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- Forthcoming events
- Water factoid
- Symposium on Urban Scale Water Reuse

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“Promoting the professional and scientific interests of members to safeguard the public interest in the application of chemical sciences in water-related industries.”

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## Environmental standards and high representation of Water Science Forum at recent international standards meeting on water quality

The Water Science Forum (WSF) committee members are involved in the creation and revision of a number of critical international standards that will impact to a greater or lesser extent on the water sector. These include standards on water footprinting, environmental technology verification, ISO 14001 revision and many analytical methodologies. The WSF recognise the importance of considering environmental aspect of activity related to sustainable water. The Environmental Technology Verification (ETV) standard is a new approach to verifying new technologies and services. Current international practise has a range of requirements when it comes to verification which means that a technology validated in one country may have to go through a different verification (or validation) exercise in a different country, adding cost and barriers to entry when deploying new technology (or services) in international markets. ISO 14034 seeks to harmonise international agreement on technology verification which will reduce or remove some of the barriers to market entry.

At the recent ISO TC 147 Water Quality standardization meeting in Berlin a large number of WSF committee members were present. The meeting was to develop new international standards in the field of water quality including water sampling and analysis, many of which will form the basis of European standards to support the Water Framework Directive.

The photo shows a former Chairman of the WSF, Tim White – centre, with the current Secretary, Roger Wellings on the left and the recently appointed new Vice- Secretary, Ian Barnabas, on the right. Dr Wellings was particularly attending as leader of a group for the sampling of rivers and streams. Other committee members who attended the meeting were Prof Clive Thompson, Richard Allan, Simon Gillespie and Gavin Mills, Treasurer.



## PACN Congress on Sustainability in Africa—Energy, Water and Waste

The Water Science Forum (WSF) was involved in the successful Pan Africa Chemistry Network (PACN) Congress on Sustainability in Addis Ababa, Ethiopia, on 3-5 December 2013. This was the 7th international PACN Congress and it attracted over 150 people from 30 countries from Africa and all over the world. The topics covered during the congress focussed on energy, water and waste, with a particular focus on the opportunities and solutions that were available. It was notable during the conference that water chemical sciences are playing an increasing role in the understanding of the processes affecting sustainability, and also in finding novel solutions to the challenges faced in these areas. It is hoped that conference delegates will continue to get involved with the WSF and potentially through the Water Science bursary schemes or through additional current funding mechanisms such as the British Council research links scheme:

(<http://www.britishcouncil.org/society/science/funding-opportunities/researcher-links-workshops-call>)

Prof Cartmell a WSF committee member who spoke at the conference was particularly impressed with the affordable technologies for improving access to drinking water and for managing and using waste resources which were presented at the conference.



**This  
edition's  
water**

**factoid:**

**It is a sad  
fact that a  
child under  
five years of  
age dies  
from water-  
borne  
illnesses  
every 20  
seconds.**

**Water Science  
Forum bursaries**

Please consider applying for the Alan Tetlow and WSF bursaries. They are open to all WSF members from any country and the money available can be used for a wide range of activities from conference and research lab visits for example to research projects in a range of topics including the water quality area. Up to £2000 is available per applicant. If you are unsure of eligibility please still apply and your application will be given full consideration.

## Alan Tetlow Bursary: Past and present recipients

*We take a look at past and present recipients of the WSF Alan Tetlow bursary and ask them how this has helped develop their career*

### Daniel Vandenburg: Alan Tetlow Bursary 2009

I received an Alan Tetlow Bursary in 2009. I applied for this award to help me fund a trip to the USA to give a talk on my PhD work at the American Chemical Society (ACS) summer meeting being held in Washington DC that year. My work was on the use of ultrasound to destroy phthalate esters in aqueous solution and I had been accepted to give a talk on my findings but my supervisor Prof (then Dr) Gareth Price based at the University of Bath had told me that I would have to raise the funds for the trip myself as he had no money for this.



I immediately went about searching for as many travel grants and awards as I could find. Amongst these I found the Alan Tetlow Bursary offered by the Water Science Forum (WSF). My work was about a water pollutant and its remediation so I thought I would give the application a shot although at the time I did not think I would get it! I remember the application being fairly straightforward and after a short wait I had been told I had been offered the award! Altogether I won about 5 different awards which together funded my trip. Giving the ACS talk was the highlight of my PhD and I was very grateful to the WSF and the other funding bodies for their support.

As part of the award I had to give a presentation to the WSF committee of the time which for me meant a trip to London. I prepared a few slides about my work and the trip that had been funded in part by the WSF and the presentation seemed to go well. The committee were friendly supportive and enthusiastic about my work which helped my nerves! I found the committee meeting quite interesting and now a few years later I am on the committee myself as the younger members representative.

The award looks good on my academic CV as it is a named person award as is quite prestigious. I also got a mention in the WSF newsletter which has a wide circulation and the self promotion you get as a result is also useful. The grant is also very flexible as to what it can be used for so I would encourage others to apply for one in the future even if you think you might not get it, I did not think I would and I did, you will not regret it!

