

Institute *of* **Physics**

Electron Microscopy and Analysis Group

Newsletter

June 2002

ELECTRON MICROSCOPY AND ANALYSIS GROUP

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ELECTRON MICROSCOPY AND ANALYSIS GROUP

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EMAG COMMITTEE - 2001/2002 SESSION/ contd.

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ELECTRON MICROSCOPY AND ANALYSIS GROUP

Dear EMAG Member,

Since the December Newsletter there has been an enforced change of the committee membership. Dr Martin Strangwood has resigned due to increasing pressure of work – a increasingly common problem in both academia and industry. We thank Martin for his contributions on behalf of the committee and wish him well in future. This has left a gap in the committee membership which we propose to fill via the forthcoming elections onto the committee, as you will see elsewhere in this newsletter.

A number of meetings have taken place since December, which have involved the EMAG committee. Reports on these meetings appear later in the Newsletter.

The committee has also been involved in the planning of several future meetings the details of which you can read about in the newsletter. One imminent event in which EMAG is heavily involved is the **second SuperSTEM workshop** which forms a part of Microscience 2002 on July 2002 in London's ExCel centre – further details are given later in the Newsletter .

The first STEM objective lens aberration corrector has recently been installed on an existing STEM - SuperSTEM I in Cambridge and the first exciting results from this instrument will be presented at the meeting. Once thoroughly tested this machine will be moved to a purpose built building at Daresbury Laboratories in September 2002 and plans are already unfolding for the design of the second generation machine – SuperSTEM II. To find out the latest news, please attend the workshop if you can – otherwise see the SuperSTEM website <http://www.superstem.org.uk>

Further information on the group's activities are always available at the IoP website at the address: <http://www.iop.org/IOP/Groups/EM/>.

BURSARIES

Members are reminded that EMAG bursaries are available for research students and younger postdocs (usually under 30 years of age) who wish to attend relevant conferences either in the UK or abroad. Preference will be given to those who are presenting papers and have shown that they have tried to obtain part of their funding from other suitable sources. In general, only one bursary per year can be awarded to each person. A completed application form (see the back of this *Newsletter*) as well as a short reference from a research supervisor confirming eligibility and suitability should be sent to the Chairman of the Bursary Sub-Committee, Dr Paul Brown. Additionally each successful applicant must submit a short report on the meeting they attended to the Chairman of the Bursary Sub-Committee.

A further point to note is that this year there are specific funds allocated for attendance at international conferences such as ICEM.

Dr Rik Brydson
EMAG Secretary/Treasurer

ELECTRON MICROSCOPY AND ANALYSIS GROUP

COMMITTEE ELECTIONS

Stephen McVitie retires from the EMAG Committee in September 2000. He deserves our heartfelt thanks for the extremely valuable contribution he has made to the successful running of the Group during the past seven years on the committee. He also deserves a medal for telling some of the jokes in his EMAG 2001 conference dinner speech.

Together with Mark Strangwood's resignation, this means that there will be two vacancies for ordinary committee members in September. In order to try and maintain a balance between UK geographic representation on EMAG, the current committee has nominated the following for election:

Dave McComb
Tiesheng Rong

University of Glasgow
University of Birmingham

Stephen McVitie and Rik Brydson step down this year as Chairman and Honorary Secretary / Treasurer, respectively. The committee have nominated Rik Brydson as Chairman and Paul Brown as the Honorary Secretary / Treasurer. On page 18 of this *Newsletter* is a form on which other nominations can be made. If further nominations are received, there will be a postal ballot of all members in August. If not, those persons nominated by the committee will be declared elected at the AGM.

The deadline for nominations to the Committee is **31 July 2002**.

The AGM will be held just before lunch at IoP Headquarters on Wednesday, 18 September 2002, at the one-day meeting on the "*Microscopy of Biomedical Materials and Biocompatible Thin Films*". An agenda and minutes of the last AGM are included on following pages.

ELECTRON MICROSCOPY AND ANALYSIS GROUP

IMPORTANT INFORMATION – Please respond !!

European Microscopy Society (EMS) News

Dear EMAG member

May I remind you that all members of EMAG are 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. This announcement was sent with the January newsletter, however only around 20% of EMAG members replied.

If you did not respond in January, please send your e-mail address (and preferably your other details, postal address, phone & fax numbers) to

wisse@cyto.vub.ac.be and to hawkes@cemes.fr

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 despatch of information by the EMS secretary (Prof Dr E. Wisse, Free University of Brussels).

Stephen McVitie
Chairman of EMAG

ELECTRON MICROSCOPY AND ANALYSIS GROUP

2002 ANNUAL GENERAL MEETING

The Annual General Meeting of the Group will be held during the EMAG one-day meeting on "*Microscopy of Biomedical Materials and Biocompatible Thin Films*". It will take place at IoP Headquarters (76 Portland Place) on Wednesday, 18 September 2002, at 12.15 pm.

The proposed Agenda is as follows:-

1. Minutes of the 2001 AGM (5 September 2001)
2. Matters arising from the Minutes
3. Honorary Secretary's report for the year 2001/2002
4. Financial Report
5. Results of the election of members to the EMAG Committee
6. Discussion on membership/subscription to the European Microscopy Society
7. Report on SuperSTEM
8. Any Other Business

Minutes of the AGM held on 5 September 2001 at the EMAG conference, University of Dundee

1. Minutes of the 2000 AGM (6 September 2000)

The minutes were signed by the Chairman as a true record of the meeting.

2. Matters arising from the minutes

There were no matters arising from the minutes.

