

IYC Challenge Competition - Congratulations to North West Region Winners!

RSC President, Lesley Yellowlees, announced the results of the IYC Challenge Competition in her presidential address at the RSC General Assembly on Saturday 10th November 2012. Due to the imaginative and high quality of the entries to the competition, it proved to be too difficult to decide on a single project to receive the additional funding. Instead, three projects from the many fantastic schemes were rewarded with a £10,000 prize. The first two prizes were awarded to NW region based projects and the third to an international project.

First winner: **The Speciality Chemicals Sector** has supported the production of a teaching resource for local schools, relating to a zinc seam in North Wales. Pupils can learn more about zinc and its everyday uses, as well as testing the soil in their playgrounds and gardens. This resource will be useful for schools in other areas. Read more about the project below.

Second winner: **The Chemical Information and Computer Applications Group**, in collaboration with the **Historical Group** have worked together with the Catalyst Science Discovery Centre to set up a permanent exhibition on the origin of the elements and supported in the running of weekend workshops for families at the Centre.

Third winner: **The Beijing Local Section** are running Saturday science workshops for the children of migrant workers in Beijing, who are denied access to normal state schooling and often have little opportunity to learn science.

The IYC Challenge Competition was a great success, and inspired by the members who took part, the RSC will continue the IYC legacy by making more £1,000 grants available to member groups who have a project in mind that they cannot support with existing funds.

Speciality Chemicals Sector prize winning Zinc Project in North Wales

The Zinc project, sponsored by the RSC's Speciality Chemicals Sector as part of the IYC Challenge Competition, has been very successful, and primary school children and teachers have enjoyed carrying out the class experiments and hunting for zinc in the built environment.



Sending out a kit with detailed instructions to schools can be a recipe for disappointment - kits can be left on shelves, as teachers do not understand what is wanted and children remain unenthusiastic. In the Zinc project, each school was 'kick-started' into action, with a half-day visit showing zinc in detail and discussing several chemical and scientific themes.

Originally, it was envisaged to hunt for zinc in soil along a line of zinc mineralisation in North Wales, and after initial visits to six participating schools along this line, it was agreed to expand the study into looking for zinc in the built environment. The metal is ubiquitous and ideal for primary school work due to its low toxicity. Children were taught how to recognise possible sources of zinc in the home, as in toy cars and brass castings, and then to look for external sources, as in chicken-mesh, lamp-post coatings and road dirt from tyres. Samples were collected and tested in class using a proprietary colourmetric zinc testing kit. Each school tended to come up with slightly different samples to test.

From the teachers' guidance resource, the six schools carried out four experiments. One looked for zinc ion migration in a copper/zinc electrode lemon battery. Although the control lemon showed significant diffusion of zinc ions, the experiment did give a clear-cut

difference compared to the lemon allowed to run as a battery. The experiment showed the children how to use a 'control' in scientific method, and taught the author of this article, not to assume he knows how far zinc ions will diffuse in a lemon in one day!

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Speciality Chemicals Sector Zinc Project in North Wales

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A second experiment examined the slow dissolution of zinc roof sheeting by acid rain. The in-class version was speeded up to give a result in one day but the challenge to the children to design a mechanism to deliver one litre of acid water onto the zinc surface and then collecting it over 24 hours, is a difficult one at year 5 and 6 level (about 10 to 11 years old).

One key in-class theme was to understand the difference

between a zinc atom, metallic and heavy in bulk, and the elusive invisible zinc ion, that unlike many other transition metal ions is still colourless when concentrated.

It was considered important chemically to tie in such ideas to the reaction of zinc in acids where the products apparently disappear.

Comments were positive on the enthusiasm generated in the children collecting and testing samples, as well as the choice of experiments giving

results within a few minutes or by next day. It's not easy to speed up germination but chemical experiments can be made to fit the attention spans of different ages and abilities.

Following the RSC General Assembly in November, the IYC Challenge £1000 to fund the Primary Schools judged the Zinc project very highly and awarded a £10,000 prize to The Speciality Chemicals Sector to continue the work!!

*Steve Conway,
Zinc Project Organiser*

Success of Primary School Science DVD Continues

The DVD was officially launched for the 'International Year of Chemistry' at Catalyst on 22nd September 2011 by Andrew Miller MP, Chair of the House of Commons Select Committee on Science and Technology. The aim of the DVD was to give Primary School Teachers, many of whom have very little scientific training, the confidence to carry out practical work with their pupils and enthuse them with science. The worries about the 'safety of chemicals' would be overcome by using everyday products which could be obtained at local supermarkets.

The latest update is that over 6,000 copies which have been distributed far and wide, even as far afield as South Africa! All school parties and trainee teachers visiting Catalyst have been given copies after trying some of the experiments there; so far, this includes more than 80 schools and 100 student teachers.

Our DVD stars, Sue Halliday and Lorelly Wilson, have distributed over 150 copies at schools where they have given demonstrations. They have performed at ASE meetings, and this has stimulated

requests for another 100 copies. The Science Advisory Officer from County Hall, Flintshire, said that the Trust's backing for the DVD was remarkable, "What a thoughtful group to want to leave such a legacy and to think of us in primary schools. Please say a big thank you to all involved."

Many more copies have been distributed by Steve Conway, organizer of the primary Schools Science Festival in North Wales, where he gave copies to all 20 schools participating in this year's event. Baker Hughes distributed 70 copies to schools local to their Kirkby and Aberdeen sites. The European Oilfield Speciality Chemicals Association (EOSCA) gave 70 copies to committee members to distribute in their areas. Sarah Hill, RSC East Midlands Local Section, distributed 2,000 copies to local schoolteachers via the National Space Research Centre in Leicester.

Several RSC local sections have been busy distributing nearly 3,000 copies, to:- North Wales: 1,000 via LEAs and UCNW, Bangor; Manchester: 500 via RSC

Young Chemists network and Manchester Museum of Science and Industry; Liverpool: 500 including 100 to LEA schools in Liverpool and the Isle of Man; Lancaster: 500 via the county Science Advisors; Mid Wales: 20 copies; Cumbria: working with local companies to distribute. Essex: have ordered 750 copies for distribution to their local schools.

And, finally 250 copies are being used by schools and educators in South Africa after distribution via SciFest Africa.

The Trust's Committee Member, Adam McCudden, placed clips of the experiments on Manchester's YMN Youtube site and hits have already exceeded 14,000! The RSC have placed excerpts on the 'learn-chemistry' part of their website.

Feedback on the DVD has been excellent, indeed positively glowing and one word used time after time, 'BRILLIANT!' The single adverse comment received was from someone who had been unable to obtain a few of the materials at the local supermarket!

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Since producing the DVD, Sue Halliday has left Catalyst and is now an independent presenter at schools. Her website is www.Science2U.com. Lorelly continues with her 'Chemistry with Cabbage' activities and congratulations are due to her on receiving the RSC's Inspiration and Industry Award for 2012. Her website is www.chemistrywithcabbage.co.uk

Catalyst continues with its strong education offerings and are delighted to have recruited an experienced and enthusiastic teacher in Phill Day. Also, they have strengthened the commitment to chemistry, by appointing Stuart Gardiner (who has a Ph.D. in Chemistry) as his assistant in the Education Department.

*Alan Heaton,
RSC North West Trust*

IYC 2012 Crazy Changes Show at Catalyst

The 'Crazy Changes Show' was held at Catalyst Science Discovery Centre on Friday 9th October 2012. Organised over three sessions, about 250 Yr 6 school children and teachers from schools in Halton and South Liverpool, were entertained by a fascinating show given by Phill Day (Education Manager) and his assistant, Stuart Gardiner

The demonstrations started by looking at States of Matter and some of the children performed an analogy on the three states: gases, liquids and solids.



Children role play the different states of matter

Then, by using liquid nitrogen and balloons, the demonstrators showed how matter changed from one state to another, allowing the balloons to shrink when cooled, to expand when warmed, and by splashing liquid nitrogen on the floor and to watch it boil. Next, they moved on to 'dry ice' and demonstrated its capacity to sublimate, and whilst in deep freeze, bananas could be used as hammers.

The demonstrations continued from freezing to burning different materials to produce different coloured flames and firework effects. Phill and his assistant then showed how to make 'foams', using vinegar, baking powder, adding hydrogen peroxide for greater effect.



Phill Day gives an entertaining demonstration

Also, using yeast, warm water, green dye, washing up liquid and borax, they created a green slime to take back to school. Ugh!! Finally, using propan-2-ol vapour in a large plastic (20 litre) bottle, to make an oversized candle, an invited teacher carefully ignited the vapour. Flash!! Bang!! Whoosh!!



Propan-2-ol vapour ignition

RSC 'goodies' were handed out. The event funded from the IYC 2012 grant of £1000 was money well spent. Everyone had a good time, and gave out a big final cheer!! Adam Kewn, teacher from St Clement's RC Primary School in Runcorn said, "I just wanted to say a huge thank you for today. The children (and adults) had great fun and learnt a lot in the process. The show itself was brilliantly inspiring and exactly how I would love to teach that subject. I have known about Catalyst for years and drive past it daily, but today was my first visit. I was very impressed and will definitely be back!"

The Liverpool Section would like to thank the Catalyst Centre staff for their assistance in putting on a fantastic show.

Len Pollock, Liverpool Section

Liverpool Section's Pub Quiz

On 22nd November, the Liverpool local section hosted a traditional Chemistry Pub Quiz for Ordinary and Younger Members, at the Liverpool Scibar venue of The Ship and Mitre in Dale Street.



The event was very popular, and for the modest ticket price of £2, members had the chance to enjoy drinks and good local food, namely 'Scouse', a typical Liverpool dish. Considering the success and enjoyment of this and previous quiz nights, it is more than likely that another Quiz Night will be organised in the near future.

Paolo Melgari, Liverpool Section

Catalyst Exhibition ORIGINS The Birth of the Chemical Elements

September saw the launch of a new project called ORIGINS funded by two special interest groups from the Royal Society of Chemistry. The exhibition describes the birth of Chemistry and how the chemical elements that are the building blocks for everything around us were born.

The exhibition is supported by two workshops that have been added to the education programme for schools and two brand new family workshops that we now deliver at weekends.

