

Chemistry Update

Newsletter 297, 23 May 2018

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Calendar of Events

Departmental Seminar (RSC) Speaker: Dr Nicholle Bell, University of Edinburgh Date: Wednesday 30 May Time: 1pm—2pm Location: C/B/101

Beacon Diversity Lecture Celebrating 10 years of Chemistry Athena SWAN Gold Speaker: Dr Vanita Sundaram, Dept. of Education, University of York Date: Wednesday 6 June Time: 1pm—2pm Location: C/B/101

JEOL Postdoc Poster Competition Date: Thursday 7 June Time: 10am—1pm Location: C/A/122

Inorganic Seminar Speaker: Dr Charles O'Hara, University of Strathclyde Date: Wednesday 13 June Time: 1pm—2pm Location: C/B/102

CHyM Seminar Speaker: Dr Goran Angelovski, Max Planck Institute for Biological Cybernetics Date: Friday 15 June Time: 1pm—2pm Location: C/B/102

Green Chemistry Seminar Speaker: Dr Magdalena Titirici, Queen Mary University of London Date: Monday 18 June Time: 2pm—3pm Location: C/F/106

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Green Chemistry Seminar

Speaker: Dr Apostolis Koutinas, Agricultural University of Athens Date: Wednesday 20 June Time: 4pm—5pm Location: C/F/106

Roger J Mawby Demonstrating Prize Date: Tuesday 26 June Time: 4pm—6pm Location: C/B/101

All Staff Meeting followed by Celebration Event Date: Wednesday 27 June Time: 3pm—5pm Location: C/A101 followed by C/B102

TechYork Summer 2018 *Theme: Science and Technology on the Big Screen* Date: Thursday 28 June 2018 Time: 10am—3pm Location: Theatre, Film & Television *Lunch provided; look out for Eventbrite invites to register*

University Open Days Dates: Friday 29 June & Sunday 1 July Time: 9.15am—4pm

Chemistry Research Forum Date: Friday 29 June Time: 12pm—2pm Location: C/F/106

Date of Next Issue: 29 June 2018

York Chemists Win Prestigious Royal Society of Chemistry Awards

Three York Department of Chemistry academics have been recognised for their contribution to chemistry.

The Royal Society of Chemistry's annual prizes and awards recognise achievements by individuals, teams and organisations in advancing the chemical sciences. Each year's winners follow in the footsteps of some of the most influential and inspiring scientists in the world.

Dr William Unsworth, Professor Simon Duckett and Professor James Clark have been recognised for their achievements and contribution to chemistry.

Dr William Unsworth - Royal Society of Chemistry Hickinbottom Award winner for 2018

Dr Unsworth develops new ways to make two important classes of organic materials known as 'macrocycles' and 'spirocycles'. Both have high value in various applications, most notably as medicines and crop-protection products, but both are difficult to make using existing methods, which can serve as a barrier to their use. New, practical ways to access these materials more easily are therefore of high importance, as they can help enable the discovery of new drugs and other technologies that can ultimately benefit society.



Dr Unsworth said:

"I am honoured and humbled to have been chosen to receive the 2018 RSC Hickinbottom award. The list of previous winners features many of the greats of UK Organic Chemistry, several of

whom are genuine personal heroes of mine, and I couldn't be happier to be following in their illustrious footsteps. I am very grateful to the RSC and everyone on the awards committee and I'm really looking forward to sharing some of research on macrocycle and spirocycle synthesis during the lecture tour."

The Hickinbottom Award is awarded for creativity in the development of new methods for the synthesis of functionalised macrocycles and spirocycles. Dr Unsworth receives £2000 and a medal, along with the Briggs Scholarship, which awards £4000 to support one of Dr Unsworth's research students. He will also complete a UK lecture tour.

Professor Simon Duckett - Royal Society of Chemistry Tilden Prize winner for 2018

Professor Duckett's work focuses on a key technique used in chemistry to probe the identity, and reactivity, of materials, called nuclear magnetic resonance (NMR). This method is very closely related to magnetic resonance imagining (MRI), which is used in medicine to probe disease.

