

Chemistry Newsletter

Spring 2018

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Important Dates

University Open Days

Fri 6th July 2018
Sat 7th July 2018
Sat 8th Sept 2018
Sun 9th Sept 2018
Sat 13th Oct 2018

Semester 2:

Mon 29th Jan to Sat 16th June 2018

Easter vacation:

Sun 18th March to Sun 15th April

Easter closure:

Friday 30th March to Wed 4th April
2018

Semester 2 exams:

Mon 21st May to Fri 8th June 2018

Chemistry Graduation:

Fri 27th July 2018

Supplementary exams:

Mon 20th to Fri 31st Aug 2018

Introduction



Chemistry Graduation, inset picture: Prof Andrew Hector

As Director of Programmes I'm pleased to be able to introduce our second newsletter. Within Chemistry we deliver a range of high quality undergraduate and taught postgraduate programmes.

The achievements of our students after they leave us and the satisfaction with our courses that undergraduates express through the National Student Survey attest to this quality. Over my first few months in this role we have delivered a number of improvements initiated by my predecessor – small group tutorials, changes to exam paper formats, new part 4 undergraduate modules and the MSc Electrochemistry and Battery Technologies that will launch in October.

Further exciting new programmes are currently under development and should be ready to accept students in 2019. We can also make our existing programmes even better and there are a number of improvements that we will implement over the coming months.

Do you have an article you wish to contribute to a future edition?

Please email Lynda Brown ljb2@soton.ac.uk or Dawn Dunlop D.Dunlop@soton.ac.uk



Celebrations and congratulations

Chemistry Research Fellow takes his research to Parliament



Dr. Lingcong Meng, 30, a Research Fellow in Electrochemistry, attended Parliament to present his chemistry research to a range of politicians and a panel of expert judges, as part of STEM for BRITAIN on Monday 12 March. Lingcong was shortlisted from hundreds of applicants to appear in Parliament.

On presenting his research in Parliament, he said, "Attending STEM for Britain gives me the opportunity to tell more people about our research, extending our impact not only in the scientific field. My work is part of the ADEPT project, focusing on the electrodeposition of functional materials for thermoelectric application, including power generation, and electronic cooling and heating. Our goal is to push the state of the art of electrodeposition and device design at the nanoscale".

Stephen Metcalfe MP, Chairman of the Parliamentary and Scientific Committee, said:

"This annual competition is an important date in the parliamentary calendar because it gives MPs an opportunity to speak to a wide range of the country's best young researchers. These early career engineers, mathematicians and scientists are the architects of our future and STEM for BRITAIN is politicians' best opportunity to meet them and understand their work."

Congratulations to Benjamin Jeffries, PhD student in Bruno

Linclau's group who won 1st place at a poster session. The poster titled "An investigation on the effects of CF_3/CH_3 exchange in aliphatic and perfluoroalkylated alcohols on lipophilicity" was presented at the "17th Annual RSC Fluorine Subject Group Postgraduate Meeting" hosted by the University of Leicester from the 18th-19th of September 2017.

Congratulations to three of our final year PhD students who have been successful in the University's EPSRC Doctoral Prize round this year, each securing a 12 month fellowship to lead their proposed project. The successful candidates are Nina Meddings (Garcia-Araez group), Florian Modicon (Goldup group) and Francesco Monzittu (Reid group).

Promotions

Congratulations to Dr Paul Duckmanton who has been promoted to Principal Teaching Fellow.

Awards and Prizes

Teaching Awards

Congratulations to Professor David Read who was awarded with the immense honour of a National Teaching Fellowship from the Higher Education Academy. David has made many contributions to innovative teaching and learning, including the introduction of in-class voting technology, lecture capture and 'flipped' teaching, reversing the typical lecture format and homework elements of a course.



Prof David Read

Further Awards

VC Awards:

Following a record number of nominations, Chemistry was delighted to have four colleagues shortlisted for the 2017 Vice-Chancellor's Awards.



VC Award Chemistry nominees

Colin Flowers won the VC award for Mentoring. Colin is passionate about his job and the laboratories that he manages. Students describe him as an 'inspirational role model' who always makes time to help them.



Dr Colin Flowers

Senior Teaching Fellow in Chemistry, Dr Paul Duckmanton was recognised for his contribution to the student experience. He won a Vice-Chancellor's Award for his work on multidisciplinary modules and overseeing all of the research placements in Chemistry.



Dr Paul Duckmanton

Dean's Awards:

Congratulations to Chemistry colleagues Maria Concistre, Elizaveta Suturina and Christopher Cave-Ayland who were all recognised for their exceptional contributions by receiving Dean's Awards in December 2017.

Maria Concistre (Education) for her initiatives in teaching and making a valuable contribution to education for chemistry in the important area of maths for chemists.

