

## RSC Beijing Local Section plays a key part in the 1<sup>st</sup> China Science Festival

The 1<sup>st</sup> China Science Festival, organized by Science Alliance Network under the auspices of the China Association for Science and Technology (CAST) took place in the Beijing Exhibition Center between 18 July and 3 August. Following the Local Section's bid, the UK was selected as the invited theme country and worked with the British Embassy and RSC staff in China to put together a showcase of UK science and technology from exhibitors in universities and industry. The Chair of the Local Section, Prof. David Evans was invited to co-chair the opening ceremony, at which he performed a Chemical Magic double act with well-known professional magician, Liu Shijie (Mr. Black). The opening ceremony was addressed by the British Ambassador to China, Sir Sebastian Wood, and other dignitaries.

Each day during the festival, Beijing Local Section members and an enthusiastic team of volunteer demonstrators from Beijing University of Chemical Technology, Beijing Royal School and Dulwich College Beijing operated a Fun with Chemistry laboratory that offered visitors a chance to conduct hands-on experiments. These included using red cabbage indicator, making polyvinyl alcohol (PVA) slime and alginate worms, and carrying out the 2013 RSC Global Experiment to measure the amount of vitamin C in different fruits and vegetables. The use of a range of different household materials highlighted the close connection between chemistry and our everyday lives. Throughout the event, the laboratory was very popular, with eager children and their parents patiently lining up in long queues to be able to carry out the experiments.



David Evans and Liu Shijie at the opening ceremony



David Evans and the British Ambassador, Sir Sebastian Wood, working with two aspiring young chemists



A view of the laboratory with students preparing some excellent alginate worms



Chemistry is fun!



Young students carefully carrying out the 2013 RSC Global Experiment to measure the amount of Vitamin C



High school students learning about polymer chemistry



During the lunch breaks and when the queues got too long during the day, David Evans entertained parents and children with a variety of demonstrations and also gave two lecture demonstrations on "Science Made Simple" with the aid of some young helpers.



Some of the volunteers manning the RSC lab



The younger they start the better!



## Chemistry in action at the press conference to announce the 1<sup>st</sup> China Science Festival

The Beijing Local Section also brought a chemical flavor to the press conference held in May to announce the China Science Festival to the media and the general public. The platform party were faced with a huge block of ice in which the five Chinese characters representing the name of the festival had been carved. On pouring the same colorless liquid into each of the characters, they were astonished to find that the letters filled up with liquids of five different colors. All down to chemistry of course.....before the ceremony a few drops of mixtures of different pH indicators which are colorless in neutral solution had been placed inside the characters and what the guests were adding was a dilute solution of sodium hydroxide.



## Spreading the word through children's TV

Items for two programmes on CCTV14 Children's Channel were filmed in the Beijing Local Section chemistry laboratory during the China Science Festival. For "Open Sesame" ("芝麻开门"), we set up a competition in which two teams of three students had to compete to see who could make a clock reaction change colour nearest to the target time by adding the right amount of water, who could make the best chemical traffic lights using red cabbage indicator and who could grow the longest calcium alginate worm. In the final round of the competition, the two teams had to see who could make the longest "polymer chain" in three minutes by running around the venue and persuading as many human "monomers" as possible to link hands and build up the chain. After a spirited competition, the team of three girls emerged victorious over the team of three boys. The item can be seen online at <http://tv.cntv.cn/video/C16723/0fbfab98051844418733665b24185c1d> (the first 20 minutes of the programme).



"That's Cool!" ("大仓库") also had an item on the Science Festival which featured students studying the reaction of vinegar and bicarbonate of soda. When carried out in a resealable plastic bag, they found a large amount of carbon dioxide gas, which extinguished a burning splint, was produced in an endothermic reaction. We then asked them what would happen if they carried out the same reaction in a sealed film canister and they were delighted to find it was launched upwards like a rocket. The item can be seen online at

<http://tv.cntv.cn/video/C16700/fe60a653ecee4bbcb492a76ffbd512cd> (the 9th–10th minutes of the programme).