The RSC Chemical Information and Computer Applications Group and the RSC Historical Group were given an IYC grant in 2012 and they approached Catalyst for assistance in delivering a project that would promote chemistry to the widest possible audience and serve as a fitting legacy to the International Year of Chemistry. In November, all the projects were judged by the RSC President Lesley Yellowlees, who was overwhelmed by the high standard of the 55 projects entered. Three prizes of £10k were awarded and we are thrilled to say that ORIGINS was one of the two UK based projects to win a prize.

Catalyst would like to thank the following for their support during 2012:

- Scottish Power in supporting the Electricity workshops.
- RSC NW Trust who bought a new Liquid Nitrogen Dewar.
- Stephenson Group Ltd in donating soap noodles for the Soap Workshops.
- Innospec for supporting the Showering with Surfactants workshop.
- Solvay and Perstorp for supporting the Fantastic Plastics workshop.
- Mexichem Fluor who worked with Catalyst on a competition for local schools.

Catalyst will 'kick start' National Science and Engineering week on the 15th March, with a visit from comedian Robin Ince. Famous for presenting BBC Radio show 'The Infinite Monkey Cage' with Professor Brian Cox, this will be an amusing and interesting event. For more information, and to buy tickets online visit www.catalyst.org.uk

Meryl Jameson, Catalyst

Out and about with the RSC's NW Regional Coordinator

These past few months have seen some changes in RSC education department and all for the better.

The RSC have announced that they have 130 teacher training scholarships of up to £20,000, for courses starting in 2013. Those who are successful will have access to a wide variety of RSC support, including membership and networking opportunities. Visit website for more information www.rsc.org/Education/teacher-scholarships.asp

'Spectroscopy in a Suitcase' is now part of the education programme that the HE STEM programme as come to an end. The University of Manchester kit has been booked for 14 separate events since September, including workshops, school loans and even the Manchester Science Festival. University of Liverpool John Moores did six school visits and currently the University of Liverpool have used the kit as part of their spectroscopy days for schools. The online booking form is available at www.rsc.org/sias.

ChemNet, which is the Royal Society of Chemistry's student network, has had a couple of major changes happen to it. Free registration is now available to 14-18yr olds. I ran two ChemNet ambassador training sessions (in Manchester and Liverpool) with one being planned on site at ThermoFisher in January. Schools across the UK and Ireland are requesting ambassadors to either give a chemistry careers talk or help out at careers fair. If you want more information about becoming a ChemNet ambassador please get in touch and for those of you who are STEM ambassadors the great news is that this can count as your one activity. I went along to Stockport's careers fair in September, and I thoroughly enjoyed informing students about the advantages of taking chemistry at A-level and the then degree level.

I went to BASF's ChemNet event where ChemNet members were invited to a tour of their industrial site in Bradford. Next year, ChemNet members have plenty to look forward to as there are plenty of things planned, including a University of Manchester laboratory day after the success of the one held in

July 2012, and an invitation to 'Meet the Universities' where chemistry departments from around the country all meet in one place. This year's 'Meet the Universities' will take place in both Leeds and at RSC's Burlington House in London. Dates for these events are provisionally 29th June and 6th July respectively. Rather than travelling to lots of different universities this is a great opportunity to ask all the questions students have and potentially even considering a university they hadn't thought of attending.

In regards to engaging with teachers, I have continued travelling the North West to various teacher network meetings, and chatted to those who had taken students to Liverpool's Top of the Bench heat in Wirral.

Following the RSC's reorganisation to the regions, I attended the first meeting of the Regional Steering group, which was very successful, and the second meeting is planned to take place in February.

Finally, I attended the grand opening of University of Liverpool's Central teaching laboratories which can accommodate up to 1,000 students! It was opened by Royal Society's President, Sir Paul Nurse. The two chemistry laboratories are based on the top floor with the synthesis laboratory, which contain 67 fume cupboards and a large space for demonstrators to mark and go through work with the students. There is a separate area with 28 balances, multiple FTIR spectrometers and a small computer suite. Also, the laboratories will be used for Outreach purposes with local schools and colleges. The University offers events for school groups in the laboratories and, also, supported activities within local schools, aiming to inspire school children and enhance their education. Due to multiple disciplines being housed in the same building, it will encourage inter-disciplinary interaction of the physical sciences.

If you wish to contact me regarding anything in this article or about anything else regarding education in North West please email me: katayune.presland@manchester.ac.uk

Kat Presland, RSC NW Coordinator

Liverpool Section Retired Members' Event



Anderton Boat Lift, Northwich

On one of the few dry days in July, a group of 54 members and guests gathered at the Anderton Boat Lift Visitors Centre. Situated on the north bank of the River Weaver, 3 miles from Northwich in Cheshire, the Anderton Boat Lift was built in 1875 to enable working barges to transfer from the river to the Trent and Mersey canal some 50 feet above. Corrosion of the cast iron structure was a problem from the outset, and the lift was finally closed in 1983. However, such an iconic piece of engineering could not be abandoned, and the £7m restoration began in 2001 with the lift re-opening in March 2002.

Our visit began with a walk down the terraced pathway to the River Weaver to board the glass-covered boat for a leisurely trip up river to the Town Bridge, in Northwich, which was one of the first swing bridges built in the UK.



Members enjoying the glass-covered boat trip

Our guide gave us a running commentary on the role that the canal and river played in the industrial development in the area. We returned to the base of the lift and entered one of the caissons, for a 30 minute ride up to the canal, while being given a very detailed account of the engineering underpinning the lift design. It was with some relief that we were not given a written test before disembarking into the Visitors Centre cafe for a cream tea!

Bob Lee, Liverpool Section

Chemicals Northwest update

Chemicals Northwest, the industry-led chemical cluster support organisation, has had a busy six month period since June especially with membership numbers continuing to increase over the year.

Our breakfast events have continued to grow in popularity and are attracting a wide range of members and non-members to each event. We have had some interesting speakers at our last few events including Essar Oil & Gas, ABB Limited, Chemicals Northwest Members Buying Group, Peak Associates, Executive Alliance Training & Coaching, TTE Limited and the University of Salford. Later on in 2012, we started to offer the opportunity to sponsor our breakfast events; this has also been very well received and has so far been taken up by two of our member companies – Avanti Environmental and Essar Oil & Gas.

Our Chemicals Elements events are still taking place at the Heath; topics have included an event in September on regulation updates which included REACH, CLP, Water Framework Directive, Seveso III Directive and Fee for Intervention. In October, nearly 70 people attended an event held in conjunction with NSAPI and Cogent, on Competence – a long term commitment and not a quick fix. In November, we focussed on Improving Exporting Expertise to Central and Eastern Europe in conjunction with UKTI, and at the time of going to press had an event on energy efficiency planned for January 2013 in conjunction with Siemens.

Our REACH User Group is also going strong for our member companies with a member of the CIA ReachReady team on hand to lead the group. This popular user group is proving to be a useful tool to members, at the last meeting held in November, we had a guest speaker from the HSE on hand to give a presentation and answer questions.

Membership of Chemicals Northwest has increased over the current year which is a good indication that our message is spreading and there is interest in the sector from across the region and beyond. For further details please see the membership section of the website http://www.chemicalsnorthwest.org.uk/membership/membership_benefits/

Our quarterly Elements magazine is a key publication for our members and the sector, and contains the usual features that our readers like, such as members spotlight sections, skills round ups, innovation articles and sustainable development features. Due to the popularity of Elements we are looking to allow both members and non-members the chance to advertise in the magazine to promote themselves to a wider audience. If anyone would like information on prices to advertise, to contribute a good news story or has any other ideas for the Chemicals Northwest newsletter, then please contact alex.heys@chemicalsnorthwest.org.uk for further details.

Our 2012/13 Chemicals Northwest Sector Directory came out in September - we continue to produce our annual sector directory highlighting the issues and challenges for the industry as well as giving a comprehensive resource of information relating to the largest regional cluster of manufacturers in the UK. Copies are available free to individuals from member organisations and at a small charge to non-members.

Alex Heys, Chemicals Northwest

RSC Liverpool Section's Top of the Bench Finals

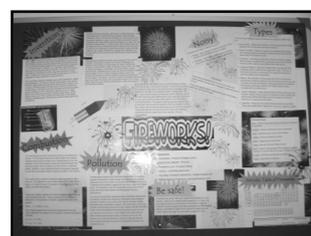
Top of the Bench is a national competition run by the RSC for 14-16 year old students. The competition begins with heats run by RSC Local Sections to select a team to represent the section in the UK final the following year. The teams consist of two pupils from Yr 9, one from Yr 10, and one from Yr 11. The selection heats usually take place in the autumn term, and the winning team nominated to represent the section is selected in December.

The Liverpool Section's Top of the Bench Regional Finals took place on 28th November at Liverpool University, 7th December at Wirral Metropolitan College, Birkenhead, and 8th December at Castle Rushen High School, Castletown, Isle of Man.

24 schools entered, but unfortunately not all schools were able to attend the days of the heats. Nevertheless, we had three successful days. Each heat had three tasks - the teams had to prepare a poster, and, on the day, carry out a laboratory task and a written test.



The standard of work was very high, and the quality of some of the posters was quite stunning.



The heat at Liverpool University was won by Merchant Taylors' Boys School. The heat on the Wirral was won by Neston High School. The heat on the Isle of Man was won by King William's College.

Overall winners of the Regional Final was Merchant Taylors' Boys School, and they will represent the Liverpool Local Section in the national finals in March in London.

Other positions:

2nd Merchant Taylors' Girls' School
3rd The Liverpool Blue Coat School
4th King William's College.

Best individual result for Yr 9 was Seth Aycock from King William's College.

Best individual result for Yr10/11 was Ian Videmour from The Liverpool Blue Coat School.

Unfortunately, we have lost the pictures from the event at Liverpool University, so sadly, no picture of the winning team!

*Ingeborg Buschmann,
RSC Liverpool Section*

Oman and Sultan Qaboos University (SQU) Revisited

In my previous article 'Applied Chemistry and Sightseeing in Oman', NW Chemistry News, 35, September 2008, I described how I came to spend the Spring semesters in 2007 and 2008 at SQU, and my role there in advising on the setting up of a new BScHons in Applied Chemistry degree. This would complement the BScHons in Chemistry which has been running since the university opened in 1986.