Elizaveta Suturina (Research) for her work on lanthanide magnetism; she has authorship on 11 papers in 2017 and also won the prize for the best talk at the FNES Postdoctoral Conference 2017.

Christopher Cave-Ayland (Citizenship) for his important contributions including supporting the use of software ProtoMS, delivery of a programming 'boot camp' for undergraduates and the delivery of software training workshops for industrial partners.



Dean's Award recipients

Chemistry graduate Adam Hedger has been recognised for the quality of his research placement dissertation into the metabolic labelling of DNA replication in the **Undergraduate Awards**. His work was highly commended and ranks in the top 10 per cent of submissions from students around the world.



Adam Hedger

Further Prizes

Luckhurst-Samulski Prize

The latest research into liquid crystals, the technology behind flat screen LCD displays, has been recognised by the award of a major prize in this multidisciplinary field to University of Southampton researchers.

Dr Martin Grossel, Professor Geoffrey Luckhurst, Dr Bakir Timimi and Dr Neil Wells from Chemistry, together with fellow researchers Dr Alya Dawood, (formerly of Southampton), Professor Robert Richardson (Bristol) and Professor Yousif Z. Yousif, received the Luckhurst-Samulski Prize for their paper on the 'twist-bend nematic phase formed directly from the isotropic phase' at a lunch with the publishers Taylor & Francis.



The Luckhurst-Samulski Prize was launched in 2009 by the international academic journal, *Liquid Crystals*, to recognise the best paper published over the last year; it is named after its founding Editors. In 2016, more than 230 papers were considered for the honour. The Selection Committee regarded Southampton's research as highly significant and certain to trigger further experimental and theoretical work.

"This is a tremendous honour for my colleagues. Geoffrey Luckhurst is one of the pioneering Fathers of the development of liquid crystals. Following his formal retirement from Southampton in 2004, Geoffrey has continued with an active research programme in Southampton exploring new liquid crystal behaviour and phases as an Emeritus Professor; I am delighted that their work has been recognised in this way." Prof Gill Reid.

UG contributions to research papers

Undergraduate projects in Chemistry contribute widely to the success of our department's research output, we would like to celebrate this by highlighting a number of the papers published with our undergraduates as co-authors.

Rob Szpera:

"The synthesis of the 2,3-difluorobutan-1,4-diol diastereomers"

Beilstein J. Org. Chem. **2017**, 13, 2883–2887.

DOI: 10.3762/bjoc.13.280

Alejandro Sadiq:

"Towards the Shell Biorefinery: Sustainable Synthesis of the Anticancer Alkaloid Proximicin A from Chitin"

ChemSusChem, **2018**, Vol 11, 3, 532-535

DOI: 10.1002/cssc.201702356

Timothy Barker:

"Spin-isomer conversion of water at room temperature, and quantum-rotor-induced nuclear polarization, in the water-endofullerene H₂O@C₆₀"

Chemical Physics (physics.chem-ph) **2018**,

arXiv:1802.00676

David Salazar Marcano and Jesse Ferreira da Silva:

"Preservation of Nuclear Spin Order by Precipitation"

ChemPhysChem **2018**, Vol 19, 1, 40-44

DOI: 10.1002/cphc.201701189

Joseph Cadden:

"The Rich Solid-State Phase Behavior of dl-Aminoheptanoic Acid: Five Polymorphic Forms and Their Phase Transitions"

Cryst. Growth Des., **2018**, 18 (1), pp 242–252

DOI: 10.1021/acs.cgd.7b01175

Chemistry News & Events

The BRSG, the Magnetic Resonance Group of the Institute of Physics, will hold their Annual General Meeting in Southampton on 25th June 2018, on "Advances in experimental and simulation methods for NMR and EPR". Further details on registration and programme will follow in due course.

This meeting will also celebrate the careers of Prof. Jim Emsley and Prof. Geoffrey Luckhurst on the occasion of their 50th anniversaries in Chemistry at Southampton (pictured below from earlier times in Chemistry).

Further details available from Dr Marina Carravetta, who is organising the AGM.



Prof Jim Emsley



Prof Geoff Luckhurst

Building news

Energy Saving Ovens

A successful proposal on behalf of the faculty has been made to the University Carbon Management Fund to replace old, inefficient glassware drying ovens.

In an audit it was found that some 25 or so ovens throughout Chemistry (and a further 10 at other FNES sites) are considerably more than a decade old, with 1 or 2 estimated at being up to 30 years old!

Metering of some of these indicated that they are drawing twice as much power as modern, more environmentally sustainable ovens. When taking into account insulation factors and integral timers, it was clear that replacement would make a noticeable impact on our electricity bill! In fact, the pay-back time is calculated to be about 6 years on energy savings alone.