### “Fun with Science” programme for migrant children goes from strength to strength

The children of migrant workers from the Chinese countryside are generally unable to study in state schools and attend poorly resourced migrant schools set up outside the state system. In 2012, the RSC Beijing Local Section used its International Year of Chemistry Challenge grant to set up “Fun with Science”, a practical chemistry programme which can be taken into these schools and give students there a chance—their only chance—to study science, in collaboration with the Migrant Children’s Foundation (MCF) charity. After being chosen as an IYC Challenge winner, the Beijing Local Section was able to set up additional teams of volunteers to take the programme into other migrant schools. In 2014, the original team of postgraduates from Beijing University of Chemical Technology (BUCT) augmented by RSC staff worked with Bowen Shibalidian School and Xingshun Experimental School in Tongzhou, and a second team led by David Evans made up of undergraduates from Peking University worked with Boshi School in Fangshan. In addition, RSC member Kirstie Parker, Head of Chemistry at Dulwich College Beijing, supported by a group of her senior students, worked with Mingyuan School. Two other international schools are planning to set up teams to work with different migrant schools in 2015. **Update:** We heard in early 2015 that unfortunately Bowen Shibalidian School has been demolished to make way for redevelopment, with the students either having to move to other schools or return to their home villages, an illustration of one of the challenges that migrant schools face.



Bowen students making “elephant’s toothpaste” using yeast and hydrogen peroxide



Boshi students carrying out the RSC 2013 Global Experiment to compare the amounts of vitamin C in different fruits and vegetables



MCF founder Helen Boyle with Xingshun Experimental School students investigating the results of placing M&M’s chocolates in water



Kirstie Parker and students at Mingyuan School making rockets using sodium bicarbonate and vinegar

## Forming (chemical) bonds between parents and children

The pressures and distractions of modern life can mean that parents—whether catching up on work emails or updating their social networking status—and their computer-game-playing children do fewer things together than used to be the case. Recently RSC Beijing Local Section joined forces with the Family Education Department of the China National Children's Center in an effort to reverse this trend, whilst also introducing young children and their parent to the fascination of chemistry. On six Saturday mornings from January to April, thirty parent-child pairs carried out a variety of experiments including making "chemical traffic lights" with red cabbage indicator, preparing alginate worms, and comparing the amounts of vitamin C in apples, tomatoes and red peppers (part of the RSC Global Experiment), finishing by launching "rockets" powered by vinegar and bicarbonate of soda. Most of the experiments involved household materials and the participants were also given some "homework"—additional experiments to do at home. For example, having made one non-Newtonian fluid (PVA slime) in the "lab", they were asked to make another from cornstarch and water at home. Beijing Local Section Chair David Evans says "In the first session, one or two of the parents were not sufficiently involved, and rather more tried to take over and not let their child stretch themselves, but gradually we found that parents and children began to work together more effectively."



Children and their parents carefully carrying out their experiments together



As the programme was so successful (one father reported that his son used to want to be a bus driver but had now decided to become a scientist!), it was repeated for another thirty parent-child pairs in June and July, and then a new course with a different set of experiments—involving diffusion of the coating of M&M's chocolates in water, properties of oil and water, chromatography, as well as the RSC 2014 Global Experiment on growing crystals (see overleaf)—was run from October to December, with many of the earlier parents and children coming back a second time. In the future the Beijing Local Section is planning to run training courses for staff in the network of Children's Centers throughout China in order to allow the programme to be repeated elsewhere.



Feedback from parents was very positive

## RSC 2014 Global Experiment comes to Beijing

One of the experiments carried out at the National Children's Centre was the RSC's 2014 Global Experiment on "The Art of Crystallization". In the first session, each parent-child pair chose one of the samples (table salt, sugar, Epsom salts, potassium nitrate or alum) and measured the average mass to saturate 40 cm<sup>3</sup> of tap water. When they compared their results with the average values for the UK given on the Global Experiment website, they found the values were much lower in each case—indicating just how hard Beijing tap water is (although the relatively low room temperature will also have contributed). Then they set up their saturated solution and—with a great sense of anticipation—left it to crystallize until the next class. Since this was two weeks away, quite a few couldn't bear the suspense and repeated the experiment with one of the other solids when they got home so that they could watch developments at first hand. The next class started in great excitement as the students and their parents looked at their crop of crystals and compared them with those of other families. On the official RSC scale of crystal size (from 8–28), the sizes of the biggest crystals were: table salt (23), sugar (25), Epsom salts (28), potassium nitrate (27) and alum (25)—a creditable all-round performance, despite the hard water!



