# Chemistry Update

Newsletter 283, 31st March 2017

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## Calendar of Events

**Equality & Diversity Lunchtime Forum**
Date: Tuesday 4 April
Time: 12pm—1pm
Location: Quiet Room C/A137

**50th Anniversary HSP Conference**
Date: 5-7 April 2017
Location: Ron Cooke Hub

**Physical / Atmospheric Seminar**
Speaker: Dr Julia Lehman, University of Leeds
Date: Wednesday 5 April
Time: 1pm—2pm
Location: A122

**Green Chemistry Seminar**
Speaker: Dr Mark Buecking, Fraunhofer IME
Date: Thursday 6 April
Time: 3pm—4pm
Location: F106

**Research Seminar**
Speaker: Prof Guy Lloyd-Jones, University of Edinburgh
Date: Wednesday 12 April
Time: 1pm—2pm
Location: A101

**Research Seminar**
Speaker: Dr Maxie Roessler, QMUL
Date: Wednesday 26 April
Time: 1pm—2pm
Location: A122

Date of Next Issue:
28th April 2017

# Increased Risk of Air Pollution for Heathrow Airport

**A new report released by the House of Commons Environmental Audit Committee warns that a third Heathrow runway could result in increased air pollution due to the higher levels of traffic the development will cause.**

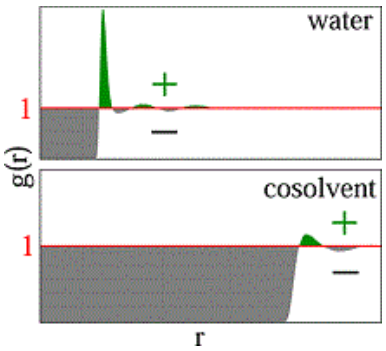
Alastair Lewis, Professor of Atmospheric Chemistry at the National Centre for Atmospheric Science (WACL), responded to the report:

"The report highlights the considerable uncertainties that exist in trying to estimate concentrations of air pollutants 5, 10 and as far as 20 years out from today; the recent track record with forecasting $NO_2$ does not help instil confidence. Whether the areas around Heathrow will meet current air quality standards will be crucially dependant on how emissions from other sectors evolve over time, and whether predicted reductions from these can offset new pollution arising from expansion. Part of this will depend on the uptake of newer low emissions cars, something highlighted in the report, but it will also depend on continued reductions in emissions from trucks, buses, and other numerous other combustion sources.

"The report focuses particular attention on whether statutory air quality targets will be met and these are a clear set of obligations that the government has to meet. This is a simple a pass / fail test - concentrations just above the limit value and it's a fail, just below and it's a pass. However the health impacts of air pollution do not conveniently follow a similarly simple set of pass / fail rules. Elevated air pollution even below limit values is now known to affect health and has a real cost. The ambition should always be for development to aim for as low a concentration of pollution as is practical, not simply to do the minimum necessary to gain a pass-mark."

# B is for Biophysics

**A York chemistry paper will feature in the virtual "B is for Biophysics".**




A paper authored by Dr Seishi Shimizu from the York Structural Biology Laboratory (YSBL) and Professor Nobuyuki Matubayasi from Osaka University has been chosen by the senior editors to be featured in the "B is for Biophysics" virtual special issue, highlighting the most exciting biophysical research papers published in *The Journal of Physical Chemistry B* since 2014.

The paper "Preferential Solvation: Dividing Surface vs Excess Numbers" can be viewed at http://pubs.acs.org/doi/abs/10.1021/jp410567c

"B for Biophysics" Virtual Issue of The Journal of Physical Chemistry B can be viewed at http://pubs.acs.org/page/jpcbfk/vi/biophysics

# Funding Boost for State-of-the-Art Equipment

**The University of York's Department of Chemistry has been awarded £1.6million to invest in state-of-the-art equipment used to investigate the three dimensional structures of biological molecules.**

The award, which will be used to invest in cryo-electron microscopy (Cryo-EM) equipment, was awarded by the Wellcome Trust.

The funding will be matched with a £1million gift from alumnus Dr Tony Wild.

Dr Wild, a leading businessman and philanthropist, has been a long-time supporter of Chemistry at York.

**Flash frozen**

Cryo-EM is a form of microscopy used by structural biologists in which biological samples are flash frozen to extremely low temperatures allowing them to be studied in the electron microscope in their native states –how they exist within a living cell.

Cryo-EM is transforming areas of science essential for improving health, from seeing how drugs get into cells or visualising the atomic-level structure of a virus to aid vaccine development.

Cryo-EM structure of a virus

The funding will allow scientists to address important biomedical questions that were simply unanswerable a few years ago.

Professor Gideon Davies, from the Department of Chemistry, said: "Cryo-electron microscopy is one of the most exciting developments of recent years. We are extremely grateful for the generosity of Tony Wild and the Wellcome Trust in funding this initiative.

"We are looking forward to analysing the complex atomic structures of viruses and of proteins involved in human disease here in York."

**Exciting science**

Professor Keith Wilson, from the Structural Biology Laboratory at York, said: "Every now and again, there are technological advances that are both unexpected and disruptive, and that have a profound effect on the way that a key area of science is done.

"This is the case with cryo-electron microscopy for looking at biological structures, which is one of the most exciting developments of recent years."

The Head of Department, Professor Duncan Bruce added: "To have been able to acquire this technique in York underpins further the world-class structural work for which we are well known and I very much look forward to the exciting science that will follow."

# Scientists Identify a New Way Gut Bacteria Break Down Complex Sugars

**New light has been shed on the functioning of human gut bacteria which could help to develop medicines in the future to improve health and wellbeing.**

Professor Gideon Davies worked with a team, led by Professor Harry Gilbert from the Institute for Cell and Molecular Biosciences at Newcastle University, who have found that single microorganisms in the human gut have the ability to disassemble the most complex of carbohydrates in our diet.

It is the first time such a discovery has been made and it is hoped that this may be used to one day identify new pre- and pro-biotic products to enhance people's health.

The study was recently published in the leading academic journal, *Nature*.

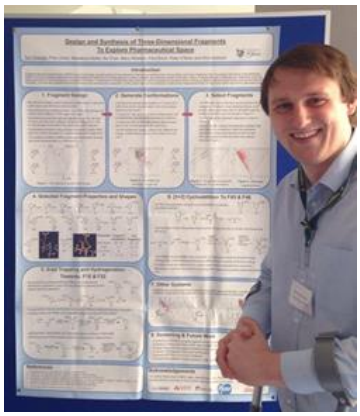
Read the full story here.