Mosque on Sultan Qaboos University Campus

The Applied Chemistry degree began in 2010, with the first cohort of students graduating in June 2012. All places were taken and I was invited back in early summer 2011 to teach some of the more specialized course modules, such as Fine Chemicals and Petrochemicals. Unfortunately, I had just thrown away all my lecture notes, so before departure and during my first two months in post, I had to produce new handouts and rewrite 4 lectures each week! Surprisingly, the proportion of Omani staff had changed very little, only 6 out of 30, and, as before, there was a strong reliance on 6 'Visiting Consultants' from India, Sri Lanka and UK.

There was a significant change in the gender balance amongst the students. Previously, there had been slightly more males than females. This time, females totally dominated with all 29 on one course and 39 out of 42 on the other! Again the students were very committed and conscientious – in fact, the marks for my main courses were so high that the H.o.D. did not want to accept them because he was concerned that he would not be able to defend them to the Dean. Fortunately, the exam board overruled him and I offered a simple explanation – the excellence of the teaching!

Some of the recommendations in my report at the end of my 2008 visit had been implemented e.g. recruitment of a Polymer Chemist but some key ones had not, and as a result, I encountered a number of problems in delivering my courses. For example, the practicals had not been checked and some chemicals were not available; there was no rotary evaporator in the laboratory, even though it was needed for most of the experiments, and leaving samples in the fume cupboard for a week did not remove all the solvent. It was certainly a case of 'thinking fast on your feet' to quickly resolve the problems as they arose! The soon to be opened, second building for the Faculty of Science, should improve the situation with its dedicated laboratories and new equipment. The two recommended books for the course (both authored by me) only arrived about a month after teaching started; 50 copies of each helped the royalties!

I deliberately wrote Industrial Visits into the course, but organizing them proved something of a nightmare. Firstly, they had to take place on a Saturday (part of our Friday/Saturday weekend) so as not to clash with the student's very

full timetable. Communicating with and getting confirmation from the companies was very difficult. Secondly, there were issues over the university providing transport. The first visit was to a company producing cooking oils, spreads etc. Our arrival was something of a shock because the works manager (who had confirmed the visit) had gone on holiday without telling anyone we were coming! The second turned out to be just a filling and packaging plant for soaps and detergents. Free samples from each place mollified the students somewhat. They were very active in taking photographs of the plant with their mobile phones (and a class photo including me) since they had to produce a report on each visit. Had my recommendations of some staff spending time in industry and building relationships with companies been implemented, then these problems would not have arisen.



Mosque and Castle in Old Muscat

The Harjar mountains which flank Muscat, are totally rock and therefore on the odd occasion when it rains, the water cascades straight off them and wadis (dried river beds) quickly flood. We experienced cloudbursts (which only last for a few hours) on two occasions, with dire consequences - fourteen people died each time, largely due to trying to drive their 4x4s through raging torrents in the wadis. On the first occasion, when dropping off a colleague at the airport, the water was up to the top of the car wheels in less than 20 minutes! I asked an Omani colleague why so many drivers pulled off the main road whilst I continued to drive and, in all seriousness, she stated that rain is so rare that many Omanis do not realize that they have to switch on the windscreen wipers!



Sultan's Palace in Old Muscat

The cost of petrol and basic foodstuffs had not changed since my previous visit. Interestingly, petrol is the same price as bottled water! Although a Muslim country, Oman is reasonably tolerant towards alcohol e.g. non-Muslims can bring in 2 litres either with them or purchase it at the airport. Prices of hotel and restaurant meals had really increased e.g. a steak in a 4-star hotel starting at £30!! Overnight stays are over £100, although many hotels are 5- or 6-star. Trips from the UK are much better value with 4-night B&B plus flights starting at about £600.

Oman and SQU Revisited (continued from p 6)

Having travelled extensively on previous visits this was limited largely to taking colleagues new to Oman and their families to 'see the sites', such as the old city of Muscat including the Sultan's palace, and the souk at Muttrah. A new place to see was a major coastal development called 'The Wave', which includes a harbour, many expensive apartments, a hotel, restaurants and a Greg Norman designed golf course.



Camp in the Wahiba Sands

My highlight this time, was a university weekend trip to the Wahiba Sands - climbing the dunes near the camp afforded

magnificent views of the sunrise and sunset over the desert and quad-biking on the dunes was a new and exciting experience.

Tourism is being strongly promoted, with direct flights from London or a change of plane in the Middle East when flying from Manchester. Expansion of the airport is well underway, with a reported 20,000 people from the Indian sub-continent working around the clock. Several new regional airports have also been approved.

Oman remains one of my favourite countries - the people are very friendly, many speak at least a little English, virtually crime free, and, although a Muslim country, Oman is fairly easy going on most things for non-Muslims. It was a pleasure to teach the students with their splendid attitude towards their studies although getting them to think was even harder than it is with UK students. During our visit, my wife and I, had a house on the campus and access to the university staff club with a gym, restaurant and 50m swimming pool with sun loungers around, all of which made the stay in Oman extremely comfortable and enjoyable.

Alan Heaton, RSC North West Trust

Eisteddfod 2012

'What's the pH of soap?' 'How much washing powder do you need to neutralise lemon juice?' These were some of the questions raised by hundreds of children and young people at the RSC's stand in the Science Pavilion of the National Eisteddfod. The Eisteddfod is Wales' premier cultural event, held annually during August. This year's event was held in the Vale of Glamorgan and attracted around 26,000 visitors to the Science Pavilion.



Following on from the success of last year's Global Experiment, 'The pH of the Planet', this year's activity used red cabbage to investigate the pH of household items. This was complemented with a 'What's that smell?' activity which proved popular with the parents and younger children alike.

There was a terrific response from the RSC members across Wales, with 17 volunteers taking part during the 8 day event. Helping out at the Eisteddfod can be hard work, especially when it gets hot, but it's very rewarding.



"I thoroughly enjoyed the experience - a lot of the kids came back 2 or 3 times during the day as they enjoyed it so much !!" said Richard Powell, Station Chemist, Aberthaw Power Station.



"I found, as a newly graduated Scientist, assisting the RSC at the Eisteddfod, gave me great experience of explaining scientific concepts to children and adults with little or no scientific background. This tested my own knowledge and how to present ideas to different people - an experience you rarely get at University. This was helpful in an educational way, and also, if I'm ever called as an 'Expert Witness' in my court career" said, Greg Satchell, BSc Hons Forensic Science, University of Glamorgan.



Greg Satchell and Gaby Szary introduce the concept of pH



On the left, Dayna Mason, Regional Coordinator for Wales, with Prof John Harries, Welsh Government Chief Scientific Advisor.

Our thanks go to Dayna Mason, Regional Coordinator for Wales, for all her help and support, the RSC for their funding towards the event, and all the volunteers for their hard work.

Next year's Eisteddfod will be held in Denbighshire, North Wales. If you have any ideas for activities or would like to help out, please contact Erica Roberts at ericawyn@gmail.com

Erica Roberts, RSC North Wales Section

NW British Science Association



The North West branch organises regular events throughout the year. The 'jewel in their crown' is the Mini-Festival, held the first weekend in October every year at Daresbury Laboratory. This is a full day of lectures, workshops and hands-on events, designed, as the name suggests, to mirror the success of the British Science Festival, albeit only for a day.

In addition to the Daresbury Mini-Festival, the NW branch is proud to have three well established SciBars. Knutsford has been home to a SciBar for around 5 years and it has been joined more recently by the SciBars in Bollington and Didsbury. A SciBar in Macclesfield was launched in May 2012, and there are new plans afoot for a Preston SciBar - so watch this space!

A busy 2012 for Didsbury SciBar

January's Didsbury SciBar kicked off in style with Dr Andrew Taylor's talk of 'PR Nonsense in Science'. Although Andrew works in the Dental School, his talk was a Dave Gormanesque comedic and sceptical look at bogus 'equations', often created by PR firms. Particularly impressive was his ability to mix a number of these 'made up equations' into a very funny routine. I suspect I'll see Andrew on 'Live at the Apollo' before I see him give a talk about computer imaging of bacteria on teeth from his day job.

Dr Adrian Bull, formerly of Westinghouse, led the February SciBar, and described what had happened at Fukushima following the Tsunami, the media's reportage of it, and the Japanese Government's response - very insightful.

March's SciBar was back to comedy gold. Prof Paul O'Brien of Manchester University returned, with a talk which was part jokes, part buckyball prizes and part Nanotechnology. His practical demonstrations of scale were of immense entertainment and educational value.

April saw Dr Marisa Alonso Nunez talk about how her research into the yeast genome has implications on cell cycle control and ultimately, cancer. In addition to being the first speaker to use

Precis, instead of PowerPoint or Keynote for her presentation, she also turned up with a model of the cell cycle that audiences could play with Kudos.

May's SciBar was led by Daresbury's synchrotron expert, Dr Hywel Owen. Hywel's talk on Thorium reactors is still remembered by the SciBar regulars, but his talk this time was on Proton-beam therapy at the Christie, which was immensely well delivered, and pitched.

June saw a Manchester University PhD student, Beatrice Rodriguez-Grande, give a talk on her current project of 'Brain Inflammation and Repair Mechanisms', in which she has identified key markers of brain damage, generating potential therapeutic targets during the peri-stroke period.

July's SciBar saw Dr Rob Appleby of Manchester University and CERN talk about how the Large Hadron Collider was built, what it does, and what the results mean. He had 115 slides, and the audience were engaged by all of them, in what was an incredibly well received SciBar.... and one of the longest!

August saw Dr Mark Hillen discuss some medical matters: Atrial Fibrillation (AF) and Stroke, encompassing what AF is, its demographics, what causes it to happen, and the consequences to your health - primarily a massive increase in the risk of ischaemic stroke. The Q&A session then went on to encompass discussions over most age-related diseases, with the ultimate conclusion being: look after your heart!

In September, a retired Chemistry teacher, Albert Club member and SciBar regular, Bernard Bloom, gave a historical take on one of the most important Chemists of the first half of the 20th century: Fritz Haber. Fritz was not only a Nobel Laureate, but also a notorious enthusiast of chemical weapon deployment in World War I. In summary, Fritz Haber: Nobel Laureate; war criminal.

October saw Manchester University's School of Pharmacy's Dr David Allison discuss 'Bugs 'n' Drugs' or rather, bacteria and their mechanisms of developing antibiotic resistance. Practical examinations of the quality of SciBarian hand washing were also performed and the results of which managed to surprise many of the attendees, whose fingernails glowed under UV light having apparently been

washed thoroughly seconds before.

