held every two years at the University of Sydney. Students are invited to attend from China, India, Japan, New Zealand, Thailand, the UK and USA, joining their fellow scholars from across Australia.

Lectures are delivered by world-leading scientists, complemented by a range of activities covering all branches of science. This year the main theme was “Future Power”; looking at greener and cleaner ways of keeping our increasingly technology-driven lives going through the 21st century.

The students from across the world made firm friendships as they worked and played together in teams led by enthusiastic and energetic former ISS scholars. There were opportunities to go sight-seeing in and around Sydney, including a truly memorable night0time Sydney Harbour cruise with a dinner and disco.

Annie said “It was an honour to be invited to accompany these wonderful young people and to share their adventure in such an amazing city.”

The next ISS will take place in July 2019, when the participants will be celebrating 50 years since the first manned moon landing.

Top-Level Library Design Award

Dr Will Unsworth, Leverhulme Trust Early career Research Fellow has been awarded the highest monetary incentive from the European Lead Factory.



He received the award for the library he designed based on cyclic peptide mimetics.

Will said “For a relatively new research group such as ours, the European Lead Factory represents a fantastic opportunity to see the molecules prepared in our synthetic projects make a genuine impact in medicinal chemistry.”

“To know that our products may one day contribute to addressing some of society's major health problems like cancer or antimicrobial resistance, is extremely satisfying and exciting.”

To read the full story, visit https://www.europeanleadfactory.eu/results/news/?news_uid=1334

New Starters

Liam Clark, Laboratory Technician in the Biorenewables Development Centre
Extension: 8053; Email: liam.clark@york.ac.uk



Dr Jon Agirre, Royal Society Research Fellow
Room: B/K/264; Extension: 8253; Email: jon.agirre@york.ac.uk

Dr Thomas Attard, Green Chemistry Research Associate
Room: C/F111; Extension: 4547; Email: thomas.attard@york.ac.uk

Fiona Shaw, Research Support Officer
Room: C/A134 ; Extension: 2602; Email: fiona.shaw@york.ac.uk

Dr Stephen Metcalfe, PDRA in Computational Methods for Structural Biology
Room: B/K264; Extension: 8270; Email: stephen.metclafe@york.ac.uk

Dr Jim Brannigan, PDRA
Room: B/K/270; Extension: 8276; Email: jim.brannigan@york.ac.uk

O'Brien Group News

European Symposium on Organic Reactivity, Durham, September 2017

Dr Kevin Kasten and Adam Islip from the organolithium team represented the group at this meeting, held at Durham University. Kevin presented a poster on his latest results and Adam gave a short talk as a culmination of his PhD studies.

Industrial Lecture at Lilly

Professor Peter O'Brien recently gave an invited industrial research lecture at Lilly entitled "Exploring 3-D Pharmaceutical Space: New Routes to Nitrogen, Oxygen and Sulfur Heterocycles".

Royal Society of Chemistry Heterocyclic and Synthesis Group 32nd Postgraduate Meeting and 50th Anniversary Celebration, Burlington House, London

In his role as Chairman of the RSC Heterocyclic and Synthesis Group, Peter attended the 32nd postgraduate meeting, which was held at the RSC headquarters in London. It was a wonderful day's chemistry with several current and past York students and staff in attendance. It was also the group's 50th anniversary and a number of the ex-Chairs of the group (including our own Professor Richard Taylor!) joined in the festivities.



Peter and the current secretary of the group, Dr Sharon Rossiter, with the poster and talk prize winners on the day.

EPSRC Synthetic Chemistry Academic-Industrial Ideas Exchange, Imperial College

Peter recently represented the synthetic organic chemists at York by participating in an EPSRC workshop organised as part of the Dial-a-Molecule grand challenge.

KMS Seminar & Year 2 Graduate Poster Competition

The KMS Prize Winners' seminar took place on 4 October and was very well attended by students and staff.