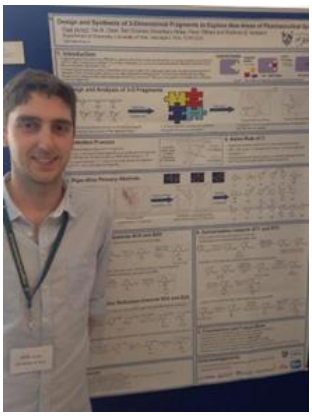
*Complex pectin metabolism by gut bacteria reveals novel catalytic functions* is published in *Nature*.
To read, visit: http://www.nature.com/nature/journal/vaop/ncurrent/full/nature21725.html?

# O'Brien Group News

**Fragments 2017 – Vienna – 5-7 March**

Tom Downes and Paul Jones both won bursaries to attend the biennial RSC Fragment Based Drug Discovery meeting in Vienna during the first week of March. The conference was an ideal opportunity to learn from vastly experienced people in both academia and industry as well as meet lots of other people in the field. The talks across the three-day conference were excellent, highlighted by the final talk of the conference delivered by Stephen Fesik, one of the founders of the field. Both Paul and Tom exhibited posters that were well received by delegates, while Tom also gave a two-minute flash presentation. Finally, the two got the chance to visit Vienna on the Wednesday before flying home to start putting their new knowledge into action!





# Chemistry Student Awarded Santander Sports Scholarship

**Elspeth McLeod, 4th year student, is one of four York students to have been awarded a Santander Elite Sports Scholarship worth £5000.**

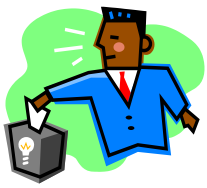

Elspeth began powerlifting at York to keep fit but has progressed swiftly through training and has now broken several regional records. She has been selected for Great Britain in the European Championships later this year.

She said “I'm so very proud to say I attended Team GB selections on 21 January 2017 and I've been selected to represent Great Britain at the 2017 European Powerlifting Championships in Denmark. I weighed in at a low 54kg and did well enough to be selected for the u57kg. I fly out on 11 March and compete on 13 March, lifting off at 8.00.

"I'm currently deep in prep at the moment and gaining strength. I can't wait to see what I can do in 10 days time and lift some heavy weights alongside the best lifters from all over Europe."

The recipients of these scholarships also includes Stuart Hosie (Computer Science and Philosophy) for rowing, Matt Tomlin (Mathematics) for softball and Shelby Ward Stephenson (Biology) for underwater hockey.

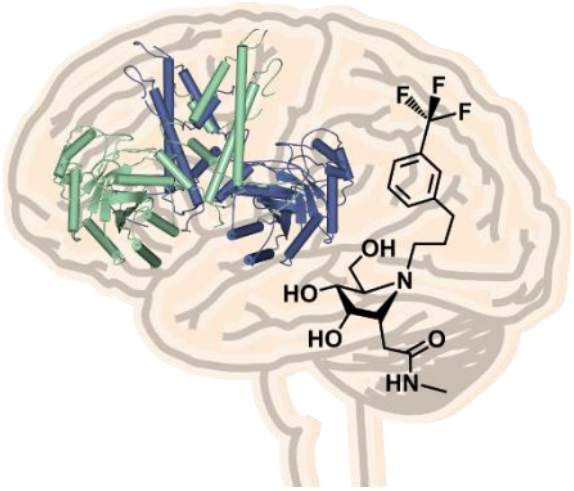
# Updated Online Department Suggestion Box



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 new Google form on the intranet homepage or at this link.

# 3D Structure of Enzyme Opens Path to New Drug Design in Brain Disease

**Researchers at the University of York and Simon Fraser University, Canada, revealed the 3D structure of an enzyme that could provide a crucial step forward in treating neurodegenerative diseases.**




Previous work from these research teams investigated a class of diseases called tauopathies, which occur when tau proteins spontaneously group together in the brain. It is often associated with Alzheimer's and other neurodegenerative diseases.

Research has shown that the tau protein can be modified by a sugar, natural to the body, called O-GlcNAc. This sugar can stabilise the protein to block it from clumping together and may thereby prevent disease. The human enzyme O-GlcNAc-hydrolase, however, is responsible for the removal of this crucial sugar from the protein, making it a prime target in preventing the progression of tau-related dementias.

In order to understand how this clumping of tau could be prevented or reduced by increasing O-GlcNAc, scientists at York investigated the structure of the human enzyme to reveal how it is organised to function in this way.

Professor Gideon Davies said: "Inhibiting the O-GlcNAc-hydrolase enzyme allows scientists to stabilise tau. We have solved the three-dimensional structure of the enzyme in order to aid structure-based drug design. The unusual and complex organisation should help us in the search for new drugs to treat neurodegenerative diseases.

"Drugs can be designed based on the 3D structure of this human enzyme, which will ultimately pave the way for new breakthroughs in the treatment of diseases such as Alzheimer's."

Read the full story here.

# New Starters


**Katie Lamb**, Green Technician with Hannah Briers / Vitaliy Budarin
Room: F/120; Extension: 4549; Email: kjl502@york.ac.uk

**Dr Inna Linnik**, PDRA with SBD
Room: CHM/101; Extension: 8892; Email: inna.linnik@york.ac.uk

**Dr Ben Bax**, Research Fellow with AAA
Room: TBC; Extension: TBC; Email: TBC

# Launch of the EUROCHAMP-2020 Project

**Launch of the €9 million atmospheric simulation chambers research infrastructure project EUROCHAMP-2020: looking beyond 2020.**

WACL's Dr Andrew Rickard recently joined over 50 European scientists - among which included physicists, atmospheric chemists and biologists originating from more than 10 countries - in Paris for the kick-off meeting of the EUROCHAMP-2020 research infrastructure, which integrates the most advanced atmospheric simulation chambers in Europe (http://www.eurochamp.org/).

Atmospheric "smog" chambers are used to evaluate, develop and elucidate key fundamental processes that occur in the atmosphere. They lay the foundations for air quality and climate models and also aid interpretation of field measurements. The European Union has invested ca. 9 million euros over 4 years in order to further integrate this community into a world-class infrastructure for research and innovation.