3. Honorary Secretary's Report from 2000/01

Since the last AGM, the Group has organised, or contributed to, the following meetings :-

CMMP 2000 (19-21 December 2000 – University of Bristol)

Dr Quanmin Guo (Birmingham) organised the symposium on "Nanoscale Physics and Technology" - this was the sixth symposium in this series and was once again increasingly successful with 42 abstracts submitted in total. There were 2 invited talks (Profs Fitzmaurice and Palmer), 3 contributed talks and a total of 44 posters in the session "Artificially Structured Materials" to which EMAG contributed a poster prize.

Microscopy of Semiconducting Materials XII (25-29 March 2001 - Oxford)

The latest meeting in this popular series was organised by Tony Cullis. Over 180 delegates attended the conference.

Focused Ion Beam 2001 (30 March 2001 - Oxford)

This new one day meeting, co-sponsored with the RMS, was organised by Dr Beverley Inkson and was designed to follow on from MSM XII. Over 80 delegates attended the meeting and it is envisaged that this will be repeated in forthcoming years.

European Union of Geosciences XI (8-12 April 2001 - Strasbourg)

A standalone session on "High spatial resolution microanalysis in the TEM" was organised by Dr Rik Brydson with sponsorship from both EMAG and the RMS. There were 10 contributed talks and a maximum of approximately 50 attendees.

Developments in FEG/TEM (3 July 2000 - Oxford)

This meeting was co-sponsored by the RMS and co-organised by John Hutchison and Paul Midgley. Around 80 attendees were present at the meeting.

Energy filtered TEM (4 July 2000 - Oxford)

This meeting was co-sponsored by the RMS and co-organised by Crispin Hetherington and Laurence Tetley. Around 80 attendees were present at the meeting.

Warm thanks are due to all who have helped with the organisation of these meetings.

Future EMAG plans include :

- (i) A one day meeting on the "Microscopy of Ceramics" at the IOP in London on November 21 2001.
- (ii) A further symposium on "Nanoscale Physics and Technology" in CMMP 2001/2002 which is scheduled for April 2002.
- (iii) Contribution to a session in RMS Microscience 2002 conference, 9-11 July 2002.

4. Honorary Treasurer's Report

At the end of October 2000 the balance in the EMAG group account was **£14,546.63** in credit.

A sum of **£2100** was used to sponsor invited speakers at the conference sessions outlined in section 3.

During the period September 2000 to August 2001, bursaries to a total value of £1950 were provided for 7 young people from a range of institutions to attend major overseas meetings.

A further £4420 has been committed to 34 young scientists in the form of bursaries to attend the EMAG 2001 conference.

The balance of the Group Account after these and general outgoings is **£10,161.95**. (end September 2001) Future bursary support for overseas conferences will depend somewhat on the balance remaining from the trade exhibition at EMAG 2001 which will be known shortly.

Possible outgoings which are anticipated over the next two academic years include bursaries for ICEM 2000, MSM 2003 and EMAG 2003, so the Group Account funds will be employed usefully.

5. Results of the Election of Members to the EMAG Committee

Retired from the Committee : Dr P Midgley, Prof Mark Rainforth.

Both of the above committee members were very active in committee business and the Chairman would like to thank them for their efforts on behalf of the committee.

Resigned from Committee due to work pressures: Dr P. Spellward

Nominated by the Committee as Ordinary Members : Dr C Mullen, Dr A. Burrows and Dr A. Bleloch. There being as many nominations as places available, all were declared elected.

6. Report on SuperSTEM

The Chairman outlined that the SuperSTEM project for a sub-Angstrom analytical STEM, which had been initiated by Prof LM Brown under the auspices of the EMAG Committee, had successfully gained funding from the EPSRC via the North West Science Review. The Chairman congratulated Prof Brown and all involved for providing an exciting focus for future developments in EM. Both EMAG and, to a lesser extent, the RMS had contributed to the substantial travel costs involved in arranging the bid. EMAG interest was retained in the SuperSTEM Management Group and the first SuperSTEM workshop had been held prior to the EMAG 2001 conference and had attracted over 40 attendees. A full report would be provided in the next newsletter.

7. Discussion on membership/subscription to the European Microscopy Society

The Chairman outlined the history and proposed structure of European Microscopy Society. He reported that the IOP had offered to pay the en-bloc membership fee for all EMAG members. It was noted that IOP already had a similar agreement for some other European societies. With regard to EMS constitutional issues it was noted that only one national society could be present at the EMS council with an entitlement of two votes as long as the society had more than 300 members. In the case of the UK the RMS and EMAG are the two national societies and the one with the largest number of members would be eligible to vote. It was not clear how many of the RMS members have elected to join EMS through their partial en-bloc membership route. However acceptance of the IOP en-bloc payment may make EMAG the UK society with the largest EMS membership and so be entitled to the votes at EMS Council. Although the situation regarding a single UK society being representatives at EMS council was unclear the chairman had spoken to the EMS president and was assured that the constitution was still in a state of flux and may be changed in the future. The proposal for joining the EMS en-bloc was proposed and seconded and the motion carried.

8. Any Other Business

Following from the discussion of EMS (which intends to perform all mailings electronically), a discussion was raised concerning the possibility of emailing the EMAG newsletter and further correspondence rather than conventional postal mailouts. It was agreed to raise this matter in the next newsletter.

The meeting ended at 18.00.

Dr. Rik Brydson
EMAG Hon. Secretary / Treasurer

September 2001

ELECTRON MICROSCOPY AND ANALYSIS GROUP

REPORTS FROM MEETINGS

Report