

ANALYTICAL MATTERS

ISSUE 12 – SUMMER EDITION 2019

UPCOMING EVENTS

A selection of analytical events coming up in the next few months

Hands-on UV-Vis

5th September, Milton Keynes
[more information](#)

Bright Spark Symposium

13th September 2019, Brighton
[more information](#)

ChromSoc - 23rd International Reid Bioforum

23rd-25th Sept 2019, Cambridge
[more information](#)

Training Course - Evaluating Measurement Uncertainty

16th-17th Oct 2019, Teddington
[more information](#)

Visit the [webpage](#) for more Analytical Events

CPD RESOURCES

Analytical Methods Committee Technical Briefs

Technical information on a wide range of analytical techniques, found [here](#)

RSC online CPD

[Log](#) your continuing professional development

Welcome to the twelfth issue of Analytical Matters, the e-newsletter of the Analytical Division of the Royal Society of Chemistry (RSC). Analytical Matters aims to showcase the wide range of analytical science activities being run across the Royal Society of Chemistry Analytical Division as well as linking with parts of the UK analytical community beyond our membership. Following the RSC AGM on 10th July there are some changes to Analytical Division Council. I'd like to thank John Dean (Honorary Treasurer), Tony Bristow (Elected Member), Arun Kamath (Elected Member), John Langley (Appointed Member) and Steve Ellison (AMC Chair) who completed their terms on Council. I'd also like to welcome our new President Elect, Diane Turner and new Elected Members Vicky Hilborne and Roy Goodacre, Appointed Members Leon Barron and Melanie Bailey and new AMC Chair Colin Creaser. We look forward to working with you during your term.

It's been a busy few months for the Analytical Division, we announced the 2019 Division Award winners, held our Analytical Research Forum showcasing cutting edge analytical chemistry for early career researchers and supported the Schools' Analyst Competition final. Further details included in the newsletter.

Please send your feedback and any content for the next issue by October 31st by emailing the Editor [here](#).

With my very best wishes,

Duncan Graham FRSC

President, RSC Analytical Division



Analytical Division Council Vacancy

We currently have a vacancy for Honorary Treasurer. For further information about the role and information on how to apply contact analyticalmatters@rsc.org. Closing Date: **Friday 30th August**.

CONGRATULATIONS TO OUR 2019 AWARD WINNERS

Recognising excellence across analytical chemistry

Joseph Black Award

Awarded to Dr Philippe Wilson, De Montfort University for the development and application of novel and engaging pedagogical techniques and ideas to the research-led teaching of analytical chemistry.



Sir George Stokes Award

Awarded to Professor Tuan Vo-Dinh, Duke University for outstanding and sustained contributions to analytical science through innovations in the fields of photonics, spectroscopy, molecular biology and nanotechnology.



Theophilus Redwood Award

Awarded to Professor Perdita Barran, The University of Manchester for excellence in the fundamental and applied development of biological mass spectrometry and communication of this work in both print and video media.



Nominations for the 2020 Prizes and Awards open in October 2019, so visit the [webpage](#) to find out how you can nominate individuals and teams who are making a positive impact for analytical chemistry.

We have an **open nomination process** whereby any RSC member at any career stage can make a nomination and we welcome and encourage nominations by and for individuals from underrepresented groups.

The analytical chemistry awards open for nomination in 2020 are:

| | |
|---------------------------------------|---|
| Early Career Awards | <ul style="list-style-type: none">• Joseph Black Award - for an early career scientist in any field covering the practice and teaching of analytical science.• Ronald Belcher Award - given for work on an analytical topic, by a graduate of a British or Irish university. |
| Science Communication Award | <ul style="list-style-type: none">• Theophilus Redwood Award – given to a leading analytical scientist who is an outstanding communicator |
| Voluntary Service Award | <ul style="list-style-type: none">• Anne Bennett Memorial Award for Distinguished Service - recognises exceptional voluntary services over a period of years to the RSC Analytical Division. |
| Industry Award | <ul style="list-style-type: none">• Industrial Analytical Science Award – recognises the work of industrial analytical scientists and given for outstanding contribution to analytical technology or methodology in industry. |
| Established Practitioner Award | <ul style="list-style-type: none">• Robert Boyle Prize for Analytical Science - awarded for outstanding contributions to analytical science. |

