
IOP | Institute of Physics
**Electron Microscopy and
Analysis Group**

NEWSLETTER

January 2012



Dinner at the Birmingham Botanical Gardens at the EMAG 2011 Conference

See <http://emag.iop.org> for further details

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Local Organisers for EMAG 2013 at the University of York

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Prof Pratibha Gai

Dr Roland Kröger

Dr Vlado Lazarov

Dr Peter O'Toole

Prof Steve Tear

Prof Jun Yuan

A LETTER FROM THE CHAIR

Dear friends and colleagues,

First of all may I start by wishing you all a happy and successful 2012. A major event for the UK microscopy community in the coming year is the EMC2012 conference at Manchester. The Royal Microscopical Society is taking the lead as the main UK organiser, but EMAG is delighted to be able to support the meeting by sponsoring the “Advances in EM Instrumentation and Methods” session. We look forward to meeting many of you there.

As usual, EMAG intends to organise a one-day meeting this year, given that it is the “off-year” between the biennial EMAG conferences. The title of the meeting will be “Quantitative Interpretation of EM Image and Diffraction Data”, and the meeting will be dedicated to Professor Mike Whelan to mark his 80th birthday (which was at the end of 2011). The date of the meeting has been tentatively set for 20 July 2012 and will be held in Oxford. Look out for the first announcement and call for papers to be sent shortly.

Many thanks to the many of you that attended the EMAG2011 conference at Birmingham. The feedback we have received has generally been very positive, and thanks to those of you that completed the survey. We are also grateful for the constructively critical comments we have received, which we will bear in mind for future meetings. Personally, I am always struck by the high level of science being presented and the vibrancy of the discussions. It reassures me that the UK continues to have a strong and vibrant EM community. A more detailed report will follow in this newsletter.

Planning is already underway for the EMAG2013 meeting to be held at the University of York. The dates for this meeting have already been set for 3-6 September 2013. We are delighted with the help and enthusiasm of the local organising committee, which comprises Pratibha Gai, Ed Boyes, Jun Yuan, Roland Kroeger, Peter O’Toole, Steve Tear and Vlado Lazarov. First announcements for this meeting will be circulated later this year.

Many of you may remember a one-day meeting held at the end of 2011 on the subject of developing a distributed facility for high-level EM in the UK. The outcome of the meeting was the suggestion of forming a working party to develop firm proposals to table to a further meeting. The formation of this working party was put on hold during the tendering process for the EPSRC National Facility for Aberration Corrected STEM. With that process having now been completed, and with SuperSTEM having been named as the operator of the facility, the SuperSTEM managing consortium is keen to restart the formation of the working party. EMAG will remain involved with the process, and will communicate developments with its members.

Finally, I would also like to remind members that the EMAG committee is also able to support student attendance at non-IOP conferences via the IOP Research Student Conference Fund. Information on applying for these bursaries can be found later in this newsletter.

I will finish there, but I do hope to see many of you at various meetings during the coming months.

With all best wishes,

Pete Nellist

CHANGES ON THE EMAG COMMITTEE

Several members of our committee retired at the AGM at EMAG 2011 after many years of faithful service, especially in the organisation of the EMAG conferences. Our thanks are therefore due to:

Dr Richard Baker (University of St Andrews)
Prof Steve Donnelly (University of Huddersfield)
Dr Gunther Möbus (University of Sheffield)
Dr Dogan Ozkaya (Johnson Matthey plc)

Committee elections were held at the AGM and the following new members were elected:

Dr Andy Brown (University of Leeds)
Dr Cate Ducati (University of Cambridge)
Dr Sarah Haigh (University of Manchester)
Mr Olivier Heyning (FEI, Eindhoven)
Dr ZiYou Li (University of Birmingham)

EMAG2011

The Electron Microscopy and Analysis Group of the UK Institute of Physics organises a biennial conference and trade exhibition. In 2011 this meeting was held during 6-9 September at The University of Birmingham. I must first take this opportunity of thanking Birmingham for hosting the conference, and the excellent support we have received from the local organisers. As a committee, we are delighted to see that enthusiasm for the EMAG conference series continues to be strong. We received more than 160 submitted abstracts, and 157 delegates attended the meeting.