The four winners of the KMS competition delivered excellent talks on their research and were presented with certificates by Professor Tony Wilkinson who sat on the KMS panel. Winners and their talk titles were:

Oliver Bayfield (AAA): Cryo-electron microscopy of a thermophilic virus

Aimee Clarke (RJKT): Synthesis of spirocycles using silica-supported silver catalysis

Lewis Hall (JMS/JML): Electrophilic fluorination of organometallic fragments

Richard Spears (MAF/PAOB): Organocatalyst mediated bioconjugation of proteins

The event was combined with a poster session for PhD students entering their second year. The session provides an opportunity for students to share their research with the rest of the Department and 37 posters were on display. The poster session was really well attended, with lots of discussion taking place. People were asked to vote for their favourite poster and the winner was:



Tom Stephens (WPU/MAF/PAOB)

Poster title:

Synthesis of Cyclic Peptide Mimetics via the Successive Ring Expansion of Lactams

Congratulations to all the winners and thanks to everyone involved including the KMS panel and all those who attended the seminar.



KMS Winners left to right:

Oliver Bayfield, Aimee Clarke, Lewis Hall, Richard Spears with Professor Tony Wilkinson

TechYork



TechYork, a network for technicians at the University of York aimed at encouraging cooperation and collaboration between technicians across the campus, has a new Twitter account - @UofYTechs.

Please follow us for updates on TechYork events and technician news.

[#techniciansmakeithappen](#)

Clarke Group News

We welcome **Nikolaos Vagkidis** who joins the group to study for an MSc(Res) into the scope of organoaminonitrile catalysts.

We also congratulate **Andrew Steer** who successfully defended his thesis in his viva on 13 October. Andy worked on the prebiotic genesis of 2-deoxy-D-ribose:

<https://www.chemistryworld.com/news/carbohydrates-promoted-in-new-prebiotic-theory/3007970.article>

STEM Jobs for the Girls

On Thursday 5 October, I had the excitement of visiting RAF Leeming to represent the Department of Chemistry at a special event promoting women in science. STEM Jobs for the Girls was organised by the Richmond and Dales branch of Soroptimist International. “Soroptimist” means “best for women” and this worldwide voluntary organisation strives to “transform the lives and status of woman and girls through education, empowerment and enabling opportunities”, helping women to reach their fullest potential.

The event was a combination of a series of lectures for teachers, parents and school governors; hands-on science, technology and engineering workshop activities for Year 9 girls; and an exhibition showing the range of STEM (Science, Technology, Engineering and Mathematics) opportunities available for young people, which was open to all. The lectures were delivered by Helen Wollaston from WISE (the campaign for gender balance in science, technology and engineering) and people from a range of industries employing scientists and engineers.

I ran a joint stand with Katherine Leech from the Department of Physics. We had a range of hands-on activities encompassing part of the electromagnetic spectrum, from infrared to ultraviolet. We talked about the practical applications of the different bands of wavelengths; the infrared camera was a particular hit with the visitors.

It was great to see so many female scientists, engineers and RAF officers in one place, providing positive role models for the girls. Let’s hope that this experience has planted a seed in the minds of these young women, so that they will choose to pursue their dreams – and what could be better than a career in STEM.

- Annie Hodgson



Thinking, Doing, Talking Science

CIEC (Centre for Industry Education Collaboration) has been working on the roll-out phase of an Educational Endowment Fund supported programme developed by Oxford Brookes. The research (randomised control trial) from the initial pilot showed significant progress in primary children's progress in science and we are now working on the roll-out phase to see if the results can be replicated on a larger scale. We are working with schools in Teesside and Lincolnshire.



Each school receives 4 days of training over the course of a year. Last year we worked with schools in the intervention group. This year we are working with schools in the control group whose children took the same test last summer as those in the intervention group but who have not had access to the training until now!

The project aims to promote higher order thinking skills and rich discussion. This is partly achieved by providing lots of opportunities for exciting practical lessons and demonstrations which support the children to ask, and answer, their own questions. For example, children are surprised when they are shown how different liquids such as honey, oil, washing up liquid and water can be layered on top of each other, prompting them to think about the density of different materials.