Professor Duckett explains: "Our research improves the quality of the pictures these instruments take by dramatically increasing the size of the response they see. The result of this change is that smaller samples can now be examined, scan times can be reduced and potentially lower cost measurement devices built. Hence, in the future, this research may offer a route to widen the availability of MRI for the treatment and analysis of disease."

On winning the Prize, Professor Duckett said:

"I am very honoured to have been selected to receive one of the Royal Society of Chemistry's 2018 Tilden Prizes. This award reflects the sustained efforts of many collaborators, postdoctoral researchers and PhD students, over a number of years. I look forward to being able to share, and acknowledge, some of their contributions and our innovations during the lecture tour."

The Tilden Prize is awarded for increasing the sensitivity of NMR spectroscopy through the inventions of the SABRE and SABRE-relay methods. Professor Duckett receives £5000 and a medal.

Professor James Clark - Royal Society of Chemistry Green Chemistry Award winner for 2018

Professor Clark's work focuses on getting value from waste and in particular turning waste into molecules and useful products. His team has made new solvents from forestry waste products, for many applications including cleaning and industrial processing. They have also used orange peel, potato peels and seaweed to make other useful chemicals and materials. They collaborate with industries across the globe to make sure that their methods work.

Professor Clark said:

"[I am] delighted to receive the award from the organisation that helped me start the green chemistry movement in the UK 20 years ago this year!"

The Green Chemistry Award is for the design, development or

implementation of novel chemical products or processes which have the potential to reduce or eliminate the use and generation of hazardous substances. Professor Clark receives £2000 and a medal, and will complete a UK lecture tour.

Find out more about the Royal Society of Chemistry's 2018 awards.





Celebrating 10 Years of Chemistry Athena SWAN Gold

In a two-day event, York Chemistry celebrated 10 years of holding an Athena SWAN Gold Award, the longest held award at this level.

In this landmark two day event, <u>Professor Carolyn Bertozzi</u> of Stanford University, USA visited the Department, giving a keynote research talk and public lecture. Carolyn Bertozzi's name is synonymous with bioorthogonal chemistry, she has been described by the RSC as a "<u>Rockstar</u> <u>Chemist</u>" and even has her own Lego avatar

The Scientific Symposium on 16 May started with a vibrant poster session showcasing the diverse range of internationally-leading research in the Department. Carolyn also met with a group of early career researchers and fellows to discuss career development, which led to interesting discussions on balancing an academic career with having a family.





Poster session at the scientific symposium to Celebrate Diversity in the Chemical Sciences (Images by Beluga Photography)

LTR: Duncan Bruce (HoD), Caroline Dessent (EDG Chair) and speakers: Kirsty Penkman, David Haddleton, Carolyn Bertozzi, Paul Walton, Meghan Halse and Will Unsworth

Professor Duncan Bruce then opened the symposium with an overview of the Department's Athena SWAN work. He recounted how the Department started by focusing on gender equality, but now encompasses all forms of diversity, making a genuine difference to the people who work and study here in York.

<u>Professor David Haddleton</u> of Warwick University, who was himself a student in the Department, and carried out PhD research with Professor Robin Perutz, gave a lecture on '30 Years of Controlled Radical Polymerisation'. His talk covered an amazing range of methodologies, including some interesting copper mediated reactions done in <u>unconventional solvents</u>. David is one of the Royal Society's '<u>Parent-Carer' Scientists</u> and in his excellent talk, described his career as being hugely influenced by his family.

Outstanding talks were then presented by Dr Kirsty Penkman, Professor Paul Walton, Dr Meghan Halse and Dr Will Unsworth. In many cases, these talks highlighted collaborative work here in York, a key feature of research enabled by the supportive environment in the Department.

Professor Carolyn Bertozzi then presented her keynote lecture in which she demonstrated with panache how she has transformed the field of chemical biology. Her research focusses on understanding cell surface sugars involved in cell recognition, which has relevance in diseases such as cancer and infection. She has developed powerful bioorthogonal methods so that biological systems can be synthetically manipulated in their living environment.