The scientific programme organiser, Ian MacLaren, put together an exciting programme. Plenary lectures were presented by Professor Knut Urban, Dr

Frances Ross and Dr Richard Henderson. There were a further 10 invited speakers, from the UK, Continental Europe, Australia, USA and Japan. The quality of the contributed oral and poster presentations was also very high. EMAG is keen to encourage student participation, and a winner and two runner-up prizes were presented for the best oral and best poster presentation from a student.

We must also thank our manufacturer and trade colleagues for their support for the trade exhibition that, despite the current financial pressures, sold well. We had 25 companies or organisations exhibiting. The EMAG committee has long taken the view that we use conference income, including from the trade exhibition, particularly to support young researchers. Student presenters at the conference, who are also IOP members, received a discount on their registration fee to reduce it to just £100.

The local organisers at Birmingham (Yu Lung Chiu, Ziyou Li and Ian Jones) enthusiastically organised an exciting 1½ day Advanced School on Chemical Nanoanalysis which was appreciated by all those that attended. A conference dinner was held in the very pleasant surroundings of the Birmingham Botanical Gardens.

Finally I must thank the platinum sponsors for their support of the meeting. These were Gatan, Zeiss, FEI, JEOL and Hitachi. I must also thank the European Microscopy Society for their generous sponsorship and support for the travel costs of two invited speakers from Continental Europe.

EMAG2013

Hardly has the dust settled from EMAG2011 and we are thinking about the next conference. This has already been booked for the University of York from 3-6 September 2013. Please put this date in your diaries. In organising this conference we will be assisted by an enthusiastic team of local organisers from three departments but all associated with the York JEOL Nanocentre:

Prof Ed Boyes
Prof Pratibha Gai
Dr Roland Kröger
Dr Vlado Lazarov
Dr Peter O'Toole
Prof Steve Tear
Prof Jun Yuan

OFFICIAL OPENING FOR SUPERSTEM

On 11th January 2012, the new EPSRC National Facility for Aberration Corrected Scanning Transmission Electron Microscopy was officially launched at a meeting held at the Daresbury Science and Innovation Campus. Lectures on STEM and its applications were given by Prof Christian Colliex (CNRS, France), Dr Ondrej Krivanek (NION Inc., USA), Prof Sir Konstantin Novoselov (University of Manchester) and Dr Quentin Ramasse (SuperSTEM). The opening ceremony included talks by Prof Colin Whitehouse (STFC Daresbury Science and Innovation Campus), Andrew Miller MP (Chair of the Science and Technology Committee of the House of Commons) and Graham Evans MP (Weaver Vale). The opening ceremony was performed by Dr Andrew Bourne, Head of Physical Sciences at the EPSRC.



Photo of the official opening, left to right: Andrew Bourne (EPSRC), Andrew Miller MP, Prof. Rik Brydson, Graham Evans MP

For more details see: <http://www.superstem.org/news>

CALL FOR SUPERSTEM PROPOSALS

Proposals are invited for experiments requiring aberration corrected scanning transmission electron microscopy via the SuperSTEM consortium. Such experiments could either require the facilities present at the SuperSTEM facility at Daresbury, or the specialist capabilities of one of the other aberration-corrected STEMs at a consortium or partner site. For more details, contact Dr Quentin Ramasse or Prof Mervyn Shannon at SuperSTEM or one of the academic management team (Prof Rik Brydson, Dr Uschi Bangert, Prof Alan Craven, Dr Sarah Haigh, Dr Ian MacLaren, Prof Pete Nellist, Prof Gordon Tatlock).

