



**The Institute of Materials, Minerals and Mining**

**Schools  
Affiliate  
Scheme**

Issue 16

Spring Term 2004

**It can't possibly be 2004 already!!**

Hello again, hope you had a relaxing Christmas holiday, I have to say I was very glad of a couple of weeks rest without driving!

2004 is going to be a hectic year for the Education Team at the Institute, kicking off with our exhibit at the ASE Meeting in Reading. This went really well and we were the busiest we have ever been at one of these conferences. It was great to meet so many of you and put faces to names.

I have a totally bonkers schedule of talks coming up this term and am very much looking forward to meeting you and your students. You will see my diary in the middle of this newsletter where you will also find changes to the booking procedure for talks. I am already taking bookings for the Autumn Term so my best advise to you is get in early!

Other big things happening this term include the Schools Day and Materials Congress 2004. You and your colleagues are invited to attend our flagship conference in London in March. Delegate fees for teachers will be free and you can find out more information inside.

Also inside this issue details of two new resources for your school, both FREE OF CHARGE! The Non Ferrous Alliance have produced a CD Rom covering metals and another CD Rom is available from ISIS. Again more information inside.

As I always say, this is your Newsletter and your Schools Affiliate Scheme so we would love to hear from you! Please use the fax back on page 8 to let us know if you are interested in attending events or just if you have any comments about the scheme, presentations, newsletters or have any ideas for articles etc.

Finally a big thank you to those of you that contributed to the A-level Materials feasibility study. We have recently received a large sum of money to continue with the development of this course so watch this space.

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Doncaster Regional Office  
Education Team  
Danum House, South Parade  
Doncaster, DN1 2DY  
**Tel 01302 320486**  
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## ***Speeding ahead with a career in automotive Materials...***

Maria Taylor is 27 and studied for her BEng Materials Science and Engineering degree at Sheffield University .

She is now a Design Engineering for McLaren International where she works as part of a team responsible for the design and development of parts for McLaren's Formula One racing cars, in particular those made from composite materials. Her favourite projects involve those looking at crash structures. Ensuring that the car will perform as predicted in a crash situation can mean the difference between life and death.



Maria says that the most enjoyable parts of her job involve teamwork.

She and her colleagues have to deal with very fast design and production cycles and produce individual components. At the end of the day the results of her work can make the difference between success and failure, that is winning a race or breaking down!

## ***SCHOOLS DAY AT MATERIALS CONGRESS 2004***

Would you like the opportunity to:

- Hear about up-to-the-minute developments in the fields of materials, minerals and mining?
- Meet a wide variety of people working in the fields of materials, minerals and mining?
- Find out about careers in materials, minerals and mining?

If the answer to any of these is 'yes' then a visit to the *Schools Day at Materials Congress 2004* is for you!

Materials Congress is the highlight of the Institute's calendar for 2004 and is a three day conference bringing together all aspects of the materials, minerals and mining fields. The conference will be based at our head office, 1 Carlton House Terrace in central London but will also use other buildings on the Terrace including the Royal Society.

***Wednesday 31 March*** is Schools Day at Congress 2004 where you will have the opportunity to:

- Go along to presentations on all aspects of materials, including smart materials and packaging.
- Meet materials people at lunchtime.
- Get a taster of the sort of presentation I can bring into your school.

Conference fees for teachers attending on the schools day are ***free*** and you are invited to bring along your colleagues in the science or technology department and careers advisors!

If you would like to register an interest in attending and receive further information when it becomes available please return the fax back form on the back of this newsletter to Diane Talbot on 01302 380900.

## SCIENCE SMALL GRANTS SCHEME FOR SCHOOLS

### HOW WOULD YOU SPEND UP TO £2500 TO IMPROVE SCIENCE WITHIN YOUR SCHOOL CLUSTER?



SCOTTISH EXECUTIVE



A pioneering new grant scheme aims to boost science skills and knowledge in Scotland's schools. £270,000 of funding (over three years) will be used to support the transition of young people from primary to secondary school science. Grants ranging from a minimum of £500 to a maximum of £2,500 will be distributed on a competitive basis.

The Science Small Grants Scheme aims to improve childrens' attainment in science and stimulate their enthusiasm for science across the transition from primary to secondary school. Grants will be used to help foster links between primary and secondary schools, enabling primary teachers to gain awareness and experience of science teaching at secondary schools. For example, schools will be encouraged and supported to develop their innovative ideas in funding applications.

Schools may apply either collectively, with a single school as the point of contact or a single school may take the lead on behalf of their school cluster. Only one application may be submitted per school cluster.

#### **Projects will be judged by the following criteria:**

- Projects should promote partnership working within school cluster groups.
- Projects should clearly address some of the transition difficulties that can arise between Primary and Secondary.
- Preference may be given to innovative ideas for supporting school science education.
- Projects should demonstrate the potential or intention for sustainability beyond the year of the award.
- Proposals should describe how the project will be evaluated.