November's discussion was one of the best attended in our history. Dr Phil Manning spoke about 'Digging Dinosaurs in Hell' (or rather, South Dakota). Phil's approach encompasses many scientific disciplines, from super-accurate LIDAR archaeological site surveys, to the application of particle physics to determine, non-invasively, trace amounts of elements that remain in fossil samples, which are then used to determine the probable skin and feather colour and patterning of the long-fossilised dinosaurs, reptiles and birds. Truly breath taking, breakthrough stuff!

December's SciBar was Dr Araida Hidalgo-Bastida of Manchester University, who discussed 'Regenerative Medicine' i.e. the potential application of stem cell technology to rebuild damaged or aged human tissues and organs.

Mark Hillen, Didsbury SciBar

Knutsford SciBar

Knutsford SciBar has developed beyond the monthly meeting and now has a number of activities on the go. A team is designing rockets for a Pop Bottle Rocket Competition at Chester Race course. A Book Reading Club reads and discusses about 40 pages of a selected book each month. On the website, you can see poetry written about the SciBar by SciBarians including one by The Poet Laureate of Cheshire, Andrew Rudd, inspired by a visit to the SciBar. There is also a flourishing Discussion Group where views can be expressed and questions asked on any scientific topic outside of the meeting.

Manchester Science Festival, 2013

Manchester Science Festival is an annual nine-day, multi-venue festival that engages and inspires people with science, building their confidence in exploring and questioning science in the most creative ways possible. Events take place in cultural and unusual venues around the city, in Salford, Bolton and across Greater Manchester. Check the website:

www.manchestersciencefestival.com for details of the 2013 Festival. Manchester Science Festival usually takes place in the October half-term.

DIARY

To include your event in the next Diary of NW Chemistry News, please send details before 30.06.13 to Patricia Keen, email: patricia.keen@virgin.net

RSC GROUPS

SPECIALITY CHEMICALS SECTOR

For details contact:
Sector Secretary
Dr Grahame Stanley
Tel: 07792 056515
Email: g.l.stanley@btinternet.com
or www.rscspecialitychemicals.org.uk

5th – 6th June 2013

PRACTICAL CONTINUOUS FLOW TECHNOLOGY – RESOLVING INDUSTRIAL PROCESS ISSUES

This conference follows the very successful RSC events held in Geneva in 2011 and York in 2012, and will provide a timely update on those events.

Venue: M.O.C., Munich, Germany
Contact: Dr Ruth Lane.
Tel 01928 788071
Email: ruth@cowlane.co.uk

4th – 6th November 2013

CHEMISTRY IN THE OIL INDUSTRY XIII:

Oil Field Chemistry – New Frontiers
This conference will celebrate 30 years since the first Chemistry in the Oil Industry Symposium. Professor Ken Sorbie will receive a 'Lifetime Achievement Award' for his contribution to the oil sector.

Monday 4th November

'Back to the Future'

by Graham Payne and Ian Macefield who participated in the inaugural symposium

Tuesday 5th November

Keynote Speaker: Professor Malcolm Kelland, Stavanger University.

'Production Chemicals and their Future'

Venue: Manchester Conference Centre
Contact: Dr Ruth Lane.
Tel 01928 788071

Email: ruth@cowlane.co.uk

April 2014

FIRE RETARDANT TECHNOLOGIES FRT14

A follow on conference from the very successful FRT09.

Venue: University of Central Lancashire, Preston. PR1 2HE
Contact: Dr Ruth Lane.
Tel 01928 788071
Email: ruth@cowlane.co.uk

CUMBRIA SECTION

For details contact:
Section Secretary
Mr Mark Gibson
Tel: 01946 777345
Email: mag7@sellafieldsites.com
Website: www.rsc.org/cumbria

A programme of forthcoming events will be advertised on the RSC website, in RSC News magazine and via emails to members in due course. Please keep checking for further updates or contact Mark Gibson.

LANCASTER & DISTRICT SECTION

For details contact:
Programme Secretary
Mr Harry Clarke
Tel: 01995 640003
Email: hclark906@btinternet.com
Website: www.rsc.org/lancaster

Below is a programme of forthcoming events - please check the venue with Harry Clarke, and if you have concerns about access for anyone with disabilities or special needs. Refreshments available from 7.00pm, prior to the lectures which start at 7.30pm unless otherwise stated. Guests are welcome - please inform Harry Clarke 7 days prior to the event, if refreshments are required.

Tuesday 19 March 2013 7.00pm
WINE TASTING
Host: Prof John Hepworth, Lancaster Section.

Venue: Preston College Vincent's Restaurant, Preston College, Fulwood Campus, St Vincent's Road, Fulwood, Preston, PR2 8UR
Contact: Harry Clarke
Tel: 01995 640003
Email: hclark906@btinternet.com

Tuesday 16 April 2013 7.30pm
LECTURE ABOUT MEDICINAL PLANTS
Speaker: Ms Veda West, Myerscough College.

Venue: Preston College Reception Building Lecture Theatre. Fulwood Campus, St Vincent's Road, Fulwood, Preston, PR2 8UR
Contact: Harry Clarke
Tel: 01995 640003
Email: hclark906@btinternet

LIVERPOOL SECTION

For details contact:
Section Secretary
Dr Ingeborg Buschmann
Tel: 0151 9499304
Email: ibuschmann.rsc@gmail.com
Website: www.rsc.org/liverpool

For more information of events, please visit the Section's web page at www.rsc.org/liverpool or contact:
Dr Bob Lee
Tel: 0151 3347875
Email: drboblee@msn.com

Saturday 2 March 2013

JOINT MEETING

A meeting with the RSC Local History Section
Venue: Catalyst Museum, Widnes

Wednesday 10 April 2013 12.00pm

Retired Members' Lunch LIVERPOOL THEATRES

A hot buffet lunch followed by a talk by Judge Elizabeth Steel.
Venue: The Athenaeum, Liverpool.
Tickets for members & guests £17

Thursday 16 May 2013 7pm

ANNUAL GENERAL MEETING

After the AGM, a talk on new drugs for the treatment of malaria & chronic pain from Prof Paul O'Neill, University of Liverpool.
Venue: The Cunard Building, Liverpool.
Buffet available at 6pm, and a tour of the building.

Wednesday 12 June 2013 10.30am

Retired Members' Lunch FLU VACCINES

A talk by Dr Beverly Taylor, Novartis, followed by a hot & cold buffet lunch.
Venue: The Foresight Centre, Liverpool.
Tickets for members & guests £13.50

Wednesday 18 September 12.00pm

Retired Members' Lunch THE INVESTIGATION OF RAILWAY ACCIDENTS

3 course meal followed by a talk by Mr Frank Hyland, formerly of the HSE.
Venue: Colours Restaurant, St. Helens
Tickets for members & guests £11

MANCHESTER & DISTRICT SECTION

For details contact:

Section Secretary

Dr Jayne Walker

Tel: 01942 768801 ext 254 or 07800 532585

Email: swalkerj@deanery.wigan.sch.uk

Website: www.rsc.org/manchester

Saturday 22 June 2013

THE BLACKDEN TRUST VISIT

Afternoon visit to The Blackden Trust, under the shadow of Jodrell Bank - site includes Toad Hall, home of author Alan Garner, and The Old Medicine House, a relocated building of interest.

Wednesday 14 August 2013

HOGHTON TOWERS VISIT

Late morning visit with light lunch to Hoghton Towers, Lancashire - Grade one listed ancient fortified manor house from Tudor times.

For details of the social events, contact Walter Cuthbert.

3 Woodlands Court, Knutsford.

Email: walter.cuthbert1@ntlworld.com

3 - 6 September 2013

THERMODYNAMICS 2013

The 23rd biannual Thermodynamics conference will be held at the University of Manchester. The aim is to bring together academics and industrialists to a conference covering statistical mechanics, computer simulation and thermodynamics. The topics covered are both experimental and theoretical, pure and applied. On this occasion, we will also hold a public lecture/debate on greenhouse gases.

Venue: University of Manchester, C floor lecture theatres, Renold Building, Manchester, M13 9PL
Event contact: Prof Andrew Masters
Tel: 0161 275 4679

or: andrew.masters@manchester.ac.uk
The conference is free for registered participants. The public lecture/debate on greenhouse gases is open, free of charge, to anybody. Ticket/Registration Information will be available in due course from the conference website, www.thermodynamics2013.org

YOUNGER MEMBERS NETWORK

For details on any YMN event or if you wish to get involved, please

contact Mark Holden at ymn_manchester@yahoo.co.uk, or www.ymnmanchester.co.uk and our facebook page: www.facebook.com/group.php?gid=2253417692

NORTH WALES SECTION

For details contact:

Section Secretary

Dr. Jesus Cirre

Tel: 01978 293 330

Email: j_cirretorres@yahoo.com

Website: www.rsc.org/nwales

Forthcoming events for the North Wales Section are found on the website.

NORTH WEST REGION ANALYTICAL DIVISION

For details contact:

NW Region AD Secretary

Dr Stuart Forbes

Tel: 0151 3735316

Email: stuart.forbes@shell.com

Website: www.nwad.org

Full details of forthcoming events are found on the website.

March - April 2013

2013 ANNUAL GENERAL MEETING

Web based meeting

Thursday 16 May 2013

2013 LONG SERVICE MEMBERS LUNCH

The 2013 Long Service Members Lunch at West Cheshire College will be followed by a talk by Dr Ian Cubbin from Liverpool John Moores University. Further details will be sent to eligible members and published on the website in due course.

Venue: West Cheshire College, Ellesmere Port

Contact: Stuart Forbes

Tel: 0151 3735316

Email: stuart.forbes@shell.com

RSC MICRO- ANALYTICAL DIVISION

Contact: Sue Lewis

Tel: 0161 488 3667

Email: sue.lewis@isoprime.co.uk

Web: www.isoprime.co.uk

Web: www.elementar.de/en/home

AROUND THE REGION

BANGOR UNIVERSITY SCHOOL OF CHEMISTRY

For further details on the extensive School Outreach Programme: www.bangor.ac.uk/chemistry/schools; to book places on line contact: Website: www.bangor.ac.uk/chemistry

The following activities take place throughout the year:

Spectroscopy in a Suitcase;
Interactive Periodic Table;
School Lecture Series;
Private School Visits.