For more details see: <http://www.superstem.org/>

FEI-EUROPEAN MICROSCOPY AWARD

Two quadrennial European Microscopy Awards are offered by FEI Company, one for the life sciences, the other for the physical/materials sciences and optics. The value of each prize is €5000. The winners of the award will be announced at the European Microscopy Congress in Manchester, September 16-21.

More information on the nomination, evaluation and procedures can be found at <http://www.euremicsoc.org/fei-ema.html>. Proposals should be received by normal postal mail at the address of the Secretary of the European Microscopy Society (EMS), before April 1st of 2012. E-mail applications will not be accepted.

ERNST RUSKA PRIZE 2013

for outstanding achievements in the field of electron microscopy.

The Deutsche Gesellschaft für Elektronenmikroskopie invites to propose candidates for the Ernst-Ruska-Prize. The prize is awarded for work carried out by younger scientists pioneering new capabilities of electron microscopy as a scientific technique through innovative instrumentation or novel methods of basic and general interest. Work carried out by pure application of existing techniques will not be considered. The eligible work should not date back more than 7 years. It must be published or it must be accepted for publication at the time of submission of the proposal.

The decision will be made by an independent committee. The Ernst-Ruska-Prize consists of a certificate, a financial award, as well as the honour of giving an Ernst-Ruska Distinguished Lecture at the Ceremony of Award. If a group of authors receives the award, they will be awarded jointly. The ceremony will take place at the Microscopy Conference 2013 in Regensburg, Germany, Aug. 25th-Aug. 30th, 2013.

Proposals including appraisal of the achievement, reprints or preprints, and short CV including list of publications of the authors should be received (on paper and CD) not later than November 30th, 2012, addressed to:

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NEW BUILDING AT CAMBRIDGE

Construction work started earlier this year on the new building for the Department of Materials Science & Metallurgy in West Cambridge. On the 4th September 2011 about 1350 cubic meters of concrete were poured to form the 2m deep raft foundation of the Electron Microscopy laboratory. The concrete has hardened through the autumn months and is already providing an excellent low-vibration performance. Delivery of the new building to the Department is scheduled for February 2013.



NEW (S)TEM AT GLASGOW

The new JEOL ARM200F cold FEG scanning transmission electron microscope was delivered in boxes in late November / early December and work has been proceeding at a lively pace on the installation and commissioning of this new instrument. As well as providing excellent performance for atomic resolution STEM imaging and spectroscopy, this machine is intended to provide unparalleled resolution for magnetic Lorentz imaging in field-free or low field conditions. It is expected to be fully operational later in the spring.

EMS MEMBERSHIP

EMAG members are reminded that they are all automatically members of the European Microscopy Society, at no cost to themselves. However, in order to receive information from the EMS, it is essential to send your e-mail address to the EMS secretary - this cannot be sent by the IOP due to the Data Protection Act. This is important, since almost all communications from the EMS are sent by e-mail, including information for voting for the next Executive Board.

Send your e-mail address (and preferably your other details, postal address, phone & fax numbers) to:

secr@eurmicsoc.org

and indicate whether you agree to include this information in the EMS Yearbook. If you do NOT wish to appear in the Yearbook, your e-mail address will be used

solely for the dispatch of information by the EMS secretary (Prof. Dr. D. Schryvers).

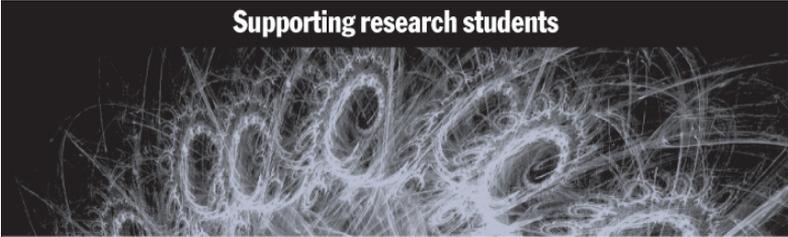
The EMS web page can be viewed at: <http://www.euremicsoc.org/>

EMAG members are also reminded of the availability of EMS Bursaries. For more details, see

<http://www.euremicsoc.org/scholarships.htm>

RESEARCH STUDENTS CONFERENCE FUND

If you are a student member and want help with going to a meeting or conference, please apply for an RSCF bursary, which may give you up to £250 towards your costs. We have several of these bursaries to give away each year.