Application forms and all details are available from the science education 3-18 website [www.scienceeducation3-18.com](http://www.scienceeducation3-18.com) or by calling Susan Harvie at Careers Ccotland on 0141 429 1999

Applicants are actively encouraged to seek support for the development of their ideas and proposals from Briony Curtis, the Science Small Grants Scheme representative. Briony can also provide further details on the scheme and support for developing your ideas and proposals. Briony can be contact on 07976 630607 or e-mail [briony.curtis@bes8t.co.uk](mailto:briony.curtis@bes8t.co.uk).

## FREE RESIDENTIAL COURSE FOR TEACHERS

The Goldsmiths Company are supporting a number of residential courses for teachers during the summer term. As our resource this year is on Materials for a Sustainable Society I thought it might be worth mentioning the course which will be held at **Brunel University** between the **18th and 23rd of July**. The course will examine the background to sustainable development and ways in which it is being approached. The course draws on expert academics from and practitioners in geography, environmental science, planning and government and will include field visits to the pioneering BedZED zero energy housing and offices development in South London, and the Royal Geographical Society in London.

For more information about this and the other free courses running this summer please contact:

The Assistant Clerk, The Goldsmiths' Company,  
Goldsmiths' Hall, Foster Lane, London, EC2V 6BN.  
Telephone 020 7606 7010, fax 020 7606 1511 or look  
on the web-site [www.thegoldsmiths.co.uk](http://www.thegoldsmiths.co.uk)



THE GOLDSMITHS' COMPANY

## ***New Resource for 2004***

The new resource for members renewing their membership and joining the Schools Affiliate ***Scheme in 2004 is entitled 'Materials for a Sustainable Society'.***

The resource will consist of a booklet outlining key issues related to sustainable technology, such as recycling materials, the use of environmentally friendly manufacturing processes, alternative energy sources and materials for reducing energy consumption. Ideas on which class discussions may be based around these topics will also be provided.

The booklet will be supplemented by two posters, one depicting the use of hydrogen as an alternative fuel and other looking at steel as a sustainable resource.

The 2004 resource is currently in production and should be available very soon.

## **SCHOOL SUPPORT FROM THE ARMOURERS AND BRASIERERS**

As you may have read in a recent issue of Materials World the Armourers and Brasiers / CORUS Sixth Form Scholarships were awarded in December of 2003. This scholarship scheme is just one of a large number of initiatives set-up and supported by the Worshipful Company of Armourers and Brasiers. The Company is only small but is very keen to promote materials related careers to young people of all ages. Full details of their current initiatives can be found on the enclosed sheet. If you would like find out more about the Armourers and Brasiers and their work with schools then contact the Clerk, Commander Tim Sloane on 020 7374 4000.

## **2004 POLYMER STUDY TOURS**

Once again this year the highly successful Polymer Study Tours will be running at three venues around the UK. Over 1500 teachers have now benefited from attending one of these courses as have the young people they have taught. The aim of the courses is to bring teachers of science and technology up to date with advances in the polymer industry through a series of lectures, discussions, laboratory classes and industry visits.

The three day residential programmes all take place towards the end of the summer term and include accommodation, course fees, all food and refreshments. This is only possible through the generosity of the UK's polymer industry who sponsor the courses. The only charge is £50 fee to cover the cost of administration.

This summer the courses are to be held at:

Napier University (Edinburgh)	- 20 to 23 June
London Metropolitan University	- 27 to 30 June
Manchester Metropolitan University	- 30 June to 3 July

The London course is a new venture and replaces the event at Wiltshire College, Trowbridge.

The courses were initiated by the Worshipful Company of Horners, who are still one of the major sponsors. You can find out more information at their web-site [www.horners.org.uk](http://www.horners.org.uk). Alternatively you can contact June Durnin, Conferences and Events Team, ASE, College Lane, Hatfield, Hertfordshire, AL10 9AA, telephone 01707 283000 or e-mail [janedurnin@ase.org.uk](mailto:janedurnin@ase.org.uk)

## DIANE'S DIARY

So far bookings for this term indicate that it is going to be a bit hectic! At present I am planning to visit the following:

- 06/01 Smallpiece Trust course, Oxford University
- 08-10/01 ASE Conference, University of Reading
- 15/01 Olchfa School, Swansea
- 16/01 The Catholic High School, Chester
- 19/01 Chemistry Day, Techniquet, Cardiff
- 21/01 Physics teachers INSET, Leeds
- 22/01 Brownhills Technology College
- 26/01 Farringdon School, Sunderland
- 28/01 Sacred Heart School, Newcastle
- 29/01 Lutterworth Grammar School
- 02/02 IOP Yorkshire Branch Lecture, University of York
- 04/02 Bedford Home Educators
- 05/02 St Mary's Catholic High School, Manchester
- 11/02 Colfes School, London
- 12/02 The Judd School, Tonbridge
- 13/02 Hurstpierpoint College, Hassocks
- 25/02 D&T Teachers INSET, Eastleigh
- 4-5/03 UCAS Convention, Manchester
- 05/03 Ampleforth College, Physics Teachers Day
- 10/03 Broadlands School, Bristol
- 11/03 Eckington School, South Yorkshire
- 15/03 West Lakes Science Institute Science Week Event
- 16/03 In-Tech, Winchester Science Week Event
- 17/03 Liverpool Hope University Primary Science Fair
- 18/03 Holmes Chapel Comprehensive School, Crewe
- 19/03 Bradford College/WISE Materials Day (Science Week Event)
- 24/03 Oxford University Open Day
- 24/03 Talk to teachers at CIEC, University of York
- 30/03 to 01/04 Materials Congress, London
- 31/03 Schools Day at Congress

## New Booking Procedure

My presentations in schools have become far more popular than I could ever have imagined - thank you all for your warm welcome and positive feedback. However the popularity of the presentations and my increasing workload in other areas, such as the A-level, means that I am going to have to restrict the dates that I am available to visit. As you can see I am already extremely busy this term so I've put together a list of the remaining dates that I am available to visit during the spring and summer terms. They are as follows:

February:	19,
April:	19, 21, 22*, 26, 28
May:	19, 27
June:	2, 3, 9, 10
July:	1, 20, 21, 22

If you would like to book me on one of these dates please e-mail me, [diane.talbot@iom3.org](mailto:diane.talbot@iom3.org) and copy your message to [susan.longstaffe@iom3.org](mailto:susan.longstaffe@iom3.org) or telephone 01302 320486 and speak to either myself or Susan (she will be able to take a provisional booking for me to confirm at a later date).

\* only if in south West as I have to be in Cardiff first thing the next day

## FREE RESOURCE FROM THE NON-FERROUS ALLIANCE

At the ASE Meeting I was honoured to be able to chair a session launching the new resource from the Non-Ferrous Alliance (an organisation consisting of the trade associations representing the UK aluminium, copper, lead, nickel and zinc industries). The resource, which is free to teachers, brings alive the subject of metals, their history, extraction and uses.

The material is targeted at KS3 and KS4, but can also be used with KS2 and post-16 pupils. It has been designed to be extremely easy to navigate and is very well presented. Each metal (magnesium, aluminium, copper, nickel, titanium, zinc and lead) has its own chapter covering its discovery, history, extraction, processing and uses. There are test questions at the end of each chapter to test the understanding of the pupils.

The resource has been written by Ray Oliver, the Head of Chemistry at St Albans School for girls and he has extensive experience both as a teacher and writer of science education literature.

If you would like to receive your free copy of the resource then contact Richard Mahoney at the Aluminium Federation on 0121 456 6108, or e-mail [richard.mahoney@alfed.org](mailto:richard.mahoney@alfed.org).

# SALTERS' *Chemistry* Camps

The 2004 Salters' Chemistry Camps are just around the corner, so have your lab coats and safety specs at the ready!

Eight residential camps are run over the summer months at Universities throughout the UK. Each hosts fifty 15 year olds, prior to taking GCSE, from a wide range of backgrounds and schools. Activities include practical chemistry in the labs, site visits and fun lectures. Material Science activities are included in the programmes for the Camps held at The University of Bristol, The University of Wales, Swansea, The University of Birmingham, The University of Manchester and The University of York. The Salters' Chemistry Camps are supported by the Chemical Education Group.

## Camp Dates 2004

<b>St Andrews</b>	<b>15 – 18 June</b>
Bristol	29 June – 2 July
Birmingham	6 – 9 July
Sussex	6 – 9 July
Swansea	6 – 9 July
Manchester	3 – 6 August
Ulster	10 – 13 August
York	17 – 20 August

## Who is Eligible?

The Salters' Chemistry Camps are open to all secondary schools in the UK and Ireland and teachers can nominate ONE Year 10 student (S3 in Scotland, Year 11 in Northern Ireland and Year 3 in the Republic of Ireland) from their school. Fifty student places are available at each Camp and where possible 25 boys and 25 girls will be selected for each one. We are looking for students who are enthusiastic about chemistry, whether they have already decided to continue studying the subject post 16 or not.

## Cost

There will be a charge of £50 for each student attending a Camp and the student, or their school, will be expected to cover travel expenses.