### Enda McGrory: Alan Tetlow Bursary 2014

After receiving a first class honours degree at Letterkenny Institute of Technology (LYIT) in Bioanalytical Science in 2012, I started my research career in National University of Ireland, Galway (NUIG) under the supervision of Dr. L. Morrison. My research project ('Analytical and biogeochemical investigations of elevated arsenic and metal concentrations in Irish drinking water') focuses on the distribution of metals, particularly arsenic in Irish ground waters from private sources. The main aim of this project is to identify the precise method of mobilisation of arsenic into Irish groundwater and thus improve management of this important resource in Ireland.

The initial focus of my research has been determining the spatial distribution of arsenic around Ireland at both a national and local scale. Using data provided by regulatory authorities, areas of possible arsenic contamination by geogenic sources have been identified and are the focus of current field surveys. However, in order to determine the mobility, toxicity and potential bioavailability of arsenic in groundwater samples speciation analysis is needed. Speciation analysis aims to separate the different species of an element (in this case arsenic). This is important as the toxicity, mobility and potential bioavailability of the different arsenic species are related to oxidation state. Relevant species of this project include inorganic (arsenate [As<sup>V</sup>]) and arsenite [As<sup>III</sup>]) and methylated (dimethylarsinic acid [DMA<sup>V</sup>], monomethylarsonic acid [MMA<sup>V</sup>], monomethylarsonous acid [MMA<sup>III</sup>], and dimethylarsinous acid [DMA<sup>III</sup>]) arsenic species. In order to do this type of advance analysis (using HPLC-ICP-MS), appropriate training was required. For this, an application was made to the Water Science Forum for the Alan Tetlow Memorial Bursary. Once funding was secured, training was held in the Chemical Monitoring Facility (CMF) of the Ryan Institute at NUIG in collaboration with PerkinElmer application experts. With the training over, current work is now being undertaken on method development for this analysis. Future analysis will look at multi-element speciation analysis (e.g., Cr, Se and Hg) in different matrices (e.g., seaweed).



## WSF WELCOMES THE INTRODUCTION OF A PRIMARY DUTY TO SECURE RESILIENCE IN THE NEW WATER ACT

Volume 15 Issue 1

The **Water Act**, (for England and Wales) which received Royal Assent this week, amended the **Water Industry Act 1991** to include a primary duty to secure resilience in our water supply and sewerage systems. The **Water Science Forum (WSF)** wants policy makers and legislators to ensure that the needs of the environment are considered in a balanced way alongside economic and affordability considerations within the term 'resilience'. **WSF welcomes the introduction of this regulatory duty.**

WSF Chair Kevin Prior said: "One of our main concerns at WSF, is that water industry regulator's duties balance the environment with economic and customer affordability considerations, to ensure that the environment is adequately protected when decisions are made."

"In our 'Sustainable Water Report' WSF called for the water industry regulators throughout the U.K. to have a statutory duty to promote water conservation and efficiency. WSF is pleased that the Act requires water supply and sewerage undertakers, in England and Wales, to implement a range of measures to manage water resources in sustainable ways, increase efficiency in the use of water, and reduce demand for water, so as to reduce pressure on water resources."

WSF strongly supports the Water Act's resilience objectives. WSF through its "Sustainable Water Supply" initiative will work with its members, researchers and practitioners to ensure the chemical sciences play their full role in enabling water conservation and efficiency in light of environmental pressures, population growth and changes in consumer behavior. As such, WSF believes the long-term consideration of both resilience and sustainability in our water supply and sewerage management to be essential.

## £400 GRANTS!

Water Science Forum (WSF) is pleased to announce the provision of £400 grants to each of 5 WSF members to assist with the costs of attending DBP 2014. (Grants are to be made on a "first come, first served" basis and grants are limited to only one per member's company or organisation.) Applicants should email their request to [NETWORKS@rsc.org](mailto:NETWORKS@rsc.org) for the attention of the Hon. Secretary Dr Roger Wellings. Joining instructions for new members can be found at: [http://www.rsc.org/images/WaterAppForm\\_tcm18-221447.pdf](http://www.rsc.org/images/WaterAppForm_tcm18-221447.pdf)

Event: DBP 2014: Disinfection By-products in drinking water  
Dates: Monday-Wednesday, 27th-29th October 2014  
Place: Municipal Hall, Mülheim an der Ruhr, Germany  
Website: [www.dbp2014.eu](http://www.dbp2014.eu)

This international Conference is organised by IWW Water Centre (DE), RSC-WSF (UK) and SCI-EHSG (UK). A scientific poster session and an exhibition related to the topics of the conference will be included. It is expected that more than 200 attendees will take part. Delegates will have the opportunity to talk to decision-makers from water companies and regulators. The relevant scientific community will also be present.

The themes of the conference are: Emerging disinfection by-products; Water treatment including advanced treatment processes; Water recycling; Online and laboratory-based monitoring; Health and toxicology aspects of DBP; DBP regulations and the future.