HIGHLIGHTS FROM RECENT ANALYTICAL DIVISION ACTIVITIES

Analytical Research Forum 2019

On the 25th June 2019, 80 delegates from industry and academia came together for the Analytical Research Forum at Burlington House, London. This flagship event of the Analytical Division provided a vibrant and inspiring environment for early career researchers to showcase their work alongside established professionals in the field of analytical science. The day kicked off with a series of talks ranging from mass spectrometry and forensics to imaging and breath analysis. The morning session ended with a lively panel discussion about careers in analytical chemistry where established academic and industrial professionals in the field shared their knowledge and best tips with delegates. The poster session hosted during the lunch break offered another opportunity for networking and to exchange research ideas.

The second part of the day saw yet more brilliant researchers presenting their work with talks ranging from water analysis to advances in spectroscopic techniques. During this session, we were delighted to be joined by the winner of the 2018 Ronald Belcher Award, Dr Kamonwad Ngamchuea (Suranaree University of Technology) and by Professor Graham Cooks, Purdue University, whose excellent plenary talk on ambient ionization mass spectrometry was just the “cherry on top” of this fantastic day of science and networking.

We would like to congratulate our talk prize winners Heidi Fisk (AstraZeneca, first prize) and Anastasia Kapara (University of Strathclyde, second prize) and, our poster prize winners Jemma Clark (AstraZeneca, first prize), Caoimhe Robinson (Tyndall National Institute, second prize) and Janella de Jesus (University of Surrey, participant poster prize) and to thank the Analytical Chemistry Trust Fund, *Analyst*, *Analytical Methods* and *Lab on a Chip* who kindly sponsored the prizes.

We would also like to thank our delegates, presenters, judges and panellists for participating to the event and contributing to its everlasting success.

Save the Date for next year's ARF – Tuesday 16th June, London



Dr Diane Turner with Caoimhe Robinson (left) and Jemma Clark (middle) and Dr Annika Friberg with Janella de Jesus (right).



Professor Duncan Graham with Ronald Belcher Award Winner (left) and talk winners

“Very engaging speakers with an interesting range of topics and experience, good opportunities to network in a fantastic location.”

“Great talks, timing and broad scientific scope. A great forum to get feedback from experienced researchers.”

HIGHLIGHTS FROM RECENT ANALYTICAL DIVISION ACTIVITIES

Schools' Analyst Competition Final 2019 19 - 20 June 2019, University of Manchester

After winning their regional heats, the 26 competing teams were faced with experiments based on the International Year of the Periodic Table (IYPT) for this year's Schools' Analyst Competition final. Carrying out multiple experiments involving a complexometric titration, mass spectrometry, inductively coupled plasma atomic emission spectrometry and colorimetry they were able to identify the unknown element.

Congratulations goes to this year's winning team of year 12 students from King Egbert School, representing the North East Region. They received the glass trophy and £3000 prize together with each of the three team members receiving Amazon vouchers. In second place were Charters School, representing the South East Region and in third place were Nelson Colne College, representing the North West Region. Both teams also received money for the school and individual Amazon Vouchers.

The Analytical Division Council would like to thank Professor John Dean, Northumbria University for coordinating the entire competition and chairing the judging panel for the final. Thanks also goes to the University of Manchester for hosting the final and all the staff and student helpers on the day, in particular Dr Philip Riby (host and judge), Dr Frank Mair (experiment design), Professor Perdita Barran (judge) and Meriel Maddocks (local organisation and liaison) and sponsors Shimadzu Ltd. The Analytical Division Council would also like to thank all the Analytical Division Regions for organising the regional heats for this year's competition and the 339 schools that participated.

The competition wouldn't be possible without the generous support of the Analytical Chemistry Trust Fund and the many other organisations who also provided financial sponsorship to support this national event. To all the sponsors, the Analytical Division expresses its gratitude.



(SAC Group Final): All the Finalists at the 2019 Schools' Analyst Competition at the University of Manchester.