The closing date for return of nomination forms is **SUNDAY 15 FEBRUARY 2004**

For further information and a nomination form please visit our website

**[www.chemistrycamps.co.uk](http://www.chemistrycamps.co.uk)**

## **NOVEMBER OPEN DAYS 2004**

Following the success of the pilot event in 2002 and the event last year we, alongside the UK Materials Departments are planning to run the Open Day programme again in November 2004. I realise that it is only January but appreciate that you often do your planning months in advance so if you would like to receive information regarding the dates of the Open Days this year please return the fax back at the back of this newsletter to Diane Talbot on 01302 380900 and I shall send you them as they become available.

# Bringing real science in to the classroom



Scientists and teachers launch a free resource for A level Physics

Teachers from around the country have been working alongside scientists to develop *Living in a Materials World* – a CD-ROM that is tailor-made to meet the requirements of A level Physics courses. And at a time when school budgets are under increasing pressure, the professionally produced resource is available free of charge, thanks to funding from EPSRC (the Engineering and Physical Sciences Research Council).

The scientists come from ISIS, a large experimental facility at CCLRC Rutherford Appleton Laboratory in Oxfordshire, which is used to study materials at a molecular scale. It has an international reputation for cutting-edge research in physics, earth science, chemistry, materials science, engineering, biology and archaeology.

Dr Christopher Frost from CCLRC says, ‘This project offers a fantastic opportunity for students who live too far away to come and visit us. The virtual tour means they can look around the particle accelerators and find out how they work, watch video interviews with some of the people who work here, and find out about our latest research. It’s a bonus for teachers because every section of the CD-ROM has been designed with all the A level course specifications in mind.’

The interactive CD-ROM is packed with detailed information, stunning images and animations and includes a glossary, a historical overview of the development of particle physics technology, web links and other sources of further information, questions, a curriculum audit and model answers contained in a separate Teacher’s section.

Bernard Taylor, winner of the Institute of Physics ‘Teacher of Physics’ Award 2002, says, “*Living in a Materials World* offers students and teachers a fascinating insight into cutting-edge research using the ISIS pulsed neutron source at the CCLRC Rutherford Appleton Laboratory. It provides a very useful resource with lots of interesting curriculum links. Every school should have one!”

It may be used on a PC or network and no site licence is required. Copies are available free on application to: **Dr Martyn Bull**, CCLRC ISIS Facility, Rutherford Appleton Laboratory, Chilton, Didcot, OX11 0QX Telephone 01235 445805 or e-mail [m.j.bull@rl.ac.uk](mailto:m.j.bull@rl.ac.uk)

## And now for something completely different...

Once again at the ASE meeting I took great delight in looking for and finding my favourite stand (other than ours of course) and that stand belongs to the **BIG BUG SHOW!** The Big Bug Show is a one man show run by Lee Gibbs who is totally passionate about insects and educating people about them. He is available to come into schools and give his show for the pupils and I can guarantee that they will love it (I have seen it and have to say its brilliant). The pupils have the opportunity to handle large bugs such as Madagascan Hissing Cockroaches (very cute), Giant Tanzanian Millipedes (tickle when the crawl over your hand) and Chilean Rose Tarantulas (absolutely gorgeous and affectionately known as Barbie and Rosie!). If they are really lucky they will also have a lesson in bug cuisine with the chance to cook and taste bugs!

If you would like to find out more about the Big Bug Show you can look at the web-site [www.thebigbugshow.com](http://www.thebigbugshow.com) or alternatively contact Lee Gibbs directly on **020 8302 7898** or **07977 149273** or e-mail [lee@thebigbugshow.com](mailto:lee@thebigbugshow.com)

## **FAX BACK**

Please photocopy your completed Fax Back and sent it to Diane Talbot on 01302 380900 by 01 March 2004. Thank you for your co-operation.

SAS Membership number: \_\_\_\_\_

School: \_\_\_\_\_

Name: \_\_\_\_\_

E-mail address: \_\_\_\_\_

Are your contact details correct? Yes / No

If no please give us the correct details below:

Name: \_\_\_\_\_

Position: \_\_\_\_\_

Contact number: \_\_\_\_\_

E-mail address: \_\_\_\_\_

I would like to register my interest in attending the School Event at Materials Congress on 31 March 2004. Please send more information when it becomes available.

I would like to register my interest in the 2004 November Open Day Programme. Please send more information when it becomes available. My preferred venue is circles below:

Birmingham / Cambridge / Imperial / Leeds / Liverpool / London Metropolitan / Loughborough / Manchester / Newcastle / Nottingham / Oxford / Queen Mary / Sheffield / Sheffield Hallam / Swansea.

Please use the space below for any comments you have on all aspects of the Schools Affiliate Scheme. What do you think of the resources, newsletter, presentations? Do you think the scheme offers good value for money?

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This newsletter is written and edited by Dr Diane Talbot, Education Co-ordinator.  
If you have any comments or articles please contact Diane on 01302 380913,

e-mail [Diane.Talbot@iom3.org](mailto:Diane.Talbot@iom3.org) or write to her at the Doncaster address on the front cover