Email: chemadmin@bangor.ac.uk

15 - 24 March 2013

BANGOR SCIENCE FESTIVAL

The Festival held during National Science & Engineering Week will have entertaining and thought provoking activities are all ages. For more details, please see Bangor Science Festival web site www.bangor.ac.uk/bangorsciencefestival

19 - 20 March 2013

ECO SCIENCE DAYS

A free science event focusing on environmental issues, with hands-on experiments, demonstrations & talks, designed to support KS4 science subjects. To book places email r.l.robinson@bangor.ac.uk

March 2013

SALTERS' FESTIVAL OF CHEMISTRY

A interesting, competitive fun-filled day of chemistry for Years 7-8. Bookings via the Salters website www.salters.co.uk/festivals

11 April 2013

RSC'S SCHOOLS ANALYST COMPETITION

Regional heat of this national contest for Year 12. Bookings via the School of Chemistry website www.bangor.ac.uk/chemistry

11 June 2013

CHEMISTRY PHARMACEUTICAL

A practical workshop for Year 12 students on the synthesis and analysis of Aspirin, the world's oldest and largest produced painkiller. An opportunity to use specialist techniques not used in school. Bookings via the School of Chemistry website by Friday 17th May.

June and July 2013

THE TALENT OPPORTUNITIES PROGRAMME

TOP has been running since 1998 and involves over 1,200 pupils from schools across North Wales. The programme of hands-on workshops, aims to give an insight into Higher Education and the opportunities available, and hopefully, stimulate an interest to continue studying post-GCSE. For more information contact Manon Williams on 01248 383536 or manon.williams@bangor.ac.uk

July 2013

WORK EXPERIENCE YEAR 12

Some places of work experience available for Yr12 students interested in Chemistry - please contact the Department.

3 – 10 August 2013, Denbighshire
NATIONAL EISTEDDFOD OF WALES

The School of Chemistry is the principal organiser of the Science Pavilion. Come along and get involved in all sorts of fun chemistry experiments.

BRITISH ASSOCIATION FOR CHEMICAL SPECIALITIES (BACS)

For details contact:
Jackie Hall
Tel: 01423 700249
Email: enquiries@bacsnet.org
Website: www.bacsnet.org

Further details on BACS meetings, conferences & courses can be found at: www.bacsnet.org/news/ or from the BACS office at enquiries@bacsnet.org

Thursday, 16 May 2013

Surfactants Formulation Group

Venue: Stockport
More details nearer the time.

Thursday, 20 June 2013

Personal Care Group THE FEEL GOOD FACTOR

Venue: Lymm
This meeting, run jointly by the BACS Personal Care Group and the Society of Cosmetic Scientists (SCS), will consider ingredients that provide sensory properties and the advertising trend to link cosmetics with personal well-being. It is open to

non-members as well as members of BACS and SCS.

Wednesday, 19 June 2013

Training Course AN INTRODUCTION TO REGULATORY AFFAIRS

Venue: Lymm
A beginner's guide to regulatory affairs - more details nearer the time.

Thursday, 12 September 2013

Training Course AN INTRODUCTION TO SURFACTANTS

Venue: Manchester
A course designed for non-chemists or chemists with a limited knowledge of surfactant technology, and is particularly suitable for non-technical and newly-recruited technical staff in companies operating in the sector. The course provides a basic understanding of surfactants, how they work and how they are used.

Thursday, 26 September 2013

Training Course AN INTRODUCTION TO MICROBIOLOGY

Venue: Stockport
A course designed for those with little or no knowledge of the subject and it will provide an understanding of microbe types, the problems they cause and how they may be resolved. It is particularly suitable for formulators who use biocides either as active ingredients in products such as disinfectants or as preservatives for raw materials or formulated products.

BRITISH MASS SPECTROMETRY SOCIETY

For details contact:
Dr Peter J Baugh
Tel: 0161 9737032
Email: peterbaugh682@hotmail.com
Website: www.analyticalmethodologycentre.co.uk
For BMSS news & information:
www.bmss.org.uk

SCI - LIVERPOOL AND NORTH WEST GROUP

For details contact:
Honorary Secretary
Mrs Marie Connor
Tel: 0151 3485742

Email: marie_connor@hotmail.co.uk
Website: www.soci.org

May 2013

2013 ANNUAL GENERAL MEETING

Venue and itinerary to be arranged.

BRITISH SCIENCE ASSOCIATION NW REGION

For further information contact:
Pamela Buchan
Tel: 07811 756888
Website:
www.britishscienceassociation.org/web

BOLLINGTON SCIBAR

For details contact:
Email: bollingtonscibar@hotmail.co.uk
Website: www.bollingtonscibar.co.uk

Events take place at The Vale Inn, Adlington Road, West Bollington on the second Monday every month at 6.30pm.

DIDSBURY SCIBAR

For details contact:
Mark Hillen
Email: scibar@gmail.com
Website: www.scibar.info

Meetings take place at The Albert Club, 41 Old Lansdowne Road, West Didsbury, on the third Monday every month at 6.30pm. Future speakers:
18th March: Kate Meade - Stem Cells.
15th April: Anthony Bristow - Pharmaceuticals.

KNUTSFORD SCIBAR

For details contact:
Dave Thompson
Tel: 07768 355814
Email: knutsford.scibar@ntlworld.com
Website: www.knutsford-scibar.co.uk

Meetings take place in the Cheshire Room at the Angel Hotel, King Street, Knutsford, on the first Monday the month at 6.30pm.

LIVERPOOL SCIBAR

For details contact:
Email: liverpool@scibar.org.uk
Website: www.liverpool.scibar.org.uk

Meetings take place at The Ship and Mitre, Dale Street, Liverpool, on the first Tuesday every month at 7.30pm.

MACCLESFIELD SCIBAR

For details contact:
Website:
www.macclesfieldscibar.co.uk

Events take place at The Park Tavern, 158 Park Lane, Macclesfield, every fourth Monday at 6.30pm, followed by the regular pub quiz at 8.30pm. Food available.

CATALYST SCIENCE DISCOVERY CENTRE

For information or to make a booking contact Meryl Jameson
Tel: 0151 4201121
Email: meryl@catalyst.org.uk
Website: www.catalyst.org.uk

NATIONAL SCIENCE WEEK 14, 15 and 18 March 2013 FLASH, BANG - WHAT A REACTION SHOWS!

Aimed at KS3 pupils, an explosive, states of matter and chemical reactions show with demonstrations using explosions, burning, colour changes and gas! £1.25 per pupil + admission.

19 - 22 March 2013

MATERIALS SHOWS KS2

Solids, Liquids & Gases for years 3 & 4 pupils to learn about different material properties in this spectacular demonstration using liquid nitrogen and solid carbon dioxide. The explosive Crazy Changes Show for years 5 & 6 follows on from solids, liquids and gases to explain reversible and irreversible changes by heating, cooling, burning and mixing. £1.25 per pupil + admission.

21 - 24 May 2013

MYSTERY AT THE MANOR

For Years 5, 6 & 7, a great way to combine teacher assessment with collaborative skills. Set in the Catalyst Crime Lab, can your pupils solve the mystery of the death of Professor Paul Smythe using a range of forensic techniques? £60 per session + admission.

FRIENDS OF CATALYST

For details contact:
Bill Sanderson
Catalyst Programme Secretary
Tel: 01925 725973

Email: mail@billsanderson.co.uk
Website: www.catalyst.org.uk or
www.catalyst.org.uk/friends/friends.htm

CHEMICALS NORTHWEST

For details contact:
Alexandra Heys
Member Services and Events Manager
The Heath Business and Technical Park, Runcorn, Cheshire, WA7 4QX
Tel: 01928 515678
Email:
alex.heys@chemicalsnorthwest.org.uk
Website: www.chemicalsnorthwest.org.uk

Details of forthcoming events can be found on the website.

MANCHESTER UNIVERSITY SCHOOL OF CHEMISTRY

For further details on the extensive range of outreach activities, contact Meriel Barham
Tel: 0161 2754686
Email:
outreach.chemistry@manchester.ac.uk
Website:
www.chemistry.manchester.ac.uk/outreach

10, 12 and 14 June 2013

SALTERS' FESTIVAL OF CHEMISTRY

Bookings via the Salters website
www.salters.co.uk/festivals

15, 16, 27 and 28 June 2013

SPECTROSCOPY TOUR

Please book through
Katayune.presland@manchester.ac.uk

22 - 26 July 2013

SALTERS' CAMPS

For students in Year 10, running in the summer between years 10 and 11. Residential, 3-day camps with 4 half-day laboratory activities, designed to give students a taste of university life
For details see the Salters website
www.salters.co.uk/camps

SALT OF THE EARTH

For details contact:
Henry Ratter.
Email: ratterh@aol.com

Thursday 23 May 2013

SOE NETWORK MEETING

Wednesday 24 April 2013
SOE STEERING GROUP MEETING

Thursday 12 September 2013
SOE STEERING GROUP MEETING

WEAVER HALL MUSEUM AND WORKHOUSE (FORMERLY THE SALT MUSEUM)

162 London Road, Northwich CW9 8AB
Tel: 01606 271640

For details contact:
Tom Hughes, Curator
Email: tom.hughes@cheshirewestandchester.gov.uk
Website:
www.weaverhallmuseum.org.uk

19 January – 12 May 2013

WELL AW'M GAWMED! THE CHARMS OF CHESHIRE DIALECT

SPECIAL EXHIBITION

Watch out for this forthcoming exhibition exploring our rich local vocabulary and favourite phrases.

TEA AND TALKS

Talks on a variety topics start at 3pm on last the Wednesday of each month, except December. £1 entry includes tea or coffee.

EVENING TALKS ORGANISED BY THE FRIENDS OF WEAVER HALL MUSEUM

Talks on a variety topics each month. Friends' events are free to members and open to non-members, subject to a small charge. Booking essential. Contact the museum on 01606 271640 or via the website.

14 March 2013 7pm for 7.30pm

THE LION SALT WORKS

Chris Hewitson, Project Archaeologist, will give a talk on the last remaining Open Pan Salt Works.

SCHOOL HOLIDAY EVENTS

A variety of special activities take place during school holidays - all included in the museum admission price. Workshops run from 10am to 4pm on Wednesdays and Thursdays and usually take about an hour to complete. Drop in any time you like between those times. Children must be accompanied by an adult.

RSC North West Analytical Division Streamwatch Project

The RSC North West Analytical Division (RSC NWAD) have recently commissioned a project to promote analytical science and an interest in the environment in the North West of England and North Wales. Using money from the RSC IYC Challenge, plus additional funds from the RSC NWAD, a number of Streamwatch kits have been purchased with the aim of loaning them to local organisations across the region.