You can read more about the winning team in an article featured in their local newspaper [here](#).

Want to get involved in next year's Schools Analyst Competition?

Please contact your [Regional Analytical Division Committee](#) to find out more about where the heats are held in your region or **Professor John R. Dean**, Schools' Analyst Competition Coordinator John.Dean@northumbria.ac.uk.

FUNDING AVAILABLE FROM THE ANALYTICAL DIVISION

Travel Grants for PhD Students and Early Career Scientists

Members can apply to the Analytical Division for a competitive travel grant to attend any scientific conference or workshop anywhere in the world. Grants are available to cover domestic (up to £200), continental (up to £400) and intercontinental (up to £800) travel to meetings where applicants give oral or poster presentations (we will also consider applicants not intending to present if their attendance will be a significant benefit to their career). Applications are assessed on a monthly basis – apply online [here](#).

AD has awarded 25 Travel Grants so far this year to PhD students and Early Career Scientists

FUNDING AVAILABLE FROM THE ANALYTICAL DIVISION

Scientific Meetings Grant

You can apply to the Analytical Division for up to £2000 to support your scientific meeting, including (but not limited to) scientifically enhancing your own existing meetings (international speaker expenses, for example) or fully supporting a "no frills" research meeting or workshop. Applications are judged every 3 months and the next closing date is **31 August 2019** – apply online [here](#).

Meetings AD has supported so far this year are:

- 35th International Conference on Environmental Geochemistry & Health
- VI International Caparica Conference on Analytical Proteomics 2019
- Emerging Analytical Professionals (further details below)
- University of Reading School of Chemistry, Food and Pharmacy Early-Career Researchers Network Meeting
- 9th European Oxysterol Research Network Meeting
- Journées de Chimie Analytique

OTHER RSC FUNDING OPPORTUNITIES

RSC Grants for Carers

The RSC has recently launched Grants for Carers. These grants have been introduced following the *Breaking the Barriers* report which found that 78% of chemists working in UK academia felt that managing parenting and/or caring responsibilities had an impact on women's retention and progression. Open to anyone with caring responsibilities, you can apply for up to £1,000 per year to support attendance at chemistry-related meetings, conferences or workshops or professional development events. For more details please visit the [Grants for Carers page](#), and please support us in spreading the word about these grants within your networks.

Researcher Mobility Grant

The RSC [Researcher Mobility Grant](#) supports collaborations in research and gives early career researchers the experience of visiting other labs and expanding their networks. We have not only helped to enable and improve our member's scientific projects, but also encouraged PhD students to continue their academic careers after their studies. The next round of the Researcher Mobility Grant opens 2 September and closes noon 21 October.

Research Fund

The RSC [Research Fund](#) provides small sums of money for chemicals and equipment to enable high quality research that would otherwise not be funded. With a focus on early career researchers and those at less well-funded institutes, the Research Fund has a strong track record in funding pump-priming research that helps members to establish themselves (for example, by producing results that support applications for larger grants). The next round opens on 2 September and closes at 2 pm BST 7 October.

IYPT Grants

Grants up to £500 are available from the RSC to support members, ChemSocs and Learn Chemistry Partnership schools to organise activities taking place throughout the year and celebrating IYPT 2019. To apply for a grant up to £500 please submit an application through our [online application system](#). The next deadline is 12 noon on Monday 14 October 2019.

OTHER FUNDING OPPORTUNITIES

Analytical Chemistry Trust Fund (ACTF)

ACTF, an independent charity (Reg. No. 268893) was established in 1974. Its primary task is to support analytical science in the UK and abroad. It uses the returns from its capital investments to spend a significant sum supporting PhD programs, summer studentships, research fellowships and support for analytical conferences as well as educational initiatives.

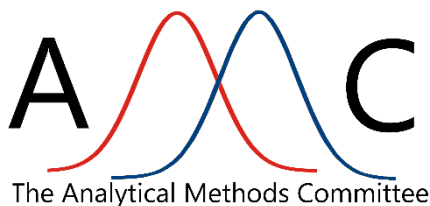
For further details please see the Analytical Chemistry Trust Fund [webpage](#).