The three-day meeting has allowed the partners from 23 research institutes (including York) to discuss the strategic implementation of the project. Developing innovative protocols for air pollution and climate studies, harmonising good practises and improving platforms interoperability are among the key goals of this initiative but above all, EUROCHAMP-2020 aims at opening its platforms and datasets to a wide range of users. Trans-national access is now extended to sixteen different chambers and four calibration centres. An upgraded data centre, to be launched by July 2017, will provide access to a huge database of experimental chamber data, advanced analytical resources and high-level products. Dr Rickard is leading tasks on chamber characterisation and interoperability, and the evaluation of chemical schemes in the gas and condensed phases.

# YSBL Postdoc Runner-Up in Science Outreach Competition

**Sandra Greive, Postdoctoral Research Associate in the York Structural Biology Laboratory (YSBL), is a runner-up in the online science competition 'I'm a scientist get me out of here'.**

Sandra was one of five scientists who were stationed in the Francium Zone, the general science zone, which was funded by Wellcome. Over the course of two weeks, school students tested the scientists' knowledge by asking science questions and taking part in live chats.

During the second week, in true X-Factor style, the students were allowed to evict scientists daily with the remaining scientist in each zone winning a £500 prize.

Sandra said "I signed up to take part in this competition in November after receiving an email from ScienceGrrl.

"During the competition I was asked lots of great questions, such as "Why do we dream?", "If you could kill all bad bacteria, would it stop ageing?", "How does a placebo work?" and "Is time travel possible?". A lot of the physics questions left me stumped but there was great interaction between the scientists in my zone so the students' questions could always be answered.

"The students weren't just interested in science, asking social, ethical and philosophical questions. I tried to encourage them to think on their feet, be the change they want to see in the world and make smart choices. Going forward, I encourage them to ask questions and not to be satisfied with the answers if they don't make sense; you're not going to learn if you don't ask.

"If any scientists are thinking about taking part, my advice would be to create a thorough profile, include photos and it is easier to relate to the students if you are light hearted, funny and honest. You are given lots of helpful advice and support from the moderators and there is a staffroom chat but be prepared for a very busy two weeks; I took part in 15 half hour chats plus a couple of hours a day answering questions and researching topics.

"Overall, taking part in this competition was a fun and rewarding experience. My colleagues were very supportive and I wouldn't hesitate to take part again in the future.

The competition ran between 6 – 17 March with 130 schools interacting with 40 scientists across eight different zones. The next competition will take place between 12 – 23 June 2017."

# Departmental Funding Provided for Presentation Skills Course

“I enjoyed this one-day course and found many of the techniques and strategies useful and insightful. In my own career, I feel confident and comfortable presenting to groups of people, however, I would like to develop my capacity to present to large groups and work towards offering more keynote speeches at conferences with a greater range of techniques.

“At the start of the day, I presented a prepared two minute presentation and was videoed doing this and then analysed in terms of strengths and challenges. I identified two areas to work on: to maintain eye contact and to 'breathe from the belly'. The rest of the day was divided into developing techniques for three specific areas: Body, Voice and Mind.

“I learnt how to stand assertively (but not over confidently) and own my space, what to do with my hands when presenting, how to obtain and maintain eye contact comfortably and make it look effortless and natural. In the afternoon, I learnt how to use volume, emphasis and pause in my public speaking, how to breathe to control nerves and project my voice. Later I learnt how to mentally prepare for a presentation, including a range of tips for what to consider prior to a presentation.

“During the final part of the day, I was asked to re-present my original two minute presentation, including a range of the strategies employed during the day - and then receive feedback from the group. It felt empowering and supportive and I really do feel that I had made improvements which I will take forwards with me that will have a genuine impact on how I present in the future.”

- Nicky Waller, Advisory Teacher for Primary Science in CIEC

# Dr Roger Mawby

The Department was very saddened to hear of the death of Dr Roger Mawby on 17 March. Roger was one of the founding academic staff of the Department and made significant contributions until his retirement in 2001. He was the Department’s Admissions Tutor for much of this time and pioneered a nationally recognised undergraduate recruitment strategy. Within the University, Roger was held to be the exemplar of how an admissions tutor should operate and was renowned for a personal and caring approach not only to applicants, but also to their schools. Roger’s research was focused on transition metal organometallic chemistry and included the discovery of the “indenyl-effect” whereby the rates of substitution at metal complexes could be dramatically increased. He was also an inspirational teacher giving detailed and insightful lectures, the core of which still form our courses on Transition Metal Chemistry and Organometallic Chemistry. Roger’s outstanding contribution will be formally recognised by the Department at a later date.

# Is the Punjab Choking Delhi?

**Dr Avtar S Matharu completed a successful one-week scientific scoping mission in North India, funded by the University of York's BBSRC Grand Challenges Research Fund Impact Acceleration Award, to explore the development of rural biorefineries to avoid the burning of agricultural residues postharvest.**

In December 2015, Delhi was named as the 'most polluted city in world' surpassing Beijing. The uncontrolled burning of agricultural residues postharvest in the Punjab (North India) is often cited as a significant factor as the particulate matter (smog) is transported south due to prevailing winds. Pollution in Delhi is so extreme it may have damaged the lung function of half the city's 4.4 million children so severely that they will never fully recover. The burning of residues in the Punjab is not going away but increasing as highlighted by recent satellite images from NASA.

Dr Matharu connected biotechnological approaches in Delhi and Chandigarh that utilise agricultural wastes generated in North India to explore generation high value chemicals, materials and bioenergy in order to create new economic wealth for a poorly utilised resource; create new jobs and supply chains; and promote better environment and health for local and surrounding populations through reduced burning of agricultural wastes.

His first workshop in Delhi, co-organised by Delhi University, the Green Chemistry Network Centre and The Energy Resources Institute (TERI), explored state-of-the-art biotechnological approaches for conversion of agricultural residues into high value chemicals. The workshop was attended by industrialists, academics and students. The latter were given an opportunity to share their knowledge of green chemistry through a poster and oral session with prizes awarded.

Delhi Workshop

Before travelling for 5h by car on the famous Grand Trunk (GT) Road on to Chandigarh which ultimately ends in Amritsar, Dr Matharu was invited to give a lecture at Manav Rachna University, Faridabad on 'Green Chemistry for Tomorrow' and met with the Vice Chancellor, Professor Srinivasta.