Confirmed Speakers include: Susan Richardson, University of South Carolina (USA); Bill Mitch, Stanford University (USA); Tamara Grummt, Umweltbundesamt (DE); Kathryn Linge, Curtin Water Quality Research (AU); Matt Bower, DWQR for Scotland (UK); Bram Martijn, PWN (NL); Simon Parsons, Scottish Water (UK); Urs von Gunten, EAWG (CH); John Fawell, Cranfield University (UK); Cristina Villanueva Belmonte, CREAL (ES); Christian Zwiener, University of Tübingen (DE)

## Forthcoming WSF events in 2014:

**Flow cytometry for microbiological water quality analysis**

Cranfield University, UK  
16 June 2014

**Fifty shades of Water Management**

Manor Hotel Meriden,  
West Midlands, UK  
16-17 June 2014

**DBP 2014: Disinfection by-products in drinking waters**

Mülheim an der Ruhr,  
Germany  
27-29 October 2014

For further info: <http://www.rsc.org/Membership/Networking/InterestGroups/WaterScience/ForthcomingEvents.asp>

## Science Jokes!

Q: Why do chemists like nitrates so much?

A: They're cheaper than day rates.

An ion meets his atom friend on the street and says he's lost an electron. "Are you sure?" asks the atom. The ion replies, "I'm positive."

Q: What do you call a tooth in a glass of water?

A: A one molar solution.



## WATER SCIENCE FORUM

### The Newsletter of the Royal Society of Chemistry Water Science Forum

Editors:

Kevin Prior & Bruce Petrie

c/o Water Science Forum,

Royal Society of Chemistry

Thomas Graham House, Science Park  
Milton Road, Cambridge, CB4 0WF.

Email: kevin@thackie.co.uk

The views expressed in the newsletter are those of the authors and do not necessarily represent the views of the RSC, the Water Science Forum or the author's organisation

### Alan Tetlow Bursary

In memory of Alan Tetlow the Water Science Forum bursary will help post graduate students, young (under 35) or professional water scientists during the first 10 years of their career.

Contact: Hon Sec, RSC Water Science Forum, Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 0WF, UK

## The Strategic Advisory Board, Environment.

Richard Allan, Director of Cobalt Management Solutions and WSF committee member has recently been voted in as the Chair of the Strategic Advisory Board, Environment (SABE) at the European Committee for Standardization (CEN), here he explains the important role of SABE.

SABE was conceived in the late 1990s to provide CEN with strategic advice on environmental matters in relation to standardization. It has no programming role: its function is to promote and monitor the incorporation of environmental aspects into the work of CEN, whilst also providing the CEN and Technical Board (BT) with authoritative, forward-looking advice on how the environmental challenges of the future might best be addressed through the medium of standards making. Since 2005, two challenges in particular have set a fresh direction for future policy-making within Europe – sustainable development, and combating climate change.

Standardization, and in particular the integration of environmental aspects into European standardization, is a critical component of the European Commission's policy. This has been recently emphasised in the report from the Committee on Internal Market and Consumer Protection of the European Parliament (IMCO) in 2010. In particular, the report highlighted the need:

*“to develop standardization foresight in order to deliver a more effective and coordinated response in supporting global policies to address issues of climate change and other future global energy, environmental and other societal challenges.”*

This is precisely the anticipatory role that SABE was set up to perform in its capacity as strategic environmental advisor to CEN/BT. In order to achieve its objectives SABE has three teams that provide support, these are:

- Environmental Measurement: ENVironmental TC's Cooperation Team (ENV TC CT)
- Products (including services): ENvironmental Issues in Standardization (ENIS)
- Environmental management: Environmental Management Team (EMT)

SABE meets twice per year in Brussels, and is closely coincide with CEN/BT meetings so that delegates to CEN/BT can also attend SABE meetings, and vice versa. Meetings will occasionally be held in regional centres to improve links with national standard bodies (NSB), in particular to provide outreach to NSBs who do not normally attend. The SABE executive meet with the EU Commission to discuss and advise on emerging environmental issue that could impact on or enhance EU policy, resource efficiency (sustainability) and economic growth. The EU commission commonly tasks the SABE team to deliver policy mandates linked to environmental issues. Water and more importantly sustainable water is a cornerstone of the environmental agenda and SABE work plan.

**Clean Water for All**

**Symposium on Urban Scale Water Reuse**  
Tuesday, 17<sup>th</sup> June 2014  
9:30 - 15:30  
University of Sheffield, Room D105, Pamela Liversidge Building

A chance to learn from international best practice and to discuss what urban scale water reuse is and could mean for the UK

- Topics to be discussed include:
  - Urban scale water reuse in the US
  - Reuse experience in the Netherlands
  - Application of advanced treatment technologies for reuse
  - UK situation, experience, and drivers for reuse
  - Panel discussion on reuse options and research needs

To confirm your registration, please email  
Caroline Brookfield - c.brookfield@sheffield.ac.uk  
or call 0114 222 5761

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