Call for CAMS Fellowships

Applications are currently open for CAMS-UK Fellowships is to assist early career analytical chemists within 5 years of their first full-time junior academic appointment at a UK or Irish HEI to establish their own independent analytical science research identity. Apply online [here](#).

Closing date for applications: Friday 6th September 2019





Looking to gain chartered status? The Analytical Methods Committee (AMC) provide Technical Briefs, ideal for supporting continuing professional development.

The Analytical Methods Committee (AMC) is the Committee of the Analytical Division (AD) that handles matters of technical importance to the Analytical Science Community. Made up of expert Sub-Committees and designated representatives, the broad aim of the AMC is to participate in national and international efforts to establish a comprehensive framework for appropriate quality in chemical measurement, often working alongside numerous accreditation services and governing bodies, such as DEFRA and UKAS.

To do this, we assist in the development and establishment of suitable performance criteria for methods and instruments; advise on the use and development of appropriate statistical methods, and are deeply involved in identification and promulgation of best analytical practice, including aspects relating to sampling, instrumentation and materials.

The AMC produces Reports and regular Technical Briefs (TBs) on a wide range of analytical topics, published in the RSC journal *Analytical Methods*. We are also proud to support the overall AD aim of supporting Continuing Professional Development (CPD) with our TBs which can be used towards CPD certification.

Find more information and our Technical briefs at www.rsc.org/AMC
or follow us @RSC_AMC



COMMUNITY EVENTS OF INTEREST

**Eurachem International Workshop:
Uncertainty from Sampling and Analysis for Accredited
Laboratories
November 19-20, 2019, Berlin, Germany**



The meeting, held over two days, will include invited presentations, discussion and poster sessions. Discussion sessions will include opportunity for short contributed presentations. Posters and oral presentations are invited on any topic covered by the workshop, including the design of sampling protocols and the evaluation of sampling uncertainty; taking account of uncertainty when assessing compliance; and methods and examples of uncertainty evaluation.

Abstracts for posters and oral presentations must be submitted by **31st August 2019** – [submit online here](#).

Bright Sparks Symposium – Call for posters!

The Bright Spark Symposium (BSS) - a free event, aimed for analytical chemists, will take place in the Huxley Foyer at the University of Brighton on the **13th September 2019**.

This event is designed to provide a low-pressure, friendly platform for early career analytical scientists to present their work to like-minded individuals and provide networking opportunities. The day will include a number of talks from our bright sparks as well as a poster session. All aspects of analytical science welcome!

Spaces are free but limited. Lunch and refreshments are included during the day. **Travel bursaries up to £50 are provided, first come first served! Poster deadline – August 31st.**

Further information available [here](#).



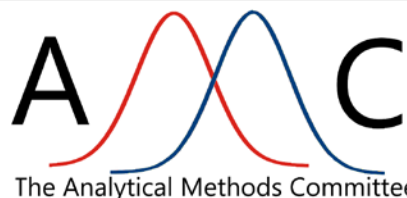
CPD RESOURCES

In this edition we would like to highlight some of the technical briefs that have gained the most attention in the past year. Technical Briefs published by the AMC are prepared by experts in the field to highlight recent information on topics of interest to the analytical chemistry community. For more free technical briefs that touch on statistics, heritage, sampling, etc. please visit www.rsc.org/AMC

AMC Technical Briefs

are produced by the Analytical Methods Committee (AMC) - the branch of the Analytical Division that handles matters of technical importance to the analytical science community.

Find out more at: www.rsc.org/amc



Technical Brief number 88: Why do we need the uncertainty factor? Available [here](#).

Abstract reads: The uncertainty factor is a new way to express measurement uncertainty. It is especially applicable when the uncertainty is large (e.g., expanded relative uncertainty > 20%), which occurs in some analytical methods, and also when the uncertainty includes that arising from the primary sampling of highly heterogeneous materials. The upper and lower confidence limits of the uncertainty interval are calculated by multiplying and dividing the measurement result by the uncertainty factor, rather than adding and subtracting the traditional uncertainty value.