Having got good results with their saturated solutions, for the remainder of class the groups looked at supersaturated solutions. They were amazed to find that 15 g of sodium thiosulfate could dissolve in as little as 3 cm<sup>3</sup> of hot water (deionized, not Beijing tap water!) and even more surprised that when they dropped a tiny crystal of sodium thiosulfate into the cooled solution it suddenly crystallized, and became quite warm. Finally they examined how this process rapid exothermic crystallization of a supersaturated solution—can be used in sodium acetate hand warmers. Although an impressive amount of heat was liberated with the temperature reaching almost 50 °C, they noticed that the bags only contained small crystals, with no large beautiful crystals to compare with those they had grown earlier. This shows that success is more likely to come to those who are patient, rather than those who seek instant gratification.....something many of the parents said they were sure they would have occasion to remind their offspring of in the future citing the RSC Global Experiment as evidence!



## Beijing Royal School win 2014 “Top of the Bench”

In March, Li Yunxiang, Wang Yi, Zhang Ziyi and Wu Ke from Beijing Royal School emerged as winners of the first Royal Society of Chemistry Beijing Local Section “Top of the Bench” competition, after a spirited competition with students from Dulwich College Beijing, Harrow International School Beijing, Luhe High School and Yew Chung International School held in the Chemistry Department of Tsinghua University. Teams of four students aged 14–16 tackled two chemical quizzes in the morning—one multiple choice and one identifying famous scientists and their inventions. Fortified by pizza for lunch, they then had to solve two practical chemistry challenges: finding out why a colorless solution went blue when the bottle was shaken, and then devising a way to make it go blue without touching the bottle. The winning students and their teacher, Zhang Shan, were presented with their trophy by the British Ambassador His Excellency Sebastian Wood and Professor David Clary CChem FRSC FRS, a former President of the RSC Faraday Division and President of Magdalen College and Professor of Theoretical Chemistry at Oxford University at a ceremony in the Ambassador’s Residence later in March. RSC members Susan Schamp, Kirstie Parker, Liu Dongsheng and David Evans, all worked hard to make this event a great success and we look forward to repeating it next year.



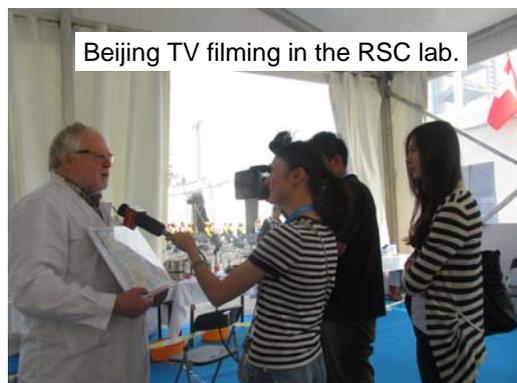
# Royal Society of Chemistry

## Beijing Local Section Newsletter 2014

### 2014 Beijing Science Festival



At the invitation of the Beijing Association for Science and Technology (BAST), the Beijing Local Section participated in the 4th Beijing Science Festival in the Olympic Park from September 18–22 with a booth having a rolling programme of “brand new” chemistry experiments which we were using for the first time. Around 2000 students—watched by their parents and teachers—had great fun studying the reaction of calcium chloride with sodium bicarbonate and methyl red solution (how many observable changes do you think they are?), making batteries from a water melon, looking at thermochromic pigments and finding the dramatic effect on the rate of the reaction of iron(III) nitrate and sodium thiosulfate solutions of adding just one drop of copper(II) sulfate solution. Local Section Chair David Evans also gave a series of lecture demonstrations during the lunch breaks, as well as impromptu demonstrations when (as often happened) the queues got too long. RSC member Susan Schamp, along with students from Beijing University of Chemical Technology made up an enthusiastic team of demonstrators.



Madam Lv Xiwen (吕锡文), Deputy Party Secretary of the Beijing Municipal Education Commission inspecting the RSC lab.