Streamwatch kits, originally developed by Australian Streamwatch and Streamwatch UK and manufactured by Tintometer Ltd, have been developed to encourage scientific observation of local rivers and bodies of water. The kits allow simple tests to be carried out including determination of pH, nitrate, dissolved oxygen, total hardness, turbidity and temperature. The IYC grant has been used to purchase two streamwatch kits and the North West Analytical Division has purchased two more. They come with clear instructions and safety data information. The aim is to promote science and an interest in the environment amongst young and old through local organisations such as the scouts, brownies, community groups as well as schools and colleges. Each organisation will be asked to record the data generated on water quality in their area and this information will be stored on a database accessible to all via the North West Analytical Division website (www.nwad.org). It is hoped that a useful resource can be developed that not only introduces people to scientific analysis and environmental matters but also gives a good picture of the state of the rivers, lakes, reservoirs and ponds across our region and allow changes in quality to be tracked over time.

If you are interested in borrowing a kit and are located in the North West of England or North Wales, then please contact Peter Doyle at peterdoyle@mypostoffice.co.uk.

*Peter Doyle,
RSC NW Region Analytical Division*

Gerry Davison Memorial Award



Photo L-R: Arnold School Teachers; Issa Patel, Tim Duthie and Oliver Hopkins (members of the winning team from Arnold School); Dr Gavin Hunter; Dr Sanja Potgieter-Vermaak, Manchester Metropolitan University, Vice-President RSC NWAD. With thanks to M.J. Halliday for kindly supplying the photograph.

The annual SCI student prize-giving and RSC North West Region Analytical Division Gerry Davison award event took place on Thursday 22nd November at the Athenaeum, Liverpool. The best students graduating from degree courses in chemistry related subjects from universities within the Liverpool & North West geographical area were recognised for their successes, taking home a cash prize and a year's free membership to the SCI. The special guest for the evening was Dr Gavin Hunter who gave a most interesting talk on the history of Lever-Hulme in Port Sunlight. Dr Hunter took us all on a nostalgic trip with photographs, history of the families Lever and Hulme, and

inspirational snippets to illustrate the entrepreneurial character of this company.

The Gerry Davison Memorial Award is given to any North West school team which finishes in the top three places at the National Final of the RSC Analytical Division Schools Analyst Competition. Arnold School in Blackpool won the Preston heat of the regional competition and went on to scoop up the first prize at the National Final. Each participant (Oliver Hopkins, Tim Duthie and Issa Patel) was presented with a certificate, and the school with a cash prize.

*Sanja Potgieter,
RSC NW Region Analytical Division*

Grants available from RSC NW Region Analytical Division

In recent years, the NW Region Analytical Division has provided several grants to post-graduate students to enable them to participate in analytical conferences, and to schools to fund their travel to local universities and colleges to find out more about analytical science.

Higher education students from Liverpool John Moores and Manchester Universities have received grants to help them participate in meetings and conferences both in the UK and abroad, and present the results of their research work. Carys Jones, who is currently studying Industrial Pharmaceutical Sciences at Liverpool John Moores University, attended the Emerging Analytical Professionals conference, which was made possible by a bursary from the NW Region. Read Carys' report overleaf. Schools in West Cumbria and Derbyshire have also received grants to enable groups of

students to travel to York and Manchester Universities respectively, where they were able to gain hands-on experience of several instrumental techniques and organic synthesis procedures. Read overleaf about a residential visit to York made by Yr13 students from St Benedict's Catholic High School, Whitehaven.

More details on grants can be found on our website www.nwad.org where you can also read reports written by the grant recipients describing the benefits they gained from their visits. Information on how to apply for post-graduate student grants is available at www.nwad.org/rsc.nw.ad.student.travel.grant.pdf and information on school travel grants can be found at www.nwad.org/rsc.nw.ad.schools.travel.grant.pdf

*Stuart Forbes,
RSC NW Region Analytical Division*

Benefits of the EAP Conference

The Emerging Analytical Professionals (EAP) conference, which was this year held in Knutsford, allowed me to expand on both my current analytical techniques and knowledge, whilst also giving me the opportunity to explore future career aspirations and possibilities.

Upon arrival and having met none of the other professionals before, the staff welcomed me and made me feel at ease by setting aside time for people to have a 'meet and greet' session. The organisers made a real effort to encourage different groups to integrate, setting the whole conference at an ease and making it possible to ask questions without a fear of being judged. The resulting atmosphere was comfortable; people not only had their own work to talk about but were also interested in the work I'd undertaken during my dissertation. This actually made me think that although I have only recently graduated, there is potential for my work to make an impact on other people's careers and thoughts, and that it is not just limited to those who are currently in postgraduate research. This reinforced the EAP message that young scientists are exploring our current day knowledge and breaking boundaries, and by joining together to listen and ask more questions, we can learn and develop more.

Throughout my time at the EAP conference, I learnt that my recently completed university education barely touched on the reality of the career area I want to enter. I was not only educated on techniques I previously knew nothing about, but I was also taught implications, uses and future possibilities. My understanding was deepened and horizons broadened, opening me up to opportunities in careers that I wouldn't have otherwise considered. This allowed me to see the implications of techniques that I want to learn being used not only in Pharmaceuticals, but food, sports, finance and security – aspects of life many of us take for granted. The information provided explored a variety of topics, both answering and formulating questions throughout the speech whilst simultaneously providing guidance in the speaker's expertise. Not only did I learn about the speaker's subject, but also gained an appreciation and chance to grasp what keeps an audience attentive and engaged.

Continuing Professional Developments (CPD) workshops gave the opportunities to interactively learn necessary skills, and to look where improvements can be made or processes adapted in day to day work. They also allowed individuals to look at ways to improve their skills, job opportunities, professional status and working techniques, allowing participants to relate their knowledge gained throughout the conference to each of their personal situations.

The overall experience encouraged me to expand my thinking horizons, in both my abilities and career objectives. I have gained professional development skills, and an ability to build rapport which gave me confidence. However, the most important thing that I learnt is that I am not only able to learn from others, but also capable of becoming someone who teaches them. I enjoyed the conference so much that I am going back next year as a member of the committee.

Carys Jones, sponsored by RSC NWAD

St Benedict's Catholic High School Residential Visit to The University of York

The primary aim of this residential was to give Yr 13 students some hands on analytical chemistry practical sessions in the undergraduate teaching labs of a university, using methods and equipment that would not be possible in the school environment, and secondly, to introduce the students to the life of a science student at university. The students stayed in the Halls of Residence at the university, and experienced two days of lectures, and laboratory time.

After the long trek from Whitehaven, the first lecture by Dr Annie Hodgson entitled 'Chemistry @ University' introduced the students to the department, the courses that run at universities across the country, the expectations of successful candidates, and how to write in a persuasive personal statement. Then followed, a campus tour with lunch at one of the university canteens. After lunch, saw the first of the practical sessions lead by Prof Jane Thomas-Oates, preceded by the lecture 'Analytical Chemistry – Methods to Analyse Fats'. The students spent the rest of the afternoon in the laboratories, preparing and analysing the various fats in the collection of fast food samples (burgers, pizzas) they had brought with them. This involved a saponification reaction, aqueous extraction and conversion to Fatty Acid Methyl Esters (FAMES) by acid catalysed esterification - these FAMES were then set aside for analysis on GC and GC-MS the next day. In the evening, the students enjoyed a dinner in York City Centre, followed by a Ghost Tour of the city.

The next day, the students had an introduction to GC-MS, HPLC and LC-MS, where they analysed the samples that they had prepared the day before. This was followed by an Organic Synthesis practical session with Dr Paul Clarke, where the students performed a Friedel-Crafts alkylation 'Preparation of 4, 4-Di-(tert-butyl)biphenyl'. The students managed to follow the script very well and demonstrated great skill and knowledge with a preparation used in the first year synthesis course at the university. The crude product was recrystallized and the pure product was analysed by IR and ¹H NMR. Finally, the students had a lecture by Professor Dave Smith 'Professor Dave's Amazing Molecules – Life Saving Organic Chemistry' which the students found very interesting, prompting many discussions on the 4 hour mini-bus journey back to Whitehaven that afternoon!

Many thanks to the academic staff in the Department of Chemistry at York University for their help and time over the two days - the students thoroughly enjoyed themselves (as did the staff!)

Also, thanks to the RSC, and the NWAD in particular, for the grant provided to us that enabled the students to experience two fantastic days as a chemistry student.

Report courtesy of RSC NWAD

Plants as Providers of Fine Chemicals Conference



Photo L-R: Claire-Marie Grizaud, Sederma. Prof Mark Baird, School of Chemistry Bangor University; Dr Vera Thoss, Conference Organiser, School of Chemistry Bangor University; Andrew Gallagher, Phynova; Prof Monique Simmonds, Royal Botanic Gardens, Kew; Prof Ed Kosier, Nextec; Dr Rob Elias, Biocomposites Centre, Bangor University; Dianne Irwin, Syngenta

The 2012 Plants as Providers of Fine Chemicals conference was held at Bangor University on 29th and 30th August. This was the second conference in this series and highlighted the recent advances in plant chemistry and in particular the use of compounds extracted from plants for a variety of applications including plant protection agents, cosmetic ingredients and pharmaceuticals. The conference was organised by Dr Vera Thoss from the School of Chemistry and received sponsorship from several organisations including the European Regional Development Fund, the Biotechnology and Biological Sciences Research Council, RSC NW Region Analytical Division and several instrument companies.

Bangor University welcomed experts in the field of plant bio-refining to the conference and the keynote address was given by Professor Monique Simmonds FRES, Deputy Keeper of the Jodrell Laboratory and Head of the Sustainable Uses of Plants Group, Royal Botanic Gardens, Kew. The University works in partnership with a number of local businesses who also participated in the conference presenting the results of their work and highlighting opportunities for collaboration in this exciting, cutting-edge area. Posters presentations were also made and the prize for the best poster went to Mohammad Elamar, a PhD student from Bangor University, for his work on extracting fine chemicals from gorse.

Details of the conference are available via the web site: www.chemistry.bangor.ac.uk/plants. The next conference will be held on 28th - 29th August 2013, for further information contact Dr Vera Thoss: v.thoss@bangor.ac.uk.