Technical Brief number 83: Identification of plastics in cultural heritage collections by Fourier transform infrared spectroscopy (FTIR). Available [here](#).

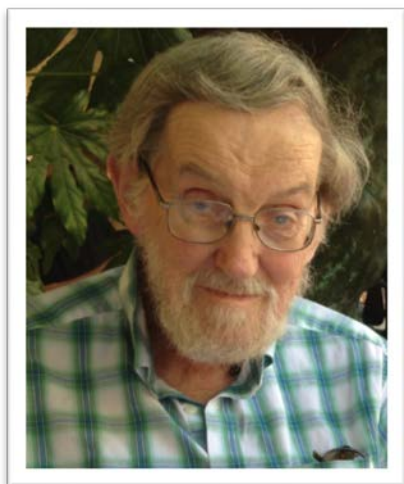
Abstract reads: Infrared spectroscopy is the most commonly used analytical technique for identifying polymeric compounds, such as cellulose acetate, cellulose nitrate, polyurethane, Perspex, PVC and nylon in analytical laboratories. Other relevant techniques for identification include Raman spectroscopy (see Analytical Methods Committee, AMCTB No. 67) and pyrolysis gas chromatography mass spectrometry (Py-GCMS). This technical brief focuses on the application of FTIR spectroscopy and outlines the different types of materials commonly found in museum collections. The different types of attachments and techniques, which have been developed to address the various forms of materials and minimise the need for sampling, are also described here.

Technical Brief number 81: A 'Periodic Table' of mass spectrometry instrumentation and acronyms. Available [here](#).

Abstract reads: The development and maturation of mass spectrometry (MS) technology has meant that MS users are no longer required to be experts in this field. With the increasing popularity of mass spectrometry (MS) with non-expert users, the Analytical Methods Committee (AMC) of the Royal Society of Chemistry has highlighted the need to generate a glossary of instrumentation terms that is accessible to users of this technology at all levels. In order to address a wide range of users it is also necessary to provide a context and explanation for the types of MS technology and their acronyms.

COMMUNITY NEWS

In Memoriam – Dr Arthur Andrews



Dr Arthur Harold Andrews

EurChem CSci CChem FRSC

Retired, formerly of GSK. Died 22 June 2019, aged 82

It is with great sadness that we announce the death of Dr Arthur Andrews earlier this year. Arthur was an active member of the analytical community, having sat on the Analytical Division Council, and being a member of the Analytical Division South East region for over 25 years, as well as holding the treasurer position for the South East for many of these years. In addition, Arthur was a long-standing member of SERAD and was one of the longest serving members of JPAG, along with Professor Geoffrey Phillips.

Arthur's Memorial Service will take place on Monday 9 September 2019 at 2.30pm at Offington Park Methodist Church, 271 South Farm Road, Worthing, West Sussex BN14 7TN. For anyone wishing to attend, please contact analyticalmatters@rsc.org

Survey request from the University of Brighton – “Career progression in Analytical Chemistry”

The University of Brighton are running a study to understand the perceptions of early career scientists towards their career progression within the field of analytical chemistry. This survey will explore what are the barriers to career progression and if they differ for scientists taking different career pathways. The findings of this survey will be presented at leading conferences to raise awareness on the importance of career support for the future generation of analytical chemists. Survey details available [here](#).

EPSRC Analytical Science Community Workshop

The EPSRC is holding an Analytical Science community workshop on the **23 October 2019**. This workshop will bring together representatives from both industry and academia working within the EPSRC Analytical Science research area. The aim of the workshop is to produce a set of future research goals, encompassing the views of both the academic and industrial communities, and use these discussions to identify potential areas of overlap between the research agenda of the academic community and the development needs of industry.

The Expression of Interest is now open on the EPSRC website and can be found [here](#).

Launch of anonymous reporting line for forensic science professionals

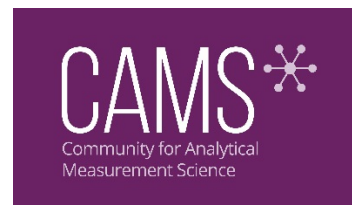
The new line, launched by the Forensic Science Regulator in association with the charity Crimestoppers, allows people working in forensic science to anonymously report concerns about quality standards.