Beijing Local Section were selected as one of the six “Outstanding Participants” in the Festival and presented with a certificate by Zhou Lijun, Vice-Chairman of BAST.



## 32<sup>nd</sup> Beijing Students' Science and Culture Festival

At the invitation of the Beijing Municipal Education Commission and the Beijing Municipal Science & Technology Commission, the Beijing Local Section took part in the 32<sup>nd</sup> Beijing Students' Science and Culture Festival Opening Ceremony and Summer Camp held at the People's Armed Police Force Academy in Changping from August 4–9 2014. The Chair of the Section David Evans gave two lecture demonstrations on the topic "What is a chemical reaction?" to the delegations of primary school students and their teachers from Huairou and Yanqing Districts.



At the closing event of Festival, held on December 20 and 21 in Beijing University of Technology, the Local Section ran a mobile laboratory with a rolling programme of chemistry practicals, which was well attended throughout.

The RSC lab at the Beijing Science Festival featured in the review of major popular science activities in Beijing in 2014



## Taking chemistry into the shopping mall

The attendees at science festivals naturally already have some interest in science, but it is also important to reach out to an audience who would not normally attend such events. With this in mind, RSC Beijing Local Section accepted an invitation from BAST and the Beijing Municipal Commission of Commerce to spend the weekend in the New Yansha Golden Resources Shopping Mall explaining to customers how chemistry is an integral part of their daily lives, as well as being an exciting subject to study.



Doing chemistry with yeast from the supermarket and hydrogen peroxide from the pharmacy next door



Without chemistry there would be no nylon  
(or any other synthetic polymer)

## Fundraising for Migrant Children's Foundation

The Local Section also ran practical chemistry sessions at three fund-raising events organized by the Migrant Children's Foundation—RSC's partner in the "Fun with Science" programme for migrant children. Not only do these bring chemistry to a wide audience, they also raise money for MCF since we ask parents to make a donation in exchange for their children carrying out the experiments. The money raised goes towards funding health check ups for migrant children, which their families are often unable to afford. In April we took part in the MCF Bazaar at the Riviera Country Club and in November attended both the Christmas Bazaar at Beijing City International School and the 'Carols for a Cause' event at the Riviera Country Club. A total of over 4000 RMB was raised for MCF.



## School Science Festivals

An increasing number of Beijing Schools are organising their own Science Festivals and are keen to invite the Local Section to bring along our mobile chemistry laboratory and allow their students to experience hands-on practical chemistry. This year we took part in festivals in five primary schools (Jugezhuang Central Primary School (The 32<sup>nd</sup> Miyun District Students' Science Festival), Anzhenli No. 2 Primary School, Yongtai Primary School, Dongtieving No. 2 Primary School, and Fangcaodi International Century Primary School), two junior middle schools (No. 19 Middle School and the Middle School Affiliated to Beijing Institute of Technology) and one high school (No. 13 High School), as well as a science fair organized by China Unicom for their employees and their children.

Opening Ceremony of the  
32nd Miyun District Students' Science Festival



Dongtieving No. 2 Primary School



Anzhenli No. 2 Primary School



Middle School Affiliated to  
Beijing Institute of Technology



No. 13 High School



China Unicom Science Fair



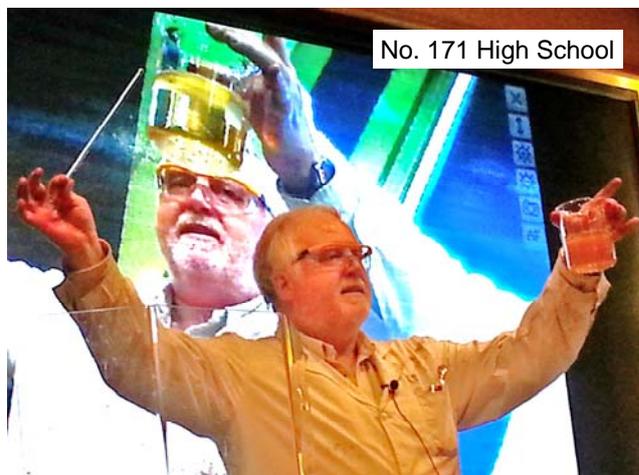
# Royal Society of Chemistry Beijing Local Section Newsletter 2014