Supporting research students

Research Student Conference Fund

Providing financial support to research student members, to attend international conferences and major national meetings.

Apply for up to £250 during the course of your PhD.

Applications are considered on a quarterly basis and should reach the Institute by: 1 March, 1 June, 1 September or 1 December

For further information see www.iop.org or contact supportandgrants@iop.org

IOP Institute of Physics

MEETING REPORTS

Electron Microscopy and Analysis Group Conference 2011

University of Birmingham

6-9 September 2011

Robert Beacham, University of Glasgow

In September of 2011 I had the opportunity to attend the Electron Microscopy and Analysis Group Conference in Birmingham. This meeting brought together electron microscopists from all over the world to discuss topics ranging from the development of both theoretical and experimental aberration corrected microscopy to the use of catalysts in the growth of nanoparticles. With two parallel sessions of talks as well as a wide range of posters and an impressive trade exhibition, this conference allowed me to hear about the enormous variety of research currently being done in the field of electron microscopy.

The conference opened with a plenary talk by Prof. K. Urban on the capabilities of current aberration corrected microscopes and how we reach and explore on the picometre scale. I found this particularly interesting for the opening talk as it gave a solid basis for those of us not using aberration corrected machines to better understand the speakers to follow, as well as impressing upon us the difficulties involved in probing materials on this scale. The presentation of my poster attracted more attention than I initially expected and enabled me to discuss my work with people outside of my immediate co-workers. This proved invaluable for me and my research through the feedback and suggestions I received. Overall I considered the conference to be a great success and look forward to 2013.

FUTURE MEETINGS OF INTEREST

EBSD 2012, March 26-28, 2012, NPL, London, UK

1-day meeting on "Quantification of TEM Image and Diffraction Data" and a celebration of Prof. Mike Whelan's 80th Birthday, July 20, 2012, Linacre College, Oxford, UK

M&M 2012, July 29 – August 2, 2012, Phoenix, Arizona, USA

Precession electron diffraction school, September 14-15, 2012, Manchester, UK

5th SuperSTEM School in aberration corrected analytical TEM, September 13-16, 2012, Manchester, UK

EMC2012, September 16-21, 2012, Manchester, UK

<http://www.emc2012.org.uk/>

EMAG2013, September 3-6, 2013, University of York, UK

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For conferences:

Email: conferences@iop.org

<http://www.iop.org/events/scientific/conferences/index.html>

Group matters: Science Support Officer

Email: groups@iop.org

EMS: European Microscopy Society

Email: secr@eurmicsoc.org

<http://www.eurmicsoc.org/index.html>

MRS: Materials Research Society, 9800 McKnight Road, Pittsburgh,
PA 15237, USA.

Tel: +1 412 779 3003, Fax: +1 412 779 8313

<http://www.mrs.org/meetings/>

MSA: Microscopy Society of America, 12100 Sunset Hills Rd., Suite 130,
Reston, VA 20190, USA.

Tel: +1 703 234 4115, Fax: +1 703 435 4390

<http://www.microscopy.org/>

RMS: Royal Microscopical Society, 37/38 St. Clements, Oxford, OX4 1AJ.

Tel: +44 1865 248 768, Fax: +44 1865 791 237

Email: meetings@rms.org.uk <http://www.rms.org.uk/events/>

This newsletter is also available on the web and in larger print sizes

The contents of this newsletter do not necessarily represent the views or policies of the Institute of Physics, except where explicitly stated.

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