His second workshop in Chandigarh, co-organised by Panjab University and known as the 'city of Beauty', focused on volumes of agricultural residues, extent of burning and logistics alongside solutions for water remediation. Chandigarh sits in the heartland of the Punjab and its farming communities. In Punjab approximately 2.8 million hectares are used for rice cultivation generating 10 million tonnes of rice alongside 17 million tonnes of rice straw residues. Whilst in Chandigarh, Dr Matharu was invited to the Centre for Innovative Applied Bioprocessing (CIAB), a national institute under the Department of Biotechnology (Government of India), to explore research collaboration. The CIAB is impressive and is moving to a purpose-built facility occupying 80-hectares; it is a version of our Green Chemistry Centre of Excellence (GCCE), Centre for Novel Agricultural Products (CNAP) and the Biorenewables Development Centre (BDC) all on one site.

Dr Matharu's week-long tour ended back on the GT Road from Chandigarh to Amritsar where he gave a lecture at the famous Khalsa College co-organised by Guru Nanak Dev University. Dr Matharu noted incredibly passionate students and researchers but amidst limited facilities and resources. This is where GCCE can have major impact through many of its outreach and online activities.

Panjab University, Chandigarh


Khalsa College, Amritsar

The scoping exercise has been extremely positive, providing many answers and insights into new collaborative research opportunities. The second part of the scoping exercise was a reciprocal visit by Dr Sanjukti Subudhi, Biotechnology Convenor, TERI; Professor RK Sharma, RSC Secretary (North India), Green Chemistry Director, Delhi University; and Professor SK Mehta, Director Sophisticated Analytical Instrumentation Facility, Panjab University on 27 March 2017.

# Emerging Areas of Photochemistry: From Fundamentals to Applications

Over 130 researchers from across UK and overseas gathered at the Department of Chemistry of the University of York on **16 & 17 March 2017** for the photochemistry symposium entitled ***Emerging Areas of Photochemistry: From Fundamentals to Applications***. Attracting over 75 delegates from outside York, the conference brought together members of the national and international photochemistry and photophysics community to highlight and discuss the most recent innovations.

Reflecting the diverse research interests and expertise offered at the Department, the meeting provided an excellent platform for networking and bringing insight to topics including high level theory, time-resolved magnetic resonance, artificial photosynthesis and biomedical applications. With a strong focus on triggering lively discussions and interaction among a wide audience of academics, PhD students, post-doctoral researchers and industrialists, the conference hosted an outstanding programme of stimulating presentations from renowned scientists within the field.

The invited external speakers were: **Andrée Kirsch-De Mesmaeker** (Free University of Brussels), **Peter Seeberger** (Max Planck Institute & Free University of Berlin), **Ally Aukauloo** (University of Paris-Sud), **Chantal Daniel** (University of Strasbourg), **Robert Bittl** (Free University of Berlin), **Christian Bressler** (European X-Ray Free Electron Laser, Germany), **Julia Weinstein** (University of Sheffield), **Erwin Reisner** (University of Cambridge), **Christiane Timmel** (University of Oxford), and **Cvetelin Vasilev** (University of Sheffield). In addition to the presentations by external invited speakers, the conference also included talks by members of the Department: **Jason Lynam, Anne Duhme-Klair, Barbara Procacci, Chris Unsworth, Edward Matthews**, and **Pedro Nunes**.

Reflecting the high calibre of scientists who have supported this event, we thank **Elizabeth Gibson** (Newcastle University) and **Martin Paterson** (Heriot-Watt University) for joining us as external chairs, and **Robin Perutz, Caroline Dessent** and **Meghan Halse** (as internal chairs).

We hope that the meeting can be described as a "beacon event" for celebrating diversity in science, as would be expected of an Athena SWAN Gold department. Female participants in particular were very well represented in the cohort of speakers (6 out of 16), session chairs (3 out of 5) and attendees (46 out of 135).

Lunch and coffee breaks, in conjunction with the poster session (**with 42 poster contributions**!), provided an informal setting for lively discussions. Highlighting the breadth of topics covered and the high standard of the posters presented at the meeting, we would like to congratulate **Yvonne Choo** (Newcastle University) on winning the best poster presentation, and **Ben Coulson** (University of York) and **Nils Põldme** (Newcastle University) on winning the Solar Fuels Network poster prizes (1$^{st}$ prize and runner-up, respectively).

Many thanks to all the people who have contributed in so many ways to turn this event into a smoothly running meeting. Thank you for all the hard work and imagination that have gone into to making this symposium a great success. Last but not least, special thanks to our sponsors: **the University of York, EPSRC, Solar Fuels Network, Alvatek, Asynt** and **Uniqsis**, for allowing us to put together a research showcase for the photochemistry community and making it possible!

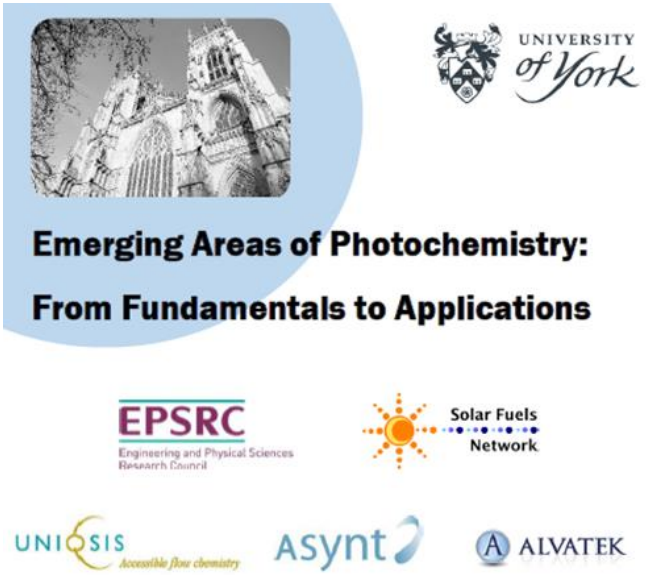



**Figure 1**. Congratulations to our poster prize winners: Yvonne Choo (Newcastle University), Ben Coulson (University of York), and Nils Põldme (Newcastle University).