*Vera Thoss & Stuart Forbes,
RSC NW Region Analytical Division*

NW Chemistry News March 2013

Wrexham Science Festival

The 14th annual Wrexham Science Festival took place between 19th - 27th July 2012 at Glyndŵr University. The 8 day event featured 50 events aimed at engaging the general public with the wonders of science, and once again the RSC North West Trust was delighted to sponsor two chemistry-related events. Both talks were introduced by Prof Chris Adams, Treasurer of the RSC North Wales Section.



The first talk on Friday 20th July, given by Dr Andrew Holding from the University of Cambridge, was entitled 'Alchemy and Air'. This talk took an informative look at the development in the early 20th Century of the Haber Process, and at its subsequent uses in both industrial fertilisation and chemical warfare, with the help of some explosive demonstrations.

The second event on Friday 27th July, was a hands-on show called 'Engineering Emulsions' by Dr Emma Carter and Laura Lee from the University of Birmingham. This family-friendly show explained all about emulsions, through a number of interactive experiments.



These included an explanation of surface tension with the help of a ping pong ball floating in water, and competitions to make marmite white through whipping, and how to get a coin from a corn flower/water mixture. The event reached a triumphant end with a volunteer being immersed in a big bubble!



Dates for next year's Wrexham Science Festival have not yet been announced, but for the latest news visit the website: www.wrexhamsf.com.

Jesus Cirre Torres, North Wales Local Section

RSC Lecture Series at BU

Bangor University School of Chemistry organizes 12 scientific seminars every academic year. These seminars are co-funded by the RSC and European Regional Development Fund (ERDF), through Wales Ireland Network for Scientific Skills (WINSS) project.

So far, during the first semester of 2012 - 2013, the School has hosted six excellent lectures from a wide range of interesting topics, reflecting the current active research areas in chemistry and the most recent advances in the field. Prof Edward Leicester from The University of Nottingham demonstrated how they have produced formulated nanomaterials from continuous hydrothermal synthesis. Dr Paul Evans from The University College Dublin introduced many new synthetic methods that they have developed for the preparation of bioactive nitrogen-containing natural products. Dr Mohammad Nure-Alam from Bangor University showed many modern techniques which are used in isolation and characterization of plant natural products. Dr Andrew Johnson from Bath University described some of their studies on developing new route to photovoltaic materials from organometallic complexes. Dr Neil Robertson from The University of Edinburgh introduced their recent studies on the synthesis, characterisation, thin-film deposition and device formation from electronically-delocalised, planar transition metal complexes. Prof Robert Evans from Brunel University delivered an interesting lecture on how to understand both the nature of the interaction of transferrins with the meningococcal receptor complexes and the mechanism whereby the pathogen acquires its ligand-bound iron, this understanding is essential to the development of rational strategies against meningococcal meningitis.

Each seminar has been well supported by academic staff, technicians, researchers, BU students, and people from local colleges and companies.

Hongyun Tai, Bangor University

27th Annual Young Scientists Symposium, School of Chemistry, Bangor University

The 27th Young Scientist Symposium was held at Bangor University, 18th September 2012. The symposium is a great opportunity for scientists from Bangor and Glyndwr Universities, at the early stages of their career, to present their work, as well as network and share information and knowledge. A great varied programme was presented, both in the oral and poster presentations.



Oral Presentation Prize Giving L-R: Moneer Mohsen; James Maskery; Mark Pitts and Dr Malcolm Jones, RSC North Wales Section

A well structured and clearly presented winning oral presentation was given by Mark Pitts. Mark is a third year student at Bangor University, conducting research under the supervision of Prof M Baird. His talk was entitled 'Towards the Detection of TB'. In second place was a presentation on the 'Synthesis and Testing of New Dyes for Dye Sensitised Solar Cells' by Moneer Mohsen. James Maskery was awarded third place in the competition for his presentation on 'When is a Hydrogen Bond a Hydrogen Bond?'

Two industrial speakers gave plenary talks during the day. Dr James Timmis, a Bangor graduate, currently works for Liquid Research Ltd and spoke about the properties, uses and potential of magnetic liquids. Dr Anna Codina from Bruker UK Ltd explained how reactions could be monitored using different techniques during process development, and how this could contribute to understanding the processes involved.

A high number of poster presentations made judging very difficult this year. Prizes, sponsored by the RSC North West Analytical Division, for the best poster presentations with analytical chemistry as their main theme or underpinning the research presented, were awarded to:

- 1st:** Lingyu Han, Glyndwr University, 'Extensional Rheometry and Dynamic Light Scattering of Telechelic Associating Polymer Solutions';
- 2nd:** Mark Long, Bangor University, 'Towards a Synthesis of a Neuroactive Polybioside from the Social Wasp, *Polybia paulista*';
- 3rd:** Ben Butler, Bangor University, 'Enhancing the Quantitative Capacity of MALDI-TOF MS'.



Poster Presentation Prize Giving L to R: Mark Long; Dr Vera Thoss, RSC North West Analytical Division; Lingyu Han and Dr Lorrie Murphy (accepting on behalf of Ben Butler)

Before the winners were announced, the North Wales Local Section held a special award ceremony to show their appreciation to two extremely valued long serving members of committee.



RSC North Wales Section Special Presentation L-R: Dr Erica Roberts, Chair, RSC North Wales Section; Dr Malcolm Jones, RSC North Wales Section; Dr Andrew Nichol (left panel) and Dr Peter Lloyd (right panel)

Dr Andrew Nichol, and Dr Peter Lloyd, were presented with a certificate and commemorative plate in recognition of their hard work over the years. Their commitment to the section has been second to none, and the committee express their thanks to both. May we wish them the best in their retirement from the committee!

Our thanks to the sponsors: the North West Analytical Division, Liquids Research Ltd, and also the North West Trust whom kindly sponsor this event annually. Thanks also go to the judging panel, Dr Malcolm Jones, Dr Peter Lloyd, Dr Andrew Nichol, and Dr Vera Thoss. Last but not least, thanks go to Dr Lorrie Murphy for her help with organising the event this year, Dr Jesus Cirre (Glyndwr University) as well as all the staff behind the scenes at Bangor University.

Erica Roberts, Chair, RSC North Wales Section

RSC Lancaster & District Section's Lecture Programme

Our lecture programme from October to December 2012 has been a great success.

The lecture on 2nd October by Professor Kurtz of UCLan on 'The Beauty of Galaxies' was very well attended, with 65 people coming to see a spectacular view of the universe using the latest technologies. Almost half of the audience were students from local sixth forms, which was excellent to see. The talk on the 8th November on 'Forensic Fire Investigation' by Stephen Andrews of UCLan was again well received by an audience of about 50 which included 20 school students.

The final lecture of 2012 on 4th December was by Professor Williams of UCLan, who gave a detailed history of 'Safety and Security in Atomic Energy', particularly as it applies in the United Kingdom - the talk was interesting, informative and delivered by a lecturer with considerable expertise and experience in the field.

Altogether an excellent start to our lecture series for this year. Future events for 2013 can be found in the Diary section, or by looking at the Local Sections page on the RSC website.

Harry Clarke, RSC Lancaster & District Section

Business Secretary and First Minister kick-start ‘Buildings as Power Stations’ Pilot Production Line



Business Secretary Vince Cable and Wales First Minister Carwyn Jones

Bangor University’s School of Chemistry is contributing to a research project which could put Wales at the forefront of global renewable energy technology.

A ‘Buildings as Power Stations’ pilot manufacturing facility, launched recently by Business Secretary Vince Cable and Wales First Minister Carwyn Jones, puts the UK on the threshold of a £1 billion pound new industry, which will revolutionise building construction and make a major contribution to renewable energy targets.

Enormous environmental benefits underscore the project, which could reduce the UK’s CO² output by millions of tonnes a year.

The technology focuses on new products which will turn buildings into power stations. The pilot production unit will develop functional coated steel and glass products to incorporate into existing and new buildings, enabling walls and roofs to generate, store and release energy. This will help address a widely predicted global shortage of energy supply, providing building owners and occupiers with a reliable energy source at point of use.

The £20m, five-year project at SPECIFIC, one of six IKCs in the UK, is backed by £10m funding from the Engineering and Physical Sciences Research Council (EPSRC) and Technology Strategy Board. A further £2m funding from the Welsh Government recognises the IKC’s strategic nature and potential economic impact, giving it added impetus.

Bangor University’s School of Chemistry, is working closely with SPECIFIC partners to develop low cost solar cells. Key targets are to increase light harvesting to increase efficiency whilst also addressing low energy manufacturing to reduce costs and embodied energy.

Dr Holliman explains: “Our work in this project seeks to accelerate the commercialisation of new functional coating technologies such as solar cells and to embed that knowledge within UK industry. We are bringing together lots of different scientists and taking technology out of the laboratory.”

Stevie Scanlan, Bangor University

Bangor University hosts WINNS training event



L-R: Dr Alaa Elbetany, Project Co-Ordinator, Bangor University; Dr Raj Bhardwaj, Agilent Technologies; Dr Anna Codina, Bruker UK Ltd; Dr June Frisby, Project Manager, WIT; Dr Hongyun Tai, Project Manager, Bangor University.

The Wales Ireland Network for Scientific Skills (WINSS) ran its first training event for local SMEs (small and medium sized businesses) at the School of Chemistry recently. The event was designed to assist local companies that work across chemistry, life sciences and material sciences. The WINSS project will provide a range of specialist skills training to develop the expertise needed by the sector. WINSS is a €2.6 million project funded under the Ireland Wales 2007-2013 INTERREG IVA programme and managed in Wales by Bangor University’s School of Chemistry.

Stevie Scanlan, Bangor University

State of the Art Research Facility assists ‘Green’ Industry

Vice Chancellor Prof John Hughes, Ieuan Wyn-Jones and the VIPs with BEACON and the facility staff



A £1M industrial facility, on the Llangefni Industrial Estate at Mona, has been helping local companies test new eco-friendly alternatives to existing products.

New equipment at the facility, purchased as part of a £20M BEACON project (a cross Wales partnership between Bangor, Aberystwyth and Swansea Universities), has enabled Bangor University’s BioProducts and BioRefining Technology Transfer Centre to work with industry to scale up the extraction of high value chemicals from plants, using procedures developed on a small scale in a conventional laboratory environment. These chemicals have a range of applications in the cosmetics, medical and nutraceuticals sectors. The Centre provides a valuable resource for industry

companies have access to the latest research and development equipment, which they can use to test and develop new products and processes, without having to shut down their own plants.