## Lecture Demonstrations for Schools

Throughout the year, Prof. David Evans presented a variety of lecture demonstrations to school audiences in Beijing, one to kindergarten students, 13 to primary school students, two to middle school students and three to high school students. Two lectures in May and December on “What is a chemical reaction?” and “Chemistry....It’s all around us” in Daxing No. 5 Primary School, attracted the record audiences for a Beijing Local Section lecture with 230 students in the lecture hall and the remaining 41 classes (1700 students) watching the lectures by live feed in their classrooms



Baijiazhuang Primary School



No. 171 High School



Yucai Middle School



Shunyi No. 9 High School

## BAST Summer Camp for high school students

In July, Prof. David Evans gave a lecture demonstration on “What can(‘t) we do with hydrogen peroxide” to 200 high school students from all over North China attending a week long summer camp in Beijing organized by BAST, and also organized laboratory sessions for the students

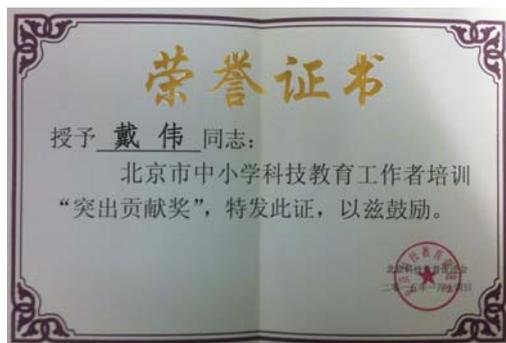


## Beijing Local Section training sessions for teachers

The Beijing Municipal Education Commission have decided to increase the amount of practical science included in the primary school and junior secondary school curricula.

Therefore there is a need to train teachers to deliver the new content. Prof. David Evans was invited by the Beijing Sci-Tech Education Promotional Association give training sessions in April and September to over 180 senior teachers from primary and secondary schools from all over Beijing. The sessions included a discussion of the place of STEM in the UK National Curriculum, and a number of demonstrations to show how they could be used to spark students' interest and increase their understanding of scientific principles. The talk emphasized that it was not necessary to have a well equipped chemistry laboratory with a large number of chemicals reagents since many interesting and educational experiments can be carried out with household materials such as vinegar, baking soda, red cabbage, yeast and hydrogen peroxide. Finally the teachers carried out a number of experiments themselves.

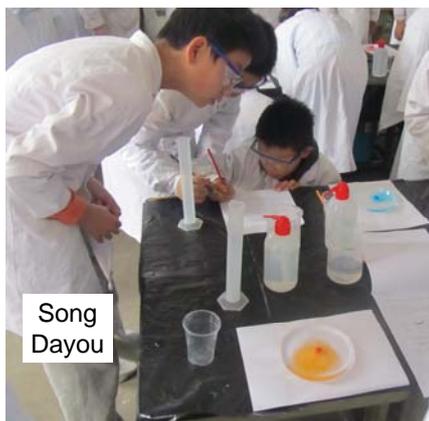
David Evans was awarded a prize for an "Outstanding Contribution" to these events.



In addition, in June, at the invitation of the CAST Children & Youth Science Center, Prof. David Evans gave a lecture demonstration at the China Science and Technology Museum to 170 educators from science museums all over the country and a training session in practical chemistry was held at the China Science Festival for a delegation of staff from science museums.

## Beijing Local Section's youngest volunteer steps up

Song Dayou, a Grade 7 student from Dongzhimen Middle School is a keen chemist who has been a regular participant at Local Section events such as the Beijing and China Science Festivals. Such is his enthusiasm and knowledge that he has now joined the team of postgraduate volunteer demonstrators working with migrant school children, and when he and his classmates were each asked to put on a short performance at their end of year party, he naturally showed them a couple of chemistry demonstrations—a clock reaction and an oscillating reaction.



### Beijing Local Section on tour

Although the vast majority of Beijing Local Section activities take place in Beijing (not surprisingly!) we do occasionally visit other places in China. In June David Evans gave a lecture demonstration to an enthusiastic audience of primary school students at the Guizhou Provincial Science Fair. The event was covered in the 'Guizhou Daily' which noted this was the first time that an international organization had taken part in the event. David Evans also met with schoolteachers and staff from the provincial science museum to discuss the planning and delivery of practical chemistry classes.