A second strand of the project aims to pose open ended questions for children to discuss such as "Where does a candle go when it burns?" or "Which is the odd one out (and why) out of paper, water and chocolate?". Questions such as these can be accessed on a variety of levels from ten-year-old children to colleagues in the Department of Chemistry! They also have a large number of "right" answers. They are consequently particularly valuable for sparking deep thought and discussion.

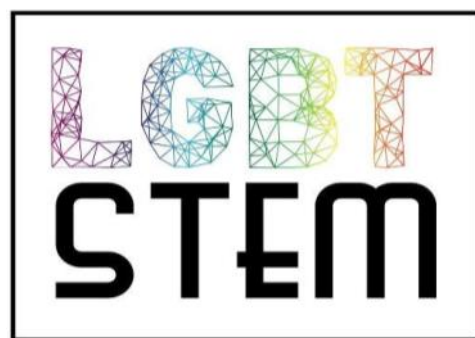


Registration Open for LGBT STEMinar 2018

We are excited to inform you that registration is now open for the 3rd LGBT STEMinar which will be held here in York on 12 January 2018.

The LGBT STEMinar is a one-day research meeting designed for people who work or study in STEM subjects and identify as LGBT+.

We aim to use the day to showcase work from diverse fields and to encourage collaborations between different departments, universities, companies and subjects. We also welcome those who may not identify as LGBT but wish to discover and support the work that LGBT+ people are doing.



The event is free to register and attend due to the generous sponsorship of a number of organisations including the Department of Chemistry's Equality and Diversity Group, which is a platinum sponsor. The event will be hosted at the National STEM Learning Centre located here on the West Campus.

The day will consist of a series of research talks, a poster session, a session focusing on outreach and diversity issues, stalls for our sponsors and other networking opportunities. We have two fantastic key note speakers confirmed:

Dr Beth Montague-Hellen (alumnus of York, Bioinformatics MSc 2004) founder of the LGBT STEMinar and LGBT in STEM blog who was recently nominated for a Gay Times Honour for Excellence in STEM.

Professor Tom Welton FRSC, Dean of the Faculty of Natural Sciences at Imperial College London, Professor of Sustainable Chemistry and champion of inclusivity and diversity.

We are also looking at ways that we could encourage attendance by teachers from within STEM to come and meet positive LGBT role models and expand their own experience of cutting edge STEM research, which they can take back to the classroom.

For more information or to register, please see the [LGBT STEMinar blog](#), or alternatively contact Leonie Jones or Derek Wann if you would like to get involved.

- Follow along on Twitter using the hashtag #LGBTSTEMinar18
- Registration Deadlines: Talks - 31 October 2017; Posters - 30 November 2017
- Final registration deadline for attendees: 15 December 2017

Using Doodle in the Department of Chemistry

The Google Working Group has outlined the following guidelines for using Doodle in the Department.

Doodle is a meeting scheduling tool. It helps you to easily establish the availability of attendees, and see at a glance which timeslot(s) will suit the most people.

All staff and students have access to the University branded version of Doodle. This version features the York logo at the top and doesn't have adverts. You can access this version using the following link: <https://uniofyork.doodle.com>.

Helpful Hint

By linking the University of York's Doodle to your Google Calendar, Doodle will 'pencil' events into your calendar as 'tentative' appointments to prevent you being accidentally double booked before a meeting date is confirmed. When the poll is closed, the confirmed date will be marked as such, and the tentative events will be automatically removed.

How to link Doodle to your Google Calendar

Follow the short step-by-step instructions on the IT services website for how to register for an account and then link Doodle to your University of York Google Calendar:

<https://www.york.ac.uk/it-services/services/doodle/#tab-2>

Helpful Hint

Look for the University of York's logo at the top of Doodle poll pages. This lets you know that you are logged in and that the dates you accept will show in your linked calendar. If the logo is missing, then log in through <https://uniofyork.doodle.com/> before clicking on a link to the poll.