**Figure 2**. From left to right: Christian Bressler, Chantal Daniel, Ally Aukauloo, Jason Lynam, Julia Weinstein, and Elizabeth Gibson.

**Figure 3**. From left to right: Christopher Unsworth, Anne Duhme-Klair, Andrée Kirsch-De Mesmaeker, Cvetelin Vasilev, Erwin Reisner, and Peter Seeberger.


**Figure 4**. Duncan Bruce (HoD) delivering the opening remarks.

**Figure 5**. Robin Perutz chairing the event.

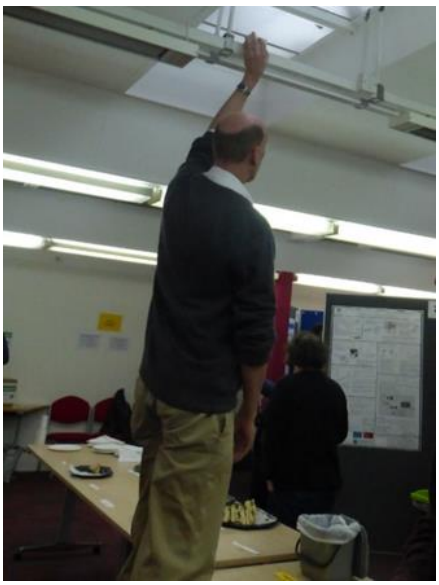


**Figure 6**. Simon Duckett, standing on a chair, switching off the heating manually –definitely taking very seriously his role as an organiser!

# Johnson Matthey Poster Competition

The Johnson Matthey Poster Competition took place this year on 28 March, and saw 30 of our third year PhD students presenting their work.

The Competition requires participants to display a poster about their research which is scored by a panel of judges who look at presentation, scientific content and student discussion. The judging panel consists of members of academic staff and PDRAs.

The overall standard of the posters was high as usual, and after careful consideration five winners were awarded £300 to be spent on research activities/items.

Many congratulations to:

***Emily Burns (JETO/AB)***

***Aimee Clarke (RJKT)***

***João Pedro Nunes (DAW)***

***Richard Spears (MAF/PAOB)***

***Elizabeth Wheeldon (DKS)***

Left to right: João Pedro Nunes, Aimee Clarke, Dr Martin Partridge from Johnson Matthey, Emily Burns and Richard Spears (the 5th winner - Lizzie Wheeldon could not attend the seminar).

Winners were announced at a departmental seminar in the afternoon, followed by a talk from our guest speaker Dr Martin Partridge from Johnson Matthey entitled "**Johnson Matthey and the Ammonia Industry".**

Thanks go to Johnson Matthey for their sponsorship of the event, all those members of staff on the judging panel, and all the students for taking part.

## 2017 Graduate Research Seminar

**The 2017 Graduate Research Seminar took place on Thursday 23 March.**

PhD students Freya Squires, Pedro Nunes, Tamara Mielke and Josh Reid shared their research with other members of the Department. Introduced as an opportunity to share and discuss ideas beyond the confines of one research group, the graduate research seminars are predominantly for PhD students to present their work to their peers and for the audience to ask questions. In keeping with this, the sessions are also chaired by a PhD student.

The titles of the talks were:

**Freya Squires** – Measurement of NOx and CO fluxes from a tall tower in Beijing

**Pedro Nunes** – The photo-induced dynamics of 1,2-dithiane - from molecular dynamics to ultrafast electron diffraction.

**Tamara Mielke** – Fungal Peroxygenases for Regio- and Stereoselective Hydroxylation Reactions

**Josh Reid** – Interactions In Protic Ionic Liquid Systems; fundamental theory and industrial applications

Many thanks to our speakers, and also to Tom Nicol for chairing the event.

If you would be interested in presenting or chairing at a future Graduate Research Seminar, please speak to one of your Graduate School Board Reps, or email chemgrad@york.ac.uk.

# Equality & Diversity News

## Equality and Diversity Lunchtime Forum

**Date: Tuesday 4 April**

**Time: 12-1pm**

**Location: C/A137 (the quiet room)**

The Equality and Diversity Group (EDG) would like to invite you to the first lunchtime discussion forum.

We plan to select a different topic for an informal discussion over lunch for each session. For this first meeting the topic will be:

**Work life balance: Is it possible to have a good work-life balance along with a successful career in academia?**

Come along, share your views, meet others in the Department who are interested in equality and diversity.

Some links to recent articles on this topic are included below.

All staff and students welcome.

Bring your lunch and a mug along - tea and coffee provided.

Please contact Caroline Dessent for more information, caroline.dessent@york.ac.uk.
Dr Caroline Dessent, Chair of the Chemistry Equality and Diversity group (EDG)


https://www.theguardian.com/lifeandstyle/2014/nov/07/ten-tips-for-a-better-work-life-balance

http://www.bbc.co.uk/news/business-38607682

https://www.psychologytoday.com/blog/in-one-lifespan/201504/work-hours-work-life-conflict-and-well-being-in-academics

# Paths to Progress

## *Celebrating International Women's Day at Bangor*

"I was invited to speak at Bangor University as part of a day of events celebrating this year's International Women's Day on 8 March. The theme was 'Paths to Progress', reflecting on progress in gender equality at Bangor, Wales, and UK Universities.

"There were fantastic talks from Professor Jo Rycroft-Malone, Pro-Vice Chancellor for Research & Impact at Bangor and Laura McAllister CBE who is Professor of Public Policy and the Governance of Wales at Cardiff University.

"I was asked to talk about our Athena SWAN gold award (which we will have held for 10 years this year) and the considerable progress we have made towards gender equality over many years. I discussed some of the initiatives which have led to a noticeable change of culture in the Department, particularly around flexible working, support for career development, and more recently the unconscious bias observer scheme. I discussed the broadening of the Equality and Diversity Group remit especially around LGBT+ and mental health and our belief that good policies and practice benefits everyone.

"There were inspirational talks from Professor Morag McDonald and Professor Emily Cross who both talked very honestly about their own career pathways and the day was rounded off with the announcement of the winners of three 'Women in Science' scholarships, funded MSc places awarded to outstanding female students to study at Bangor."