The procurement process is underway and we expect to be taking delivery and placing them into labs during this summer.

Staff 1 to 1

Q & A with Ann in the tearoom



Ann French

When did you start working in Chemistry?

I started working in the tearoom in September 2011, initially on the temp bank and then as a permanent member of staff. I began working for the University in 1991 as a "washer-upper" in the Garden Court, before being promoted to serving food and I spent some time working in the Piazza. I was holiday cover for the Blue Room restaurant until I became permanent and worked there for 8 years.

How did you come to work in Chemistry?

I was forced to retire from the Blue Room at retirement age along with 2 other colleagues, so I had a 14 month gap before coming to work here. I knew Andrea Russell from my time in the Blue Room and she had mentioned that a position was available in Chemistry and wondered if I would be interested. Unfortunately, I lost the phone number but eventually I was contacted by the temp bank *via* my daughter who was working in the staff club at the time.

What is the best thing about working here?

Working keeps my brain sharp and the people here are lovely. I enjoy sharing a chat or joke when serving. I always aim to please and I have introduced a number of different drinks (herbal, fruit and decaffeinated teas *etc.*) and added to the range of crisps and snacks. I also like it when students and staff return after being away for a while and always come and say hello.

What is the worst thing about working here?

I can't really think of anything, but it does annoy me when the kitchen isn't kept clean and glasses and mugs are not returned and other items disappear!

What do you do when you are not working?

I enjoy cooking and baking and spend a lot of time working on my garden. I walk my 2 dogs, Suki and Oscar, and also look after 2 guinea pigs, 3 rabbits and a very loud cockatoo called Cookie! I like to spend time with my grandchildren and great grandchildren.

Have you any plans to retire?

Hopefully I will keep going as long as possible and only stop when I have to use a Zimmer frame!

Dr Simon Gerrard

Simon started in Chemistry at Southampton in 2004 undertaking a PhD with Prof. Tom Brown, following that he completed PDRA posts with both Dr Eugen Stulz and Prof. Tom Brown.

Since 2013, Simon has taught undergraduate organic chemistry, and has held the important roles of deputy admissions tutor and outreach officer. Simon has organised countless student recruitment and outreach events from twilights to chemistry challenges and work shadowing, winning the Dean's prize for public engagement in 2016.

Thanks to Simon's tireless work over the last 3 years we have been able to engage more schools and pupils than ever before in our outreach activities, bringing the wonders of Chemistry to an eager and enthusiast audience. Simon has also played an active role in training postgraduate and undergraduate students in their roles as facilitators during outreach events, providing them with opportunities to enhance their communication and management skills.

Simon is leaving Chemistry at Easter, moving to his new teaching fellow position at Imperial College London. Simon will be greatly missed and we would like to wish him all the best in his future career.



Dr Simon Gerrard

Outreach

Twilights

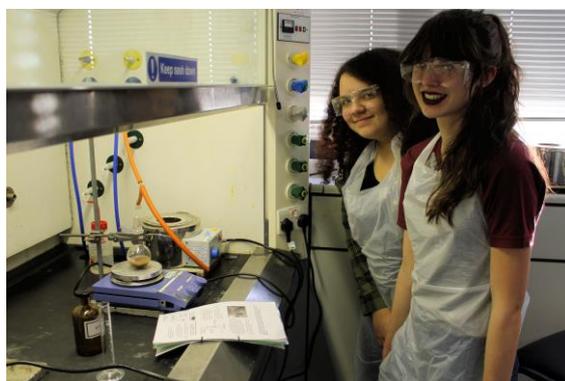
Our Year 12 Chemistry Twilight practical outreach events were a great success again this year. Over seven dates during January, we saw nearly 300 students (over 50% female) from local colleges, and as far afield as Oxford, Reading and Surrey.

Now in its thirteenth year, we invite AS-level students to experience working in an undergraduate teaching lab for the afternoon. They gain hands-on skills in natural product extraction of Trimyristin from nutmeg, recrystallisation and analysis using IR spectroscopy, melting point determination and TLC.

It is always enjoyable to run and the success is testament to the hard work and enthusiasm of our student demonstrators and staff. We would like to thank everyone involved in the events for all their efforts.