Updated 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](#).

Green Impact

Drinking Water

There is drinking water available in the Chemistry Foyer outside C/A101 and in the Student Common Room in B Block.

Please use reusable bottles, glasses or mugs wherever you can instead of the plastic cups to reduce plastic waste.



Car Sharing—Why?

uniliftshare

There are numerous benefits to car sharing for journeys in general and in particular to the University:

- Save money (typically around £1000 per year!) by sharing your travel costs
- Find a space with ease... priority parking is available in designated car share spaces (currently at Vanbrugh College)
- Congestion and pollution levels in and around York are reduced
- Meet new people
- Save wear and tear on your car as you only use it half the time
- Sit back, relax, and let your “chauffeur” take the wheel and bring you to campus. Return the favour the following day!
- Cheaper University of York car parking permit

For more information please see <http://www.carshareyork.com>.

Reduced Price Parking Permits!

Parking Permits are only £30 per year for those who car share! (2 or more people must be in the car).

Part-time parking permit – reduce your parking permit charges by only travelling a certain number of days per week by car, cycling the other days.

Please see the following link for more information:

<https://www.york.ac.uk/staff/travel/cars-parking/>

Staff Parking Permits > Part-week permit and Car Share Permit

If you have any questions about applying for a permit or would like some help, please visit the Security and Parking Helpdesk in the Information Centre.

You can also email parking-permits@york.ac.uk.

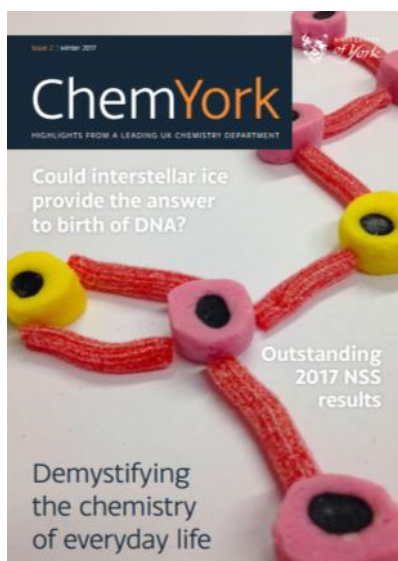
Enterprise Car Club



Only need a car occasionally? We have an Enterprise Car Club bay in the Information Centre car park, with other locations available within walking distance of campus.

[Join the Enterprise Car Club](#) (quote YST301 to receive your first year's membership half price).

ChemYork Winter Edition 2017



The second edition of our ChemYork external magazine page is now available:

<https://www.york.ac.uk/chemistry/news/chemyork-ext-mag/>

This issue includes recent prizes, high impact news stories, student research, how we're celebrating 10 years of Athena SWAN Gold and interviews with Professor Andy Parsons, who talks about his 'Exploring Everyday Chemistry' MOOC and Helen Burrell, who tells us how she managed to balance work, study and family life whilst gaining her Natural Sciences degree.

We encourage you to share this magazine with any industry, business, education, etc. links that you may have.

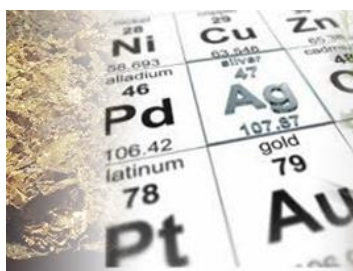
Critical Elements Day

Solutions to the Challenges of Matching Increasing Demand

Thursday, 23 November, 9.30am—4pm

Green Chemistry Centre of Excellence, Department of Chemistry

A free symposium on recovery of elements from waste streams, featuring research highlights from the G8 Phytocat project, which studied the use of plants to extract metals from mine tailings.



Speakers include:

- Chris Anderson, Massey University
- Andrew Hunt, Khon Kaen University
- Piat Piatkiewicz, Non-Ferrous Alliance
- Ian Fairlamb, University of York

Register your place for free by Monday 20 November 2017 at

<http://criticalelementsday.eventbrite.co.uk>