- Leonie Jones (Employability and Diversity Officer)


Dr Leonie Jones, Prof Jo Rycroft, Prof Laura McAllister, Prof Emily Cross and Prof Morag McDonald at the University of Bangor

# WUN: Bridges over BREXIT

“The University is a member of the Worldwide Universities Network (WUN) who organised an event tackling the challenges arising from the UK’s decision to leave the European Union. To represent European students currently studying in the UK, the University of York chose to send me to the event in Brussels earlier this year.

“The workshop hosted a wide range of WUN university members but also representatives of organisations such as Universities UK International, the OECD and the Russell group. During the day many different topics were picked up and discussed with a mostly optimistic view towards the outcome. Rebecca Hughes from the British Council described the idea of an open BREXIT, which should avoid self-censorship, actively encourage collaborations and continue to welcome people from Europe. Others like Robert Madelin from the University of Oxford compared the process of the exit from the EU to a divorce which might get messy. He warned of a lose-lose situation and encouraged universities to think about the message they want to send. The director general of the Association of Commonwealth Universities John Wood gave a great talk on alternative possibilities to keep up collaborations and how to think outside of the box allowing UK universities to participate in a new range of projects and networks. The event was concluded by York’s Vice Chancellor Koen Lamberts warning the UK not to leave Europe behind and to remain open to the world. He again mentioned the importance of understanding priorities and trying to be as positive as possible.


Picture shows (left to right): Professor Joseph Sung (President CUHK and Chair, WUN Partnership Board), Robert Morgan (UK Graduate Student in Maastricht), Tamara Mielke (EU Graduate Student in York), and Professor John Wood (Director General, Association of Commonwealth).

“From a student’s perspective this event was very informative and reassuring. It was interesting to hear how organisations are dealing with the UK’s exit from the EU and which steps have already been taken. While I personally find it hard to share the pure optimism of the event it did give me a more positive perspective and it was good to hear that there are people fighting for the rights of Europeans already in the UK.

“For more information on the WUN, including the funding opportunities it can provide staff and postgraduate students, see the University’s WUN page or email international-relations@york.ac.uk.”

- Tamara Mielke

# 3rd EUChems Green and Sustainable Chemistry Congress

On 3-6 September, the University of York will host the 3rd EUChems Green and Sustainable Chemistry Congress at the Ron Cook Hub on the East Campus. We have put together a very strong line up of internationally renowned speakers including plenary lectures from:

- Ben Feringa (winner of the 2016 Nobel prize for chemistry)
- Paul Anastas (winner of the 2016 RSC Green chemistry award)
- Nicholas Gathergood (president of the EUChems Green and Sustainable Chemistry division)
- Michael Gratzel
- James Clark
- Babette Pettersen

There will also be keynote lectures from: Helen Sneddon, Arjan Kleij, Mark Mascal, Ben Buckley, Andy Hunt, Chris Stevens, Anna Nunes, Santiago Luis, Francois Jerome and James Sullivan.

The conference will cover all aspects of green and sustainable chemistry including sessions on: Sustainable feedstocks; $CO_2$ utilisation; Sustainable polymers; Green solvents; Sustainable Catalysis; Energy efficient processes, Environmental aspects of green chemistry and Green chemistry at York.

We are able to offer a special non-residential rate to any staff or students in the Department of Chemistry who wish to attend. This includes access to all lectures and the poster session, lunch on Monday and Tuesday and all tea / coffee breaks. The special rate is:

- £150 not including the conference banquet.
- £220 including the conference banquet (at the National Railway Museum)

This special rate will not be advertised on the conference website (https://www.york.ac.uk/3EUGSC). Anyone wishing to take advantage of this reduced rate should email Katy Brooke (katy.brooke@york.ac.uk). You may also submit a poster abstract using the template available on the conference web site. Note the deadline for poster abstract submissions is 30 June.


# Organic Chemists at OrgSyn50, Manchester

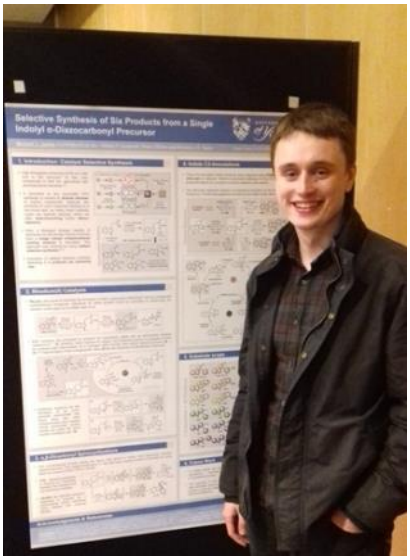
The organic section sent a strong delegation to the recent two-day OrgSyn50 meeting, held at the Midland Hotel in Manchester, with Professor Dave Smith, Dr Will Unsworth, Dr John Liddon (RJKT group), Michael James (RJKT/PAOB), Aimee Clarke (RJKT) and Mary Kagoro (IJSF) all in attendance. The highlight from a York perspective was Dave delivering an excellent lecture on self-assembled supramolecular systems, with a focus on his work on Self-Assembled Multivalent (SAMul) Nanostructures. Dave was handed the early slot on the morning after the conference dinner and delivered a typically engaging and inspiring talk and did a particularly good job of waking up an audience, some of whom may have overindulged the night before!


**Dave presenting on SAMul (with apologies for the shocking photography!)**

Dave was joined by a high calibre line up of speakers, including Professor Lee Cronin (University of Glasgow), Dr Kate Smith (Cancer Research Manchester Institute), Professor Graham Sandford (Durham University), Professor Jonathan Clayden (University of Bristol), Professor Peter Styring (University of Sheffield), Professor Joe Sweeney (University of Huddersfield), Professor Chris Braddock (Imperial College London), Dr Allan Watson (University of Strathclyde), Dr Steve Goldup (University of Southampton), Professor Martin Smith (University of Oxford), Dr Simon Hirst (Sygnature Discovery) and Professor Philip Parsons (Imperial College London), as well a number of flash talks and posters by PhD students and postdocs.