2 | 要 闻 |

贵阳新动力 • 项目观察

### 昼夜付出,为了景区的明天

——黔北古韵升级改造项目快速推进的背后的故事

“黔北古韵”项目，是贵州省重点工程，也是贵阳市重点工程。该项目旨在对黔北古韵景区进行升级改造，提升景区品质，增强景区吸引力。项目自启动以来，得到了社会各界的广泛支持和关注。在市委、市政府的坚强领导下，项目指挥部和各参建单位通力合作，昼夜付出，快速推进，取得了显著成效。

项目指挥部坚持“以人为本、生态优先、绿色发展”的理念，科学规划、精心组织、严格管理，确保了项目高质量推进。目前，项目各项工程进展顺利，景区面貌焕然一新，为游客提供了更加舒适、便捷、安全的旅游环境。

未来，项目指挥部将继续加大工作力度，加快推进项目剩余工程，确保项目早日完工，为贵阳市旅游产业高质量发展做出更大贡献。

2014年6月10日 贵阳日报

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贵阳市启动第三批市管专家评选工作

为进一步加强市管专家队伍建设，提高专家水平，贵阳市启动了第三批市管专家评选工作。此次评选工作坚持公开、公平、公正的原则，广泛吸纳社会各界优秀人才参与。目前，评选工作正在有序进行中。

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全省启动全省民族团结进步创建活动

为深入贯彻落实中央民族工作会议精神，促进民族团结进步，贵州省启动了全省民族团结进步创建活动。活动旨在通过多种形式，增进各民族之间的了解和友谊，共同维护国家统一和民族团结。

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贵阳孔学堂传统文化活动公告

孔学堂作为贵阳传统文化的重要载体，定期举办各类传统文化活动。包括国学经典诵读、书画艺术展览、传统礼仪展示等。欢迎广大市民踊跃参与，共同传承和弘扬中华优秀传统文化。

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我省今年启动特殊教育三年提升计划

为全面提升我省特殊教育水平，促进特殊儿童健康成长，贵州省启动了特殊教育三年提升计划。计划将加大投入，改善办学条件，提高教师素质，创新教学方法，努力实现特殊教育高质量发展。

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倡导富强民主文明和谐 倡导自由平等公正法治 倡导爱国敬业诚信友善

In September, at the invitation of the RSC Shanghai office, David Evans gave lecture demonstrations on the topic "What can(t) we do with hydrogen peroxide?" ('双氧水丰富多彩的化学反应') to audiences of around 200 high school students at the High School Affiliated to Fudan University and the Cambridge International Centre affiliated to Shanghai Normal University.



## 懂 Understanding Science “Understanding Science” 2014 Programme

Scientific seminars for the general public

Together with the UK Institute of Physics and the International Space Science Institute Beijing, the Beijing Local Section organises “**Understanding Science**”, a Café Scientifique-style programme which provides an opportunity for anyone who is curious about science, or wants to know more about what’s happening at the frontiers of research today, to find out by listening to leading scientists from China and abroad talking about their work. The talks are informal and accessible to everyone, with no specialist knowledge required. Afterwards, there is an opportunity for plenty of questions and discussion. They take place in either the Wudaokou or Sanlitun area. Topics in 2014 included two talks to mark the International Year of Crystallography (on its applications in biology and in material science), details of some of the first results sent back by the Philae lander just a few days after it landed on the comet 67P/Churyumov–Gerasimenko, climate change, future energy technologies and the science of beer.

If you wish to be added to the mailing list please email [understandingsciencebeijing@gmail.com](mailto:understandingsciencebeijing@gmail.com)

**懂 Understanding Science**  
Scientific seminars for the general public

Wednesday  
19<sup>th</sup> November  
2014  
7.30 pm

### Conquering the Comet

Spacecraft Rosetta writing history

**Prof. Rafael Rodrigo**  
ISSI, Switzerland

Comets have evolved together with the Solar System around 4.5 billion years ago and are believed to bear secrets about the formation of the Earth. But still much of the knowledge on comets remains in the dark. For the past ten years the Rosetta spacecraft – a mission by the European Space Agency – was on its journey through space to conquer the comet 67P/Churyumov-Gerasimenko. After the over six billion kilometers long chase, Rosetta orbiter made history on August 6, 2014 as the first spacecraft to rendezvous with a comet. Another historic breakthrough will be achieved when Rosetta places the lander Philae on the comet's surface on November 12. The lander will transmit data about the comet's composition from the surface and will help scientists learn more about the role of comets in the evolution of the Solar System. The Understanding Science talk will give details on the historic comet landing and present the first scientific results gained.