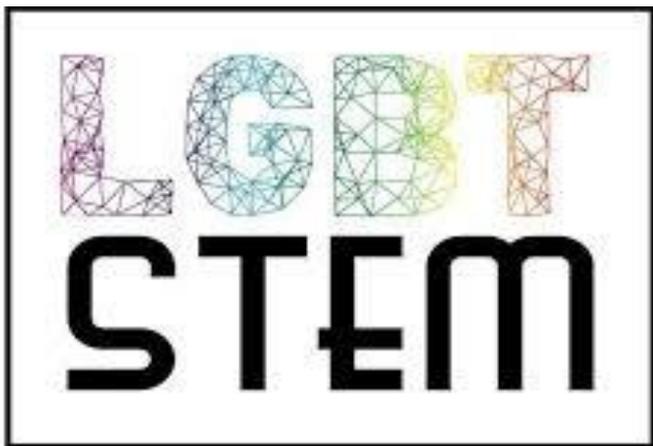
"Many thanks yet again for the twilight session. As ever my students were greatly impressed and genuinely enjoyed the experience." – Teacher from Barton Peveril College

"It was a great session and the feedback from the students was overwhelmingly positive." – Teacher from Twynham School



Features

LGBT engagement in STEM



The world we live in is constantly changing and the need to adapt and adjust is ever present. These changes are often for the better and one such example of this is the representation of the LGBTQ+ community in more classically male, hetero-normative environments. Science, technology, engineering and mathematics have traditionally been considered as masculine and heterosexual fields. LGBT STEM is a project that focuses on “improving LGBTQ+ visibility in science, technology, engineering and mathematics” by giving LGBTQ+ scientists a platform from which to showcase their roles within STEM and act as role models to inspire the next generation of LGBT scientists.

Their flagship event, the LGBT STEMinar, is a symposium designed to showcase research being undertaken by scientists within the community. It also acts as a platform for early career researchers to meet with more established LGBTQ+ scientists from academia and industry. Early career researchers have the opportunity to give poster presentations, flash or short talks. Attendees benefit from seminars delivered on a diverse range of STEM related topics from patent law to publishing, as well as engagement workshops that discuss issues such as: how to achieve better LGBTQ+ representation in STEM.

The website offers information on news and upcoming events within the LGBTQ+ STEM community alongside short interview biographies of LGBTQ+ scientists. A short form is also available for you to add your own short biography. To find out more and get involved visit the website at www.lgbtstem.wordpress.com or follow them on Twitter @LGBTSTEM.

Alex Maryan-Instone is the LGBT representative in the School of Chemistry. If anyone has any suggestions, issues or comments with regards to the LGBT community within chemistry or the wider university, please don't hesitate to contact him alex.maryan-instone@soton.ac.uk.

Dr Sally Bloodworth writes for Chemistry World

Those with an interest in the history of science might wish to look out for upcoming issues of the Royal Society of Chemistry's membership publication – *Chemistry World*.

In a new series of articles Dr Sally Bloodworth will be uncovering the stories behind some of the most important discoveries in organic chemistry, including some famous 'named' reactions, reagents and rearrangements!



Dr Sally Bloodworth

The series follows several pieces that Sally has contributed to *Chemistry World*. Content is free to access for RSC members and even includes a recent foray into palaeoclimatology in “A land that time remembered”.

<https://www.chemistryworld.com/opinion/what-is-the-secret-of-crudale-meadow/3008126.article>

Features

Internationality

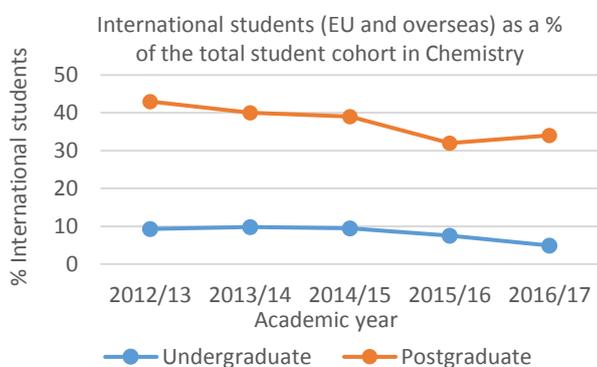
Across the university there are over 6500 international students, 25% of the student body, from 135 countries as illustrated in the university's Global Partnership Map

(<https://www.southampton.ac.uk/global-connections/global-partnerships-map.page>)



Global Partnership Map

The diverse international community of the University is reflected in the Chemistry department. For the 2016/17 academic year, international students represented 5% of undergraduate students and 33% of postgraduate students. For both undergraduate and postgraduate students, the international student cohort was equally split between students from within the EU and those from outside the EU.



FNES is currently the only faculty in the university to have an International Student Support Group to promote an integrated community. The group offers skills and language training and also arranges social activities, including recent trips to the New Forest and the Royal Society Summer Science Exhibition in London.

International PhD students within Chemistry have shared their experiences of the UK and the department. Xiang from China says, "when I first came here, I found the department to be very friendly. I still think Chinese food is better than UK food, except for fish and chips!" Firas from Iraq says "I have found the department to be like one team and I like the number of quiet study areas in the university, but the UK is too cold!"