Chemistry Update

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Calendar of Events

Research Seminar
Speakers: Nadia Moesch-Zanetti, University of Graz and Lukas Geciaukas, University of York (AKDK Group)
Date: Wednesday 3 May
Time: 1pm-2pm
Location: C/A/101

Research Seminar
Speaker: Dr Paul Hunt, Research Team Leader Croda
Date: Thursday 11 May
Time: 1pm-2pm
Location: C/A/122

Annual Equality, Diversity & Inclusion Beacon Lecture
Speaker: Prof Robert Mokaya OBE, University of Nottingham
Date: Friday 12 May
Time: 1pm-2pm
Location: C/A/101

Research Seminar
Speakers: Prof Charlie Fehl, Wayne State University and Dr Mathew Horrocks, University of Edinburgh
Date: Wednesday 17 May
Time: 1pm-3pm
Location: CL/A/057

Research Seminar
Speaker: Matt Campbell, Charles River (Contract Research Organisation)
Date: Monday 22 May
Time: 1pm-2pm
Location: CL/A/057

Research Seminar
Speaker: Dr Ulrich Hintermair, University of Bath
Date: Tuesday 23 May
Time: 1pm-2pm
Location: CL/A/057

Research Seminar
Speaker: Dr Marina Freitag, University of Newcastle
Date: Wednesday 24 May
Time: 1pm-2pm
Location: CL/A/057

This issue:

York chemists receive funding for new FAAM Airborne Laboratory instruments

Technical specialists from the Wolfson Atmospheric Chemistry Laboratories in the Department of Chemistry at the University of York have been successful in funding applications for two new science instrument projects for the Facility for Airborne Atmospheric Measurements (FAAM) Airbourne Laboratory.

The FAAM Airborne Laboratory is a world-class research facility dedicated to the advancement of atmospheric science, managed by the National Centre for Atmospheric Science. The aircraft is specially adapted and managed by a team of scientists, engineers, flight technicians and project managers who provide a complete package of support for the scientific community. The Mid-Life Upgrade (MLU) Programme aims to deliver a range of upgrades and enhancements to the aircraft, its measurement capabilities, and its research impact, extending its useful life to 2040.

Dr Pete Edwards and Dr Stephen Andrews from the Wolfson Atmospheric Chemistry Laboratories (WACL) in the Department of Chemistry applied for funding to support the work of the MLU Programme in relation to this upgrade and were awarded a combined budget of nearly £2 million.

The first project, Laser-based Observer of Key Inorganics (LOKI) is managed by Dr Pete Edwards and will provide new capability to detect critical gas phase compounds with the potential for significant improvements in understanding air quality and climate. This state-of-the-art instrument will allow gas concentrations and flux measurements in remote and clean environments from the air to be monitored. The use of new laser technologies will mean that LOKI will be able to measure gases at the single, or even sub, part per trillion mixing ratio at high time resolution. This sensitivity will be particularly important in the transition to net-zero and ensuring that emissions such as sulfur dioxide and nitrogen oxides fall.

The second, more recently awarded grant is towards the Trace Halogenated Organics archiver (THOr). This instrument is led by Dr Stephen Andrews and is a fast gas chromatograph and high resolution time-of-flight mass spectrometer. It will offer high-frequency and high-resolution measurements across a range of volatile organic compounds, providing a historical archive for retrospective analyses of as-yet-unidentified species. THOr accurately quantifies key components for monitoring of primary pollution, tropospheric ozone production and secondary organic aerosol formation. It can also measure halogenated gases affecting stratospheric ozone and identify unknown pollutants from accidental or deliberate release.

These two new upgraded instruments will support the MLU in producing world-leading atmospheric science and research outputs. Staff from the MLU team visited the WACL laboratories this month to meet with members of the project teams and to start discussions around the integration and installation of both LOKI and THOr instruments to the aircraft. There was also an opportunity to assess the resources York needs to deliver the projects effectively, and see the specialist labs and tools they have onsite to support them in delivering these.

“LOKI and THOr are just two of the initial batch of new instrument capabilities that will be delivered through the MLU Programme for the FAAM Airborne Laboratory,” says MLU Project Manager Ed Andrews. “These projects represent a step-change in measurement capability in their respective fields and will be well supported by the team at WACL in their delivery and subsequent operation. There are already plans to utilise both of these instruments as part of upcoming FAAM campaigns and these will help to optimise their use. These capabilities will be fully available for use as part of FAAM from 2025 and any parties interested in utilising them can get in touch with either the team at WACL or FAAM for more information.”

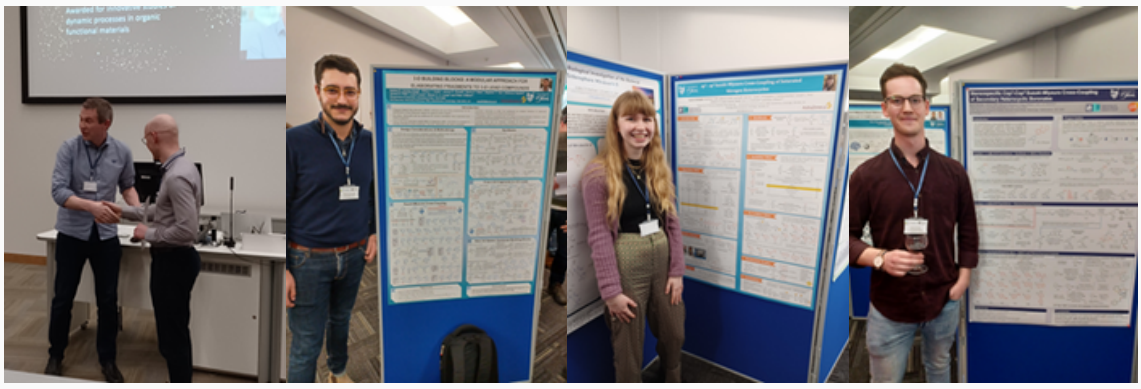
To find out more about the Mid-Life Upgrade, visit the FAAM website.