The meeting was organised by Fluorochem to celebrate their 50-year milestone in helping support research and supplying intermediates for R&D worldwide. Fluorochem already support us at York through their generous sponsorship of our organic seminar programme, and now deserve our gratitude even more after providing a bursary for two of our PhD students (Mickey and Aimee) to attend the event completely free of charge! Special thanks go to Danielle Bradshaw from Fluorochem for making this happen. The

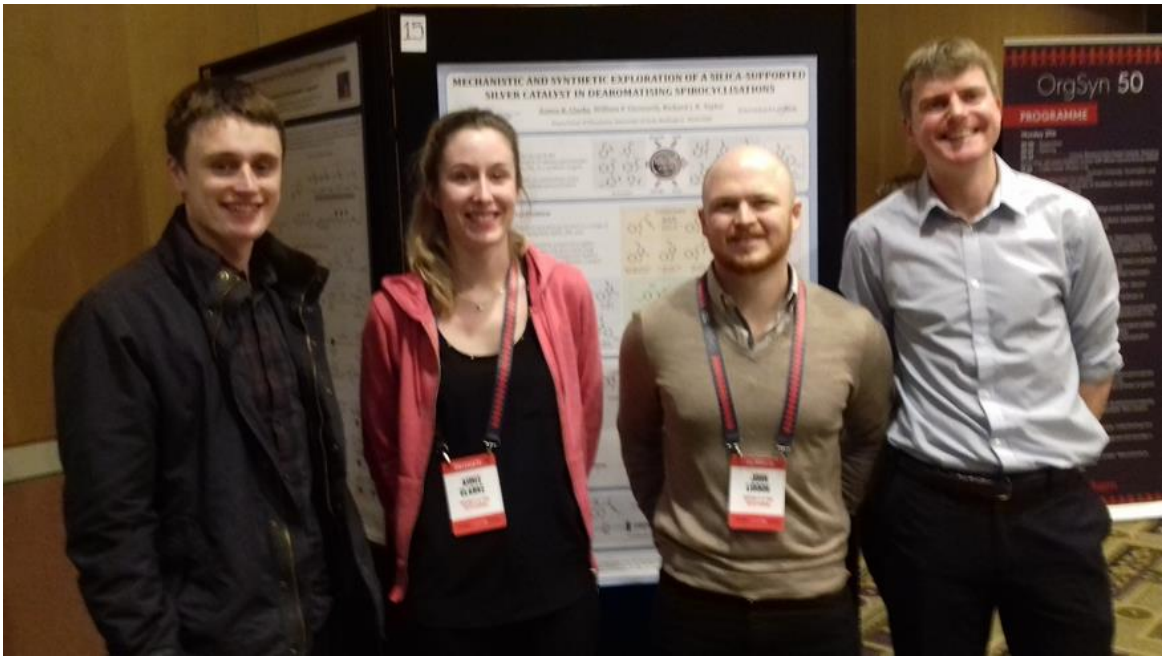
organisers put on a fantastic and genuinely unique event (including a live magician and Rubik's Cube contest!) in an excellent venue, with a lovely informal atmosphere and some outstanding science that was thoroughly enjoyed by all.



Three of the York group Dr John Liddon (RJKT group), Michael James (RJKT/PAOB) and Aimee Clarke (RJKT) presented posters in a lively evening poster session and all did a great job. Special congratulations to Mickey (pictured) who won second prize in the poster competition!

The event was also a great chance to catch up with old friends, including former RJKT group PhD student Alan Burns, who is now at Sygnature Discovery. While this meeting was originally planned to be a one-off, there was much talk about a repeat in a few years, which I would strongly recommend attending if this goes ahead!

- Dr Will Unsworth




Michael James, Aimee Clarke, John Liddon and Alan Burns (Sygnature, former RJKT group)

# New Frontiers in Anion Spectroscopy

On 8 March, the Department of Chemistry co-hosted a symposium with the Institute of Physics Molecular Physics Group on "New Frontiers in Anion Spectroscopy". The meeting was very well attended, with attendees travelling from across the UK and from as far away as Paris to attend. Professor Manfred Kappes of Karlsruhe Institute of Technology, Germany, gave the key note lecture on "*Time-resolved photoelectron spectroscopy of molecular multianions*", with additional talks from Professor Steen Brøndstred Nielsen (Aarhus), Dr Jimena Gorfinkel (Open University) and Professor Jan Verlet (Durham).

# Inaugural Chemistry Research Fellowships Open Day

The Department of Chemistry held its inaugural Independent Research Fellowships Open Day on Friday 24 March. The event was well attended by internal and external visitors from the Universities of Leeds, Bradford, Manchester, Oxford, Cambridge, Lille and Eindhoven.

The day began with a presentation from our Head of Department, Professor Duncan Bruce, who gave his perspective on why fellowships are important for the Department and highlighted how many current academics have held prestigious fellowships. Professor Lucy Carpenter, Chair of Research Committee, presented the Departmental and thematic research strategies, outlining how fellowships complement these strategies.

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. The day ended with a panel discussion and an informal networking drinks reception.

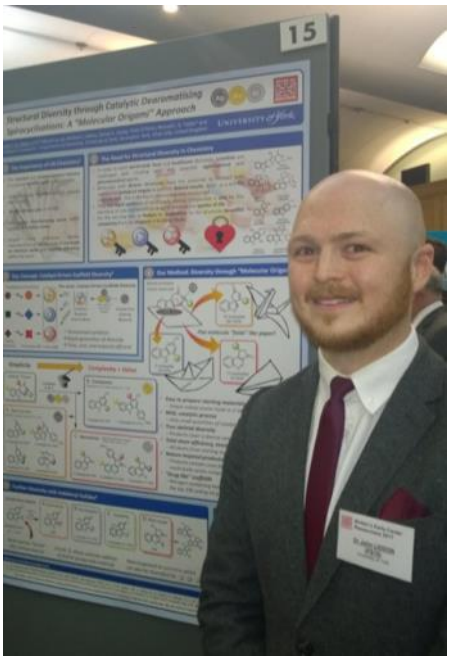
The event was a great success and we look forward to working with the attendees in the future on their exciting applications. Thank you to everyone who helped on the day and who held informal meetings with our attendees.

The presentations from the day are now available on the internet.

# SCI Retrosynthesis Competition - 10 March 2017

On 10 March, a team from the University of York attended the final round of the SCI Retrosynthesis competition in London to battle it out with nine other groups, both from academia and from industry, for the title of retrosynthesis champions. The team, consisting of James Donald, Ian George, John Liddon, Tom Stephens, and Niels Koning were tasked with devising a plausible route to the tricky natural product Eucalrobusone D, and represented the Department well, making a lasting impact with their novel hetero Diels–Alder approach to the molecule. Well done lads!