At the launch event, Mr Ieuan Wyn-Jones, Assembly Member for Anglesey said, "I'm fully supportive of this project which provides much-needed research facilities for our manufacturing sector. Manufacturing will play a key role as the economy grows out of recession and the work done by BEACON and Bangor University in establishing this Centre which will provide opportunities for sustainable products to be available locally and ensure a welcome boost for the economy here in Anglesey and throughout North Wales."

Stevie Scanlan, Bangor University

Continuous Flow Technology in Industry Symposium, March 2012

Over the last couple of years, there has been increased interest in continuous processing technology for high value, niche scale, speciality chemical manufacturing. Unlike commodity and high-volume speciality chemical manufacturing, this part of the chemicals industry has relied on the flexibility of batch manufacturing to enable a wide variety of chemical processes to be undertaken with only a minimal amount of process development and understanding as the batch reactor can cope with a great deal of uncertainty and process variability.



King's Manor, York

The RSC Speciality Chemicals Sector ran a very successful Flow Technology Symposium along side ChemSpec Europe in 2011 and, with Craig Johnson of the EPSRC Centre for Innovative Manufacturing in Continuous Manufacturing and Crystallisation (CMAC), began to plan a UK based 2-day symposium to be held in 2012. King's Manor in York was selected as the venue and this proved to be an excellent location, with good facilities and two days of glorious springtime sunshine in March. For those arriving on the Monday evening, CMAC provided a welcoming drinks reception.



Prof Steve Ley opens the event

The symposium was divided into 3 themes – Chemistry with Flow, Equipping for Flow and Processing with Flow. Prof Steve Ley opened the symposium on the first day with a Key Note address 'New Tools for Molecule Makers'. Ley's work dispelled many prejudices that only a small sub-set of chemistry could work in flow with many examples of natural product synthesis

that had been achieved in flow mode – a tour de force to begin 2 days of very full lectures attended by over 90, including representatives from 16 exhibitors. The symposium continued with a balanced mix of lectures from academics, industrialist and equipment manufacturers.

Prof Oliver Kappe (University of Graz) highlighted the advantages flow chemistry offers in accessing unusual process operation windows of high temperature or high pressure and Prof Allen Wright (University of Newcastle) cautioned against ignoring good chemistry and chemical engineering understanding of the desired process to design the best processing which in some cases may still be a batch reactor.

Highlighting some industrial experiences were Peter Poechlauer (DSM) who has applied flow chemistry to the generation of hazardous reagents at the point of use; Gunter Weingartner (Dottikon) who has specialised in using continuous processing to manage highly reactive, short lived species; and Dominique Roberge (Lonza) who has worked with Ehrfeld Microtechnik to develop Lonza's FlowPlate range of microreactors.

Equipment manufacturers included HEL, Syrris, Chemtrix, Mettler Toledo, and AM Technology who highlighted the benefits of their equipment for developing flow chemistry or for on-line analysis. This was supported by an exhibition area with plenty of opportunities to network and see demonstration equipment.



CFT exhibition

Thanks to the sponsors, CMAC and Advion, the lively discussions continued into the evening with a Symposium Dinner held within Kings Manors' Refectory.

The second full day started with a Key Note Address from Prof Paul Sharratt (Institute of Chemical and Engineering Sciences (ICES), Singapore) who had begun to tackle the scale up of continuous

processes in a pilot plant environment. This was followed by a joint presentation by Craig Johnston and Prof Alastair Florence highlighting their work at CMAC, in collaboration with industry, to tackle the engineering and physical processing challenges of crystallisation in continuous mode. Taking a different approach, Prof Lee Cronin (University of Glasgow) talked about self-assembly of reactor systems using process feedback to form a variety of novel inorganic clusters.

The second day also had presentations from Microinnova, ThalesNano, Alfa Laval and Bayer Technical Services all presenting different engineering solutions to the scale up of continuous processing.



A full lecture theatre

The symposium closed with a presentation from Fabrice Odelle, AstraZeneca who gave a talk on real examples of the application of flow chemistry to the generation of materials for the pharmaceutical industry, whilst highlighting the continued challenge posed by chemistries involving any solid phases either desired or undesired by-products. He concluded by saying that the flow chemistry offers the potential to react to increased demands for development products simply by 'leaving the tap open'.

As one of the first UK based symposium to focus on the application of flow chemistry to the high value speciality chemicals sector, the feedback was very positive from all of the attendees. We even had an impromptu presentation from Prof Frans Muller (University of Leeds) highlighting a Technology Strategy Board call for grants for projects which look into some of the challenges in the wider application of flow chemistry in enabling sustainable processing - this shows that innovation in this area is a hot topic.

*Gareth Jenkins,
RSC Speciality Chemicals Sector*

Keep up with the flow in 2013

Resolving Industrial Process Issues

Royal Society of Chemistry Symposium

Practical Continuous Flow Technology

5 - 6 June, 2013

M.O.C., Munich, Germany

This two day international symposium will be held on the Exhibition Floor at the 2013 Chemspec Europe and Chemsourcex Exhibitions organised by Quartz Business Media. It follows the successful RSC events held in Geneva in 2011 and York in 2012 and will provide a timely update on those events. The symposium will highlight recent advances in continuous flow technology and its application in the scale up and production of speciality chemicals.

Free Attendance

Delegates will be able to pick and choose which lectures they attend.

Programme

Morning Session, June 5

Holistic View

- 10.30 The "Factory of Tomorrow" for Flow Processes and Microreactors
Dominique Roberge, Lonza, Switzerland
- 11.00 Sustainable Manufacture of Fine Chemicals by Flow Processes
Peter Poechlauer, DSM Fine Chemicals Austria Nfg, GmbH & Co Kg, Austria
- 11.30 Continuous Processes – Sustainable Manufacturing
Jörg Schrickel, CABB AG, Switzerland

Lunch Break

Afternoon Session, June 5

Holistic View (continued)

- 13.00 Value Proposition for the Implementation of Continuous Manufacturing
James M B Evans, MIT, USA
- 13.30 Exploring the Implications of Alternative Process Technologies on the End-to-end Pharmaceutical Supply Chain.
Jag Srni, Cambridge University, UK

Refreshment Break

Insights from Continuous Manufacturing on a Commercial Scale

- 14.30 Developments in Continuous Processing Technology for Tablet Manufacture
Trevor Page, GEA Pharma Systems, UK
- 15.00 From Substance to Product - An Industrial Perspective on Continuous Processing
Amy Robertson, AstraZeneca, UK
- 15.30 Insights from GSK's Experience in Developing Pharmaceutical Continuous Crystallization Processes - What have we learned and where are the gaps.
Chris Price, GlaxoSmithKline, UK

16.00 Close

Morning Session, June 6

Holistic View (continued)

- 10.30 Chemical Understanding: The Key to Continuous Processing
Mark Bratt, Intesischem, UK
- 11.00 The Amazing Journey of a Molecule - Separating, Controlling and Intensifying Chemical and Physical Changes
Antonio Quintieri and Denis Osullivan, P&G Company

Scale Up from Laboratory to Commercial Production

- 11.30 From Laboratory to Production: a Seamless Scale-up
Alessandra Vizza, Corning Reactor Technologies, France
- 12.00 Flow Reactor Technology – A Flexible Tool for Reaction Optimisation and Chemical Production
Charlotte Wiles, Chemtrix BV, UK
- 12.30 Development of a Continuous Crystallisation in an Oscillatory Baffled Reactor
Alastair Florence, Strathclyde University, UK

Lunch Break

Afternoon Session, June 6

Equipment

- 13.30 Intensified Pumps for Intensified Processes
Carsten Damerau, HNP Mikrosysteme GmbH, Germany
- 14.00 Innovations in Mass Flow Meters Boosting Process Efficiency in Batch & Continuous Operation
Sonal Gilani, Emerson Process Management, The Netherlands
- 14.30 Close

Contact: Dr. Ruth M. Lane Tel/Fax: +44 (0)1928 788071 E-mail: ruth@cowlane.co.uk www.rscspecialitychemicals.org.uk

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SCOTTISH DEVELOPMENT INTERNATIONAL

CMAC
Continuous Manufacturing and Crystallisation

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Chemistry in the Oil Industry XIII: Oilfield Chemistry – New Frontiers

4th – 6th November 2013 at Manchester Conference Centre, UK

30 years since the first Chemistry in the Oil Industry Symposium

Monday 4th November
'Back to the Future'
by Graham Payne and Ian Macefield
who participated in the inaugural
symposium

Tuesday 5th November
Keynote Speaker
– Professor Malcolm Kelland,
Stavanger University
'Production Chemicals and their Future'

Lifetime Achievement Award to Professor Ken Sorbie
for his contribution to oilfield chemistry

CALL FOR PAPERS AND POSTERS

It is intended that the symposium will focus on EOR/IOR, non-conventional oil and gas eg shale oil and gas, Arctic region, ocean hydrates, etc. These areas necessitate 'new' innovative chemistry and show that the future is bright for the application of chemistry and chemicals to extend the economic life of mature wells or to enhance the profitability of new fields within the challenges of REACH legislation.

Topics that papers are invited on:

- New and Green Chemistry
- Enhanced Oil Recovery (EORIOR)
- Methodologies
- Corrosion Inhibition
- Chemical Management
- REACH regulations - as lower volume chemicals are coming under the regulations
- Integration of REACH and OSPAR regulations
- Progress on nanoparticles and polymers registration
- Biodegradation results – and MSDS documents saying 'not passed for sea use'
- Shale Stimulation, Fracturing, Gas Recovery
- Science, Regulation and Economics, etc

Speakers will be given free attendance at the symposium and their papers will appear in the Proceedings which will be given to all delegates on arrival at the symposium.

Posters will appear in the Proceedings and there will be a prize for the best poster. Student bursaries will be offered to students who present posters.

Abstracts of offered papers and posters should be submitted to Ruth Lane (Email: Ruth@cowlane.co.uk) by 1 March, 2013

Sponsors and Exhibitors – if you would like to be a Sponsor and/or an Exhibitor, please contact Ruth@cowlane.co.uk

Visit www.rscspecialitychemicals.org.uk/future-conferences/chemistry-in-the-oil-industry-xiii-oilfield-chemistry-new-frontiers for more information about the symposium.