Rafael Rodrigo is the Executive Director of the International Space Science Institute (ISSI) in Bern, Switzerland. As a Co-Investigator he is participating among other projects in the Instruments “Osiris” and “Giada” of the ESA Mission Rosetta.

**The House Café: Third Floor, 88 Shuangqing Lu, Haidian District**  
大家咖啡: 海淀区双清路88号华源世纪商务楼三层西侧  
Contact: [understandingsciencebeijing@gmail.com](mailto:understandingsciencebeijing@gmail.com)  
Free entrance – food & drinks at your own expense

**IOP Institute of Physics**

November 2014

**懂 Understanding Science**  
Scientific seminars for the general public

Monday  
20<sup>th</sup> October  
2014  
7.30 pm

### Crystallography: The Science of (almost) Everything

**Prof. Dame Julia Goodfellow**  
University of Kent, UK

2014 is the UNESCO International Year of Crystallography, the science that underpins the development of practically all new materials. It is a field where both China and the United Kingdom excel. Crystallography is at the forefront of modern biology. This talk will explain why understanding the structure of matter is so important and the part crystallography has played in helping to reveal some of the mysteries of life, and why it is so important for the future. For example, drug design relies on understanding the precise shape of complex molecules, and crystallography of bacteria can be used to enhance food production. Crystallography is also one of the areas of science where women have made a special contribution. The discovery of the structure of DNA, for example, would not have been possible without the diffraction experiments carried out by Rosalind Franklin. The talk will draw on the lessons from crystallography to underline the importance of maximising the opportunities for women scientists and to explain the kinds of initiatives that can help encourage women to become, and develop, as scientists.

**Professor Dame Julia Goodfellow is the Vice Chancellor (President) of the University of Kent and a member of the United Kingdom's Council for Science and Technology**

**The House Café: Third Floor, 88 Shuangqing Lu, Haidian District**  
大家咖啡: 海淀区双清路88号华源世纪商务楼三层西侧  
Contact: [understandingsciencebeijing@gmail.com](mailto:understandingsciencebeijing@gmail.com)  
Free entrance – food & drinks at your own expense

**IOP Institute of Physics**

October 2014

**懂 Understanding Science**  
Scientific seminars for the general public

Thursday  
25<sup>th</sup> September  
2014  
7.30 pm

### Future Energy Technologies and China

**Dr. Alexander van der Made**  
Senior Principal Scientist  
Shell's Future Energy Technologies

China is the world's largest coal user – the country uses as much coal as the rest of the world combined – and consequently is the world's largest carbon emitter. China is still investing heavily in processes that use coal as a feedstock for power, synthetic natural gas, liquid fuels, and chemicals. Yet China is also the number one investor in clean and green energy like hydropower, nuclear power, wind power and solar heating and photovoltaics. It also has long-term deployment targets for clean and green technologies that exceed those of other nations.

In this presentation we will explore this dichotomy and show that there are realistic pathways for China to use its coal more cleanly and to build a sustainable energy system. For China to follow it would be of pivotal significance for the world – in embracing a low-carbon pathway, China could become the greatest greening force in the world.

**Venue: House Café – Wudaokou, Haidian District, Beijing**  
(See attached map for directions)

Contact: [understandingsciencebeijing@gmail.com](mailto:understandingsciencebeijing@gmail.com)  
Free entrance – food & drinks at your own expense

**IOP Institute of Physics**

September 2014

**懂 Understanding Science**  
Scientific seminars for the general public

Thursday  
20<sup>th</sup> March  
2014  
7.30 pm

### X-ray Spectacles: Looking Inside Materials

**Prof. Andy Godfrey**  
School of Materials Science and Engineering,  
Tsinghua University

Crystals are familiar in the form of grains of salt and gemstones. It may be a surprise though to learn that in fact most of the materials we encounter in our everyday life are crystalline, consisting of aggregates of many small crystals. The properties of these materials depend strongly on the internal arrangement of the individual crystals within them. With the advent of high energy X-ray sources it is possible now to look deep inside crystalline materials, mapping their microstructure in three dimensions, and in some cases following changes during processing and service conditions.