Find out more [here](#).



Official Launch of CAMS

CAMS “The Community for Analytical Measurement Science” was officially launched on the 27th June. Around 80 people from industry, academia and government attended the launch event, which provided an opportunity to hear from leading members and sponsors of the CAMS community and to learn about the benefits from engaging with its initiatives.



Speaking at the launch, Stephen Metcalfe MP, House of Commons Select Committee on Science & Technology, said: “*I was delighted to be invited to help launch the Community for Analytical Measurement Science (CAMS). As the community grows, I hope to see CAMS deliver on its aims and play its part in supporting the wider aspirations of the Government’s modern industrial strategy. I hope everyone found the launch as informative as I did.*”

For more information and to keep up to date with CAMS activities visit <https://cams-uk.co.uk>

REPORTS

Emerging Analytical Professionals 2019

Emerging Analytical Professionals (EAP) 2019, the 24th annual conference of the Analytical Science Network (ASN) was held in Leeds from 10th – 12th May. The theme for the weekend was “Elementary: Exploring the Analytical Sciences”, tying in with the International Year of the Periodic Table and giving delegates the opportunity to present research showcasing a variety of research covering the breadth of analytical science. For the first time in the history of EAP, there were three keynote addresses: Prof Simona Francese (Sheffield Hallam University) opened the meeting with a talk on “Fighting Crime with Lasers”. Over the course of the weekend, this was followed by talks from Prof Karen Faulds (University of Strathclyde)

on “Multiplexed and Quantitative Bioanalysis using Surface Enhanced Raman Spectroscopy (SERS)” and Dr David Pegg (National Gallery, London) on “The Elements of Art: Analytical Chemistry at the National Gallery, London”.

Over 70 delegates attended the conference from both industry and academia with representatives from companies such as LGC, AstraZeneca and Eurofins, and students from Universities from across the UK, and beyond!

The programme was packed with a wide range of talks, with a diverse selection of invited speakers, early career ‘Bright Spark’ speakers, as well as ‘Back to Basics’ talks on analytical techniques. In addition, delegates enjoyed CPD sessions given by Dr Dayna Mason (RSC) and Dr Diane Turner (Anthias Consulting). These sessions covered public outreach, advice on achieving chartered status, and method development and validation. Alongside the scientific program, delegates enjoyed a range of social events from the Friday evening quiz, to the EAP tradition of a fancy-dress Saturday night. This year’s theme was ‘Murder Mystery’ and prizes were awarded for costumes. Delegates entered into the spirit of the evening and a great time was had by all.

This year ASN were very pleased to put a spotlight on Mental Health and wellbeing in research. Dr Silvia Wehmeier (University of Aberdeen) gave a talk on the subject of being an analytical scientist and practising mindfulness, and each delegate pack included a ‘Mental Health’ pack. This builds on the success of Dr Zoë Ayres, this year’s EAP chair, who’s poster ‘Mental health during your PhD’ won the People’s Choice award at this year’s RSC twitter poster conference.

37 delegates presented posters and gave a one-minute pitch to describe their research and, thanks to the generosity of the event’s sponsors, several prizes were awarded. Prizes were awarded for outstanding Bright Spark speakers, Posters and Poster pitches and were sponsored by The Analytical Scientist, The Analytical Methods Committee, LGC and the RSC journals: Analyst and Analytical Methods.



A selection of pictures from EAP 2019.

The next Emerging Analytical Professionals Conference will be held on the 15th-17th of May 2020 in Kettering. For more details on the EAP 2020 conference and future ASN events, visit our website or follow us on Facebook, Twitter, LinkedIn and Instagram.

Website: <https://www.analyticalsciencenetwork.co.uk/>

Facebook & LinkedIn: Analytical Science Network

Twitter & Instagram: @ASN_RSC Report by Lizzie Griffin, University of Aberdeen, Analytical Science Network Committee

To view previous issues of Analytical Matters please use the link: <http://rsc.li/analytical-matters>