O’Brien Group News

A brief update from the O'Brien Research group. In February, it was brilliant to see Lucy Tomczyk present at the research symposium showcasing women in synthetic chemistry, which was held in the department in February, and which Lucy helped organise. Well done Lucy!

At the end of March, the O’Brien group attended the RSC Organic Division North East Regional Meeting at Northumbria University. York was by far the best represented university and we even managed to sneak two speakers onto the programme… Lianne Willems and Paul McGonigal. This was a result of Paul receiving a RSC Harrison-Meldola Prize at this meeting (congratulations Paul!). Even better was the fact that the prize was presented by our very own Will Unsworth (see photo) who was acting as the RSC representative on the day.

It was a great day of organic chemistry and all members of the O’Brien group presented high quality posters (see photo gallery) – Andres Gomez-Angel, Lucy Tomczyk, Stuart McHale, Stuart Smith, Will Butler, Xinyu Wang, Yuran Wang and Islam Araar. Pleasingly, the poster presented by Yuran and Islam scooped first prize – well done to both of you!



Johnson Matthey Poster Competition 2023

The 2023 Johnson Matthey Poster Competition took place on 30th March with 25 posters on display for viewing in the department.

PhD students in Year 3 are asked to display a poster about their research, which is scored by judges who look at presentation, scientific content and student discussion. Scores are collated to generate winners who were confirmed this year by Dr Norman Macleod, our guest from Johnson Matthey, and Professor Gideon Grogan as Chair of the event.

At the end of the event, the following three winners were confirmed and each winner a cash prize, thanks to the generous support of Johnson Matthey:

Ruhee Dawood (AJA)
Fluorenyl-Embedded Helicenes as Aggregation-Enhanced Emitters

Callum Gater (SBD)
Using SABRE to facilitate the detection of a range of non 15N labelled substrates with long lifetimes

Promeet Saha (PRJM)
Rupturing Aromaticity by Periphery Overcrowding

The afternoon ended with a departmental seminar where winners were announced, followed by a talk from our guest Dr Norman Macleod on recent developments in JM methanol synthesis catalysis for sustainable technologies. As always, we are very grateful to Johnson Matthey for their generous sponsorship of the event. Thanks to all participants and everyone who came along to support the event.

Photo of prize winners: l-r: Promeet Saha, Ruhee Dawood, Callum Gater and Norman Macleod from Johnson Matthey

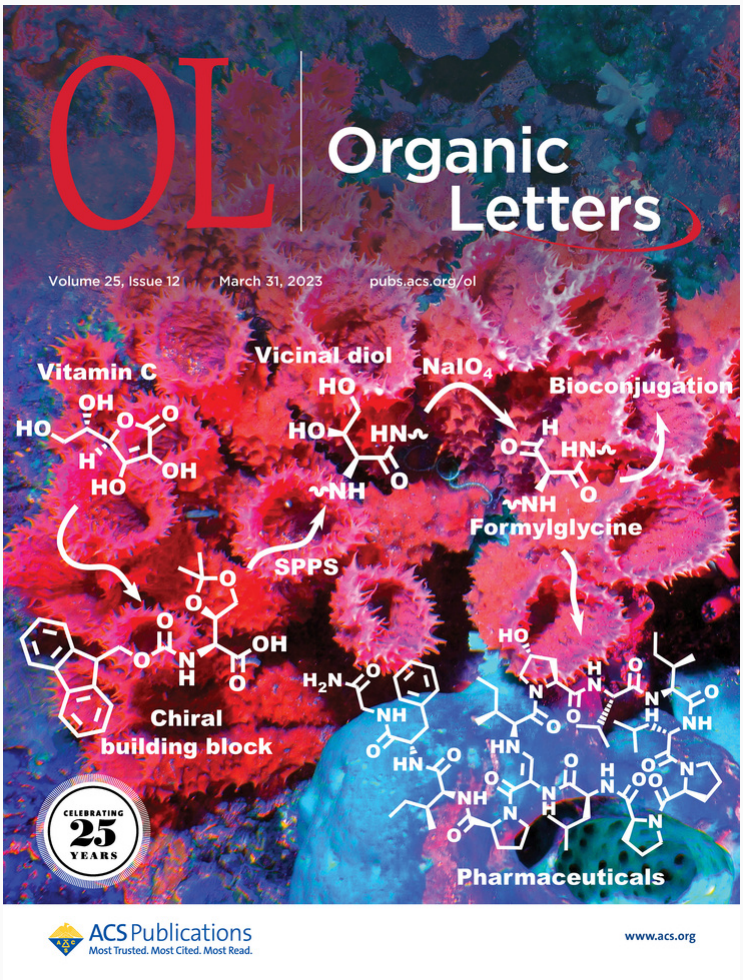
Annual Equality, Diversity & Inclusion Beacon Lecture

Professor Robert Mokaya OBE from the University of Nottingham will be presenting to the department on Friday 12 May 2023, 1pm-2pm in A101.

Professor Mokaya plays a leading role in promoting EDI in higher education. He is a role model and mentor to Black academics and students, was a founding member of the RSC Pan Africa Chemistry Network and has worked with African researchers on various projects around sustainable energy.

In this Annual Equality and Diversity Beacon Seminar Robert will present his work on "Porous carbons as sustainable energy materials" and also discuss his EDI activities alongside this.

Front cover of Organic Letters



Congratulations to Nicholas Yates, Martin Fascione and the Chemical Biology team, on their front cover article in the March edition of the journal Organic Letters.

Read the full article here.