The afternoon was rounded off with a wine reception and a celebration cake complete with candles.



10 year celebration cake, pictures of which have proved very popular on social media.

On the evening of 17 May, Carolyn Bertozzi then talked movingly in a Beacon Public Lecture, on 'The Long Game of STEM Diversification'. She discussed her own life and career experiences, not just as an award-winning scientist, but also as a lesbian woman, in a lecture that took in the full sweep of America's recent social history.

As an undergraduate student looking for summer projects in organic chemistry, Carolyn was told 'there are no women in my lab!'. She described the importance of her own resilience, and vital support from those who were open, supportive and encouraging. She spoke powerfully and poignantly about the HIV epidemic, her fight for partner benefits for her (now) wife, and the ways in which marriage equality legislation impacted on the gay community and her own young family.

Carolyn ended her talk by highlighting recent research based on authorship as a measure of the gender gap in academia, which estimates that in chemistry it will be 50 years before gender parity is achieved.

Carolyn was then interviewed by freelance Guardian journalist Kate Ravilious, who opened the questioning out to a panel including Dr Liz Rowsell, Corporate R&D director at Johnson Matthey, Dr



L to R: Liz Rowsell, Dave Smith, Kate Ravilious, Carolyn Bertozzi and David Bass

David Bass of the Equality Challenge Unit and Professor Dave Smith from York Chemistry. The panel spoke passionately about efforts to address some of the issues highlighted by Carolyn's talk and discussed ways in which departments and institutions can try to accelerate the pace of change.

Hopefully, in another 10 years' time, progress will have continued apace, and it won't be 50 years until gender parity is achieved here in York.

When Chemistry Gets Personal

A major feature article, published in *Chemical Communications*, tells the very personal story of research carried out in Professor David Smith's research team over the past 12 years.

In 2005, Professor David Smith met his future husband, Sam, who has cystic fibrosis. As a result of this, Dave was inspired to redirect the focus of his fundamental chemical knowledge, and apply it directly to try and solve relevant biomedical problems.



Smith Group research article featured in *Chemical Communications*

Cystic fibrosis is a genetic disease and Dave therefore became interested in gene therapy treatments in which a healthy copy of the gene would be carried into a patient's cells. This process requires a carrier system, which Dave proposed would be self-assembled from simple molecules – a chemical solution to the problem. Following fundamental investigation of DNA binding and gene delivery, Dave is currently translating this research towards a clinical setting.

In 2011, Sam's lung function declined to the point at which he required a lung transplant. Transplantation procedures

present many challenges; two of the biggest problems are the fact that many patients sadly die on the waiting list, and that even after a successful operation, the new organ can be rejected by the patient's immune system. After Sam's successful transplant, inspired by the need to solve these problems, Dave decided to develop smart self-assembled materials to support and encourage the growth and differentiation of stem cells. In principle, a patient's stem cells could then be used to grow their own organs on demand, with no problems of rejection. This fundamental research, funded by EPSRC, is at an early stage in Dave's labs, but already his smart self-assembled gel materials can do unique and interesting things.

In all of Dave's research, he uses his toolkit of chemical self-assembly to generate solutions to biological problems. In the process, he has developed a number of new concepts. One of them, self-assembled multivalency (SAMul), is named after his husband.

The new feature article tells the full personal story of Dave's recent research and explores both the journey towards eventual applications and the innovative concepts that have emerged from it. Some of Dave's fundamental insights have been highly influential and gone on to be applied in the labs of other scientists around the world.

Reflecting on his research, Dave says:

"As scientists, we rarely talk about the personal – after all, the underpinning philosophy of science is that whoever performs the studies, the results will be the same. However, the decision to let the 'personal' influence my direction of academic travel is one that I will never regret."

Dave recently appeared on <u>ITV News</u> with his husband talking about some of his research. He has also spoken to <u>Chemical and Engineering News magazine</u> about his personal approach to research.

Professor David Smith is a global leader in self-assembly and applied supramolecular science, having published <u>over 150 research papers and book chapters, that have been cited around 10,000 times</u> <u>with an 'h-index' over 55</u>. He leads the Molecular Materials Group at The University of York, which studies self-assembled, self-organised, and nanoscale materials and applies them in next-generation technologies.

The feature article in *Chemical Communications* is published Open Access and can be accessed on the <u>Royal Society of Chemistry's website</u>.

Department 6th in the UK in CUG Rankings

Chemistry keeps its place in the top 10 UK Complete University Guide rankings.



This week, the Department of Chemistry confirmed its place among the UK's most highly regarded departments for the subject of Chemistry. The Department is ranked 6th in the UK in the Complete University Guide 2019.

Published annually since 2007, the Complete University Guide rankings rank 131 UK universities, 13 Arts, Drama and Music colleges and conservatoires, and 70 subjects by quality measures important to students.

The subjects of Biology (9) and English and Related Literature (8) at York also remain in the UK top 10.

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.

Cracking the Chiral Code of DNA Binding

MSc student Kiri Thornalley, working in the research team of Professor David Smith, has gained a detailed understanding of how self-assembled nanosystems bind biomolecules such as DNA.



For several years, the research group of <u>Professor David</u> <u>Smith</u> has been interested in binding DNA, because systems that can bind and transport DNA across cell membranes have potential applications in gene therapy. The Smith group's synthetic systems typically selfassemble into nanostructures with positively charged surfaces in order to bind the negatively charged backbone of DNA.

However, in the bloodstream, other negatively charged molecules can also bind to such gene carriers and hence limit their activity. One such negatively charged biomolecule is heparin, which is very highly charged and can significantly disrupt DNA binding.

The Smith group made subtle structural changes to their synthetic DNA binders and explored how this affected the binding of both DNA and heparin. In particular, the researchers varied the three-dimensional 'chirality' of their synthetic systems.

They found that DNA preferred to bind to systems that display 'right-handed' lysine ligands on their surfaces. For heparin, no particular ligand preference was observed but it bound best if both chiral centres had the same 'handedness'.

In collaboration with the team of <u>Professor Sabrina Pricl</u> at University of Trieste, they gained more detailed understanding of how this selectivity results from structural differences between DNA and heparin – DNA is rigid and shape persistent, while heparin is adaptive and flexible. As such, they have quite different binding preferences.

Professor Smith noted: "By tuning the chirality of our nanoscale binders we can significantly alter the selectivity of their system, making a DNA binder much more resistant to the presence of heparin. Future work will therefore aim to use the understanding gained in this fundamental study to develop systems that are better optimised for specific medicinal applications, such as gene delivery."

MSc student Kiri Thornalley said: "Being given so much independence to ensure all the different parts of this project came together, as well as being able to collaborate with Professor Pricl and her group at University of Trieste to gain greater insight into the thermodynamics of binding, has been really enjoyable."

This research paper was dedicated to the retirement of <u>Professor Francois Diederich</u>, in whose research team Professor David Smith carried out his postdoctoral research fellowship 20 years ago.

The research is published in <u>Angewandte Chemie</u>.

New Hope for Cold Cure

Researchers have lab-tested a molecule that can combat the common cold virus by preventing it from hijacking human cells.



Early lab-based tests with human cells have shown the molecule's ability to completely block multiple strains of cold virus, and the team hope to move to animal and then human trials.

The common cold is caused by a family of viruses with hundreds of variants, making it nearly impossible to become immune to or vaccinate against all of them. On top of that, the viruses evolve rapidly, meaning they can quickly gain resistance to drugs.

For these reasons, most cold remedies rely on treating the symptoms of the infection – such as runny nose, sore throat and fever – rather than tackling the virus itself.

However a new molecule, developed by a research team led from Imperial College London, and including <u>Professor Tony Wilkinson</u> and <u>Dr Jim Brannigan</u> from the Department of Chemistry's <u>York</u> <u>Structural Biology Laboratory (YSBL)</u>, targets N-myristoyltransferase (NMT), a protein in human cells. Viruses 'hijack' NMT from human cells to construct the protein 'shell', or capsid, which protects the virus genome.

Dr Jim Brannigan from YSBL said: "All strains of the virus need this same human protein to make new copies of themselves, so the molecule should work against all of them. Additionally, the molecule also works against viruses related to the cold virus, such as polio and foot and mouth disease."

Lead researcher <u>Professor Ed Tate</u>, from Imperial College London, said: "The common cold is an inconvenience for most of us, but can cause serious complications in people with conditions like asthma and COPD. A drug like this could be extremely beneficial if given early in infection, and we are working on making a version that could be inhaled, so that it gets to the lungs quickly."

The team were originally looking for compounds that targeted the protein in malaria parasites. Screening large libraries of compounds, they found two hits and were surprised to discover that they worked best together. By inventing a novel way to combine the two hits, the team created a molecule, code-named IMP-1088, which is over a hundred times more potent than previous molecules targeting the protein in humans.

The results are published in the journal *<u>Nature Chemistry</u>*.

York Student Contributes to Science Paper on Anti-Cancer Drug Biosynthesis

During his final year, Khoa Chung, an MChem (Industry) undergraduate student, has been involved in a project at the John Innes Centre, which is now published in *Science* magazine .



The project aimed to understand the biosynthesis of vinblastine, a potent but rare anti-cancer drug. This valuable natural product, has been used as an anti-cancer drug since it was discovered in the 1950s. Found in the leaves of Madagascar periwinkle (*Catharanthus roseus*), it is a potent inhibitor of cell division and is used against lymphomas and testicular, breast, bladder and lung cancers. It is one of the most structurally complex medicinally-active natural products found in plants.

However, access to its life-extending chemistry has been very laborious. It takes approximately 500 kilograms of dried leaves to produce just 1 gram of the active drug. <u>Professor Sarah O'Connor's</u> team at the John Innes Centre in Norwich used modern genome sequencing techniques to identify the key missing enzymes that build vinblastine precursor molecules catharansine and tabersonine. These precursors can be modified further using known biosynthetic methods and ultimately give vinblastine itself.

During his MChem (Industry) project in Professor O'Connor's lab, York undergraduate Khoa Chung made important contributions to the work by performing a semi-synthetic study that directly contributed to the identification of the missing enzymes. Key intermediates were synthesised and then tested as substrates for the candidate missing enzymes, demonstrating that they functioned in the expected way.

Khoa said:

"Coming to the John Innes Centre, I did not know what to expect, as it is a plant-based research institute – I was initially sceptical about how I could contribute with my chemical background. However, I quickly came to learn that the underpinning theme within Sarah's group is its interdisciplinary nature; I believe it is this collaborative and multi-faceted approach which enabled completion of the vinblastine biosynthesis."

On first arriving for his placement at the John Innes Centre, Khoa was mentored in Professor O'Connor's team by senior post-doc Jakob Franke. He then moved on to take up a independent academic position and it was Khoa's job to complete the synthetic work.

Reflecting on the project, Professor O'Connor said:

"The compounds that Khoa made were absolutely essential for testing of the enzymes and understanding the reactivity of these unusual compounds. The whole team is very grateful that we had Khoa in the lab at exactly the right time!"

The more detailed understanding of the biosynthesis achieved by the team of researchers should ultimately allow vinblastine to be more easily produced in greater quantities by engineering the genes into convenient hosts such as yeast.

The research is published in *Science*.

Dame Professor Pratibha Gai News



Dame Professor Pratibha Gai, DBE, FREng, FRS, and Professor Ian Graham, FRS, Head of Biology, University of York, co-organised a Fellows Research Meeting on Smart Structures at the Royal Society Chicheley Hall in March 2018. The meeting included outstanding speakers, topics and participants from both the physical and biological sciences. Professor John Goodby, FRS, from the University, gave a brilliant talk on 'Nanosculpting and Nanoengineering of materials at the interfaces of science'.

Professor Pratibha Gai received her Damehood (DBE) at the Buckingham Palace in March (photo left). She was appointed a Dame in the New Year Honours for services to chemical sciences and technology.