Come and celebrate the International Year of Crystallography and find out how crystals really can have healing powers, how defects can actually be useful, and how, when materials fail, knowing what doesn't happen can be more important than knowing what does...

Andy Godfrey leads a research group at Tsinghua on structural metals and advanced characterization methods. He is also the Beijing coordinator for the Danish-Chinese Center for Nanometals.

**Venue: Bridge Café - Wudaokou, Haidian District, Beijing**  
桥咖啡: 海淀区五道口  
Contact: [understandingsciencebeijing@gmail.com](mailto:understandingsciencebeijing@gmail.com)  
Free entrance – food & drinks at your own expense

**IOP Institute of Physics**

March 2014



Professor Paul Boyle (UK Economic and Social Research Council (ESRC) Chief Executive and Research Councils UK International Strategy Champion) talking about ‘Science and Government Policy’ in February 2014

## Beijing Local Section on CCTV2's 'Dialogue'

To mark the award of the 2013 UNESCO Kalinga Prize (sometimes called the 'Nobel Prize for Science Popularization'—previous winners include George Porter and David Attenborough) to Prof. Li Xiangyi, the founder of the China Science and Technology Museum, CCTV2's 'Dialogue' (对话) programme invited him to take part in an hour long programme. Several other guest were also invited to take part, including David Evans, who discussed how the UK approached science popularization, the outreach activities of the RSC Beijing Local Section, and demonstrated an oscillating reaction.



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弘扬社会主义核心价值观 富强 民主 文明 和谐 自由 平等 公正 法治 爱国 敬业 诚信 友善

### 凡人英雄

## 我是特警

张成文 采访

他叫王成，是北京市公安局特警支队的一名特警。他有着刚毅的面容和坚毅的眼神。在特警支队，他是一名普通的战士，也是一名英雄。他从事着高风险、高难度的工作，守护着首都的安宁。他热爱自己的职业，热爱自己的团队。他有着钢铁般的意志和无私的奉献精神。他用自己的实际行动诠释了什么是责任，什么是担当。他是我们学习的榜样，是我们心中的英雄。

### 美丽心灵

## 化学“魔法师”

张成文 采访

他叫王成，是北京科技大学的一位化学老师。他有着渊博的知识和精湛的技艺。他热爱化学，热爱教学。他善于将复杂的化学知识用通俗易懂的语言讲解给学生。他善于引导学生思考，激发学生的求知欲。他善于将化学知识与生活实际相结合，让学生感受到化学的魅力。他是我们心目中的“魔法师”，是我们心目中的偶像。

### 园丁之歌

## 神奇班主任

张成文 采访

他叫王成，是北京科技大学的一位班主任。他有着丰富的教育经验和无私的奉献精神。他热爱学生，热爱工作。他善于与学生沟通，了解学生的需求。他善于引导学生成长，培养学生的综合素质。他善于与家长合作，共同促进学生的进步。他是我们心目中的“园丁”，是我们心目中的楷模。

### 少年梦

## 晓晨爱飞翔

张成文 采访

他叫王成，是北京科技大学的一位少年。他有着对科学的热爱和对梦想的执着。他热爱学习，热爱探索。他善于思考，善于创新。他善于将所学知识运用到实践中，解决实际问题。他是我们心目中的“少年梦”，是我们心目中的希望。

## Professor Albus Dumbledore joins Beijing Local Section!

In November, the 'Beijing Daily'—which has a circulation of about 400,000—published a profile of Prof. David Evans, focusing on his outreach work. The journalist Ren Min began her article by saying that Harry Potter had Prof. Dumbledore to teach him magic, and now Chinese children have a new Dumbledore—“also with white hair and beard, but rather fatter”—to teach them the “magic of chemistry”, all made possible by funding from RSC.





# Royal Society of Chemistry Beijing Local Section

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