# STEM for Britain Competition -13 March 2017




On 13 March, Dr John Liddon from the Taylor group attended Parliament to present his research to a range of politicians and a panel of expert judges as part of the STEM for BRITAIN competition. John's poster on Structural Diversity through "Molecular Origami" was judged against dozens of other scientists' research in the only national competition of its kind. John was shortlisted from hundreds of applicants to appear in Parliament, and represented York well, receiving enthusiastic feedback from all that took part. Well done John!

# Green Impact

## Sustainable Shopping

Look at the 'Ethical Consumer' website www.ethicalconsumer.org – this is a treasure-trove of information on buying sustainable products. Click on the product guides and you can select sub-categories and click on the products you are interested in. Each product will be given a rating out of 20 – you can drag the sliders for which area you are most interested in, the environment, animals, people, politics, product sustainability. The higher the rating the better!

BigBarn—find local food - www.bigbarn.co.uk

Why buy new books? Simply buy second hand books online:

www.worldofbooks.com (free delivery)

www.abebooks.co.uk (can be very good value, from £2.80 including postage)

Charity shops are a good way of purchasing things a lot cheaper:

For example, there are several charity shops in Goodramgate (Oxfam No. 7, BHF No. 11, Save the Children No. 23, Mind No 25, Sue Ryder No. 28, Scope No. 57A, BHF, Amnesty International second hand bookshop, No. 42).

Links to list of charity shops in York:

https://www.yell.com/s/charity+shops-york.html

Two Shared Earth shops in York - 1 Minster Gates and 5 Bootham:

www.sharedearth.co.uk/acatalog/our_shops.html

Support your local shop! www.visityork.org/shopping is a good websites for information about which shops to go to in York.

For Students – the following University website is very good (tips for everybody as well):

www.york.ac.uk/students/campus-city/sustainable-york/sustainable-shopping

Click on the below link to access the Sustainable York Guide:

www.york.ac.uk/digital-editions/york-sustainability-guide/files/html5/index.html

Buy FSC certified wood products, Rainforest Alliance certified products (www.rainforest-alliance.org/shopthefrog) Consider buying environmental cleaning products, such as Ecover.

Information on what and where to buy Fairtrade products:

www.fairtrade.org.uk/en/buying-fairtrade

# Eat Seasonably

[eatseasonably.co.uk/what-to-eat-now/calendar](eatseasonably.co.uk/what-to-eat-now/calendar)

Best to eat in April - Cauliflower

Best to eat in May – Rhubarb and Asparagus

Consider also growing your own vegetables – you don't need much space. See above Eat Seasonably website on what to grow, when.

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# New Arrivals

Congratulations to **Katie Stott** (Undergraduate Office Administrator) who has welcomed her third baby boy, Oliver Richard Stott (photos below) into the family on 3 March, weighing 8lb 3oz.

Also, congratulations to **Dr Tom Farmer** (Green Chemistry) and wife Kathryn Lucas who have had their first baby. Evie Antonia Farmer (photo left), was born 16:49 on Sunday 19 March, weighing 8 lb 9 oz.

Both mothers and babies are doing well.

# New Department Award Cabinets

The Department has new award cabinets in A block, which are housed in the corridor leading to the HoD's office. The cabinets showcase new lighting, which was designed and installed by Tim Ayres. We have received some lovely comments about how bright and attractive they are as they "jazz" up the corridor. They have also become a focal point for visitors.

The cabinets showcase all the Departmental awards including teaching, green impact and equality and diversity – we even had to get an extra cabinet to house them all. We have also included a history section, which features our *50 years of Chemistry at York* book.

# Alison Edmonds Running for Changing Faces

Alison Edmonds (Green Chemistry Centre Administrator) and her husband David Hull are fundraising for Changing Faces, a charity that supports and represents those who look different.

David will be running the London Marathon and Alison will be doing a sponsored 5k around the time of the marathon.

Please sponsor them at:

https://www.justgiving.com/David-Hull-Changing-Faces/

or text MDGH69 £2 / £5 / £10 to 70070 to donate now, e.g. MDGH69 £10.

# Green Manufacturing for the 21st Century Chemical Industry:

## *Case studies, methodologies and tools*

## 24th May 2017 10:00 - 17:00

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

Increasing demand for chemicals worldwide, depleting resources, stricter legislation and the rising cost of waste disposal are placing increasing pressure on the chemical and related industries. For any organisation to survive in the current climate, the issue of sustainability must be fundamental to the way it operates.

This **free workshop** provides an exciting opportunity to gain advice and scientific expertise, explore a broad range of cutting-edge case studies on green chemical manufacturing and learn about the methodologies and tools available to facilitate practical solutions. The workshop is open to all with an interest in the future of sustainable manufacturing.

The programme for the day includes:

- Industrial case studies across a broad range of the manufacturing spectrum including **Croda International plc, Thomas Swan & Co. Ltd, GlaxoSmithKline plc** *(tbc)* and **Biome Bioplastics Ltd**
- Insight into Industrial Decarbonisation and Energy Efficiency Roadmaps to 2050
- Drivers for change including the Business Case for Green and REACH
- Guidance on the transition to green manufacturing and circular economy
- Design and selection of greener solvents
- Platform Molecules: Using the Diverse Functionality of Bio-derived Building Block Chemicals for the Synthesis of Polymer and Solvents
- Online learning resources and associated tools including metrics and solvent selection
- Opportunities for knowledge transfer, discussion and networking

***A one-day symposium on greener and more sustainable chemical manufacturing co-organised by CHEM21, the Chemical Industries Association and the Green Chemistry Centre of Excellence***

**Register your place for free by Wednesday 17th May 2017 at https://greenmanufacturing21.eventbrite.co.uk**

CHEM21 is Europe's largest public-private partnership dedicated to the development of manufacturing sustainable pharmaceuticals and brings together six pharmaceutical companies (GlaxoSmithKline, Bayer, Janssen, Orion, Pfizer and Sanofi), 13 Universities and four small to medium enterprises from across Europe (www.chem21.eu). CHEM21 has received funding from the Innovative Medicines Initiative Joint Undertaking under grant agreement n°115360, resources of which are composed of financial contribution from the European Union's Seventh Framework Programme. (FP7/2007-2013) and EFPIA companies' in kind contribution. www.imi.europa.eu