Pratibha Dame Gai received the Outstanding Achievement in Science Award at the 8th Asian Awards, held in London on 27 April (photo right). The Asian Awards, founded by businessman Paul Sagoo, celebrate the highest achievement from across the International Asian community in the fields of business, sport, entertainment, philanthropy and popular arts and culture. The awards are selected from all of Global Asia, including China, India and Japan (now middle-eastern and other countries are also part of this celebration).



Professor Robin Perutz Gives 'Malcolm Green Lecture'

Professor Robin Perutz delivered the 'Malcolm Green Lecture' at the University of Oxford.



On 1 May, Professor Robin Perutz became the 9th annual Malcolm Green Lecturer in the University of Oxford's Department of Chemistry. In doing so, he joined an illustrious list of previous lecturers, including Nobel Prize Winners Richard Schrock and Jean-Pierre Sauvage. Other recipients of the lectureship are Harry Gray, Dan Nocera, John Bercaw, Maurice Brookhart, Geoff Cloke and Ernesto Carmona.

Robin Perutz's talk, titled Photochemistry of metal hydride complexes inside an NMR spectrometer: breaking the speed limits of

NMR explored his development of laser-induced chemistry with detection by nuclear magnetic resonance in collaboration with Professor Simon Duckett.

Revisiting Oxford gave Robin the opportunity to meet up with a number of mentors from his days as a Departmental Demonstrator in the Inorganic Chemistry Laboratory. These included Jenny Green, Tony Downs and Malcolm Green himself, after whom the lectureship is named.



Photograph of (left to right) Jenny Green, Robin Perutz, Tony Downs and Malcolm Green.

Chemistry Student in Three Minute Thesis Competition



Robin Brabham, 3rd year Chemistry PhD student (MAF / REH) will be in the final of this year's <u>Three Minute Thesis competition</u> on Tuesday 12 June (the sole chemist!).

Ten University of York research students have been selected to communicate the impact of their research, in just three minutes, to an

audience made up of university staff, members of the general public and industry. The final will be hosted on Tuesday 12 June, by Greg Dyke and held at King's Manor, 6 - 7.15pm.

Free tickets are available to University staff and members of the public. <u>Get your free 3MT tickets</u> and come along to support Robin.

Clarke Group News



On 24 April, the Clarke group went to Newcastle University to support Giacomo Lodovici give a lecture on his PhD project in the 2018 SCI Postgraduate Research Symposium. Giacomo off saw stiff competition from students from Manchester, Newcastle, Leeds, Lancaster, Huddersfield and the O'Brien group, and managed to come home a prizewinner! This is the second year in succession the group has won at this event. Congratulations Giacomo!

New Starters

Dr Florent Bouxin, Green Chemistry PDRA (maternity cover) working with JHC Room: C/F109; Ext: 4527; Email: <u>florent.bouxin@york.ac.uk</u>

Dr Katie Lamb, Green Chemistry PDRA, working with MN Room: C/F119 ; Ext: 4547; Email: katie.lamb@york.ac.uk



Dr Glenn Hurst Gives First International Keynote Lecture









On 24-25 April, Dr Glenn Hurst was invited to go to Trinity College Dublin in order to present the opening keynote lecture in the #TrinityisSocial conference. The invitation was based on Glenn's work utilising social media to assist students engage with and contextualise chemistry together with providing them a glimpse into the world of research for which he was given a JISC Social Media in HE Award in November 2017. The conference was approximately 120 attended by delegates throughout the day with contributions from academic, professional and administrative staff to include communications experts with backgrounds from both universities and private companies.



A particular highlight of the event was a talk from Joanne Sweeney-Burke, CEO at the Digital Training Institute, outlining a blueprint as to how to promote research through social media. Following this, Glenn met Joanne and was invited to be interviewed as part of her company podcast. You can see the recording here:

http://digitaltraininginstitute.ie/how-to-maximise-social-media-for-higher-education/

Further to Glenn discussing his own work in social media for learning, Glenn highlighted the outstanding contributions in this area by other staff in the Department of Chemistry such as our work using Facebook, Instagram and Twitter, utilisation of YouTube by Professor David Smith, early work with #alkenealkyne by Dr Paul Clarke and more recently, the @eedcAndy Twitter account by Professor Andy Parsons. Indeed, as part of her talk, Sharon Campbell, Deputy Director of



Communications at Trinity, specifically highlighted our work on Instagram as best practice in the sector. Well done Christina and the whole Communications Group!

While Glenn was in Dublin, he was also fortunate enough to meet up with Dr Claire McDonnell at the Dublin Institute of Technology to discuss projects in green chemistry education together with their joint work as part of the RSC Tertiary Education Group. Also, as part of the visit, Glenn was treated to an outstanding dinner at the 1592 Restaurant in Trinity, a visit to the Book of Kells and finishing off with a traditional sing-song in Temple Bar.

Glenn with Sharon Campbell and Mick Lynham

Department of Chemistry Union Representatives



Dr Anne Routledge D011



Dr lan Ingram F111

University and College Union

We urge all our colleagues (including postgraduate students who do some teaching / demonstrating - it's free for you!) to join the University and College Union (UCU). If you have any questions about the union, or the benefits of membership, whether you're already a UCU member or not, please get in touch. If you are a student, or not eligible to join UCU, please join your own union wherever and whenever you work - a unionised workplace is a fairer, safer workplace for everyone.

www.ucu.org.uk/join

Microwave Commercialisation Club (MCC) Workshop

The first Microwave Commercialisation Club (MCC) workshop was held on 26 April in the Industrial Engagement Facility (IEF) in the Green Chemistry Centre of Excellence (GCCE).

The <u>Microwave Commercialisation Club (MCC)</u> is a multidisciplinary team including experts in chemical engineering, microwave technology, biomass chemistry and process management.



Marilena Radoiu (Microwave Technologies Consulting) presenting her talk "Is microwave chemistry scalable?"

The workshop was a free one-day symposium supported by the EPSRC Impact Acceleration Account (IAA), arranged by members of the Green Chemistry Microwave Technology Platform. The primary aim of the workshop was to gather together experts in the field of microwave technology together with potential end users who might benefit from applying microwave technology in existing future or applications.

Speakers included representatives from

microwave manufacturers (Sairem, Muegge and AMT) alongside members of academic and independent research centres with the main focus being on the successful scale-up and commercialisation of microwave technology at an industrial scale.

Potential end-users from a variety of industrial sectors including PepsiCo, Yorkshire Water and Croda were in attendance. Following the presentations there was a lively discussion led by Dr Vitaly Budarin (GCCE, UoY) and Marilena Radoiu (Microwave Technologies Consulting) on the merits, misconceptions and challenges surrounding microwave chemistry.



Lively discussion in the Industrial Engagement Facility

The Curious Chemist

A well respected expert in chemical communication once told me that if I truly wanted to engage the public with science, I should do so in unexpected places. With this in mind I decided to turn my hand to scarecrow building, and enter Wheldrake's inaugural *Scarecrow Festival* on the early May Bank Holiday Monday. *Dr B Curious* was one of 58 entries in the competition and stood proudly by the front door. She was surrounded by images from the RSC's *Visual Elements*, as well as one our own departmental periodic tables. With a bit of product placement, she also promoted the up-coming *York Festival of Ideas* (5-17 June).





The contents of Dr Curious's test tubes were the stimulus for various conversations about how the colour separations were achieved, and this is where the science engagement came in (I am sure that you can work out how it was done using NaCl, water and a few food colourings).



Alas, Dr Curious didn't win (she was beaten by *Room on the Broom, Game of Thrones, The Mr Men* and *Gru* from *Despicable Me*), but many families got pleasure from seeing her and I got to chat to lots of people curious about science. Now all I have to do is come up with another idea for next year!

- Annie Hodgson

JEOL Postdoc Poster Competition 2018

Thursday 7th June C/A122

All staff and students are welcome to attend the annual Chemistry Department JEOL Postdoc Poster Competition

> Poster judging between 10 am - 12 pm Open viewing and refreshments 12 - 1 pm Winners announced at 1 pm

Please contact Derek Wann for more information derek.wann@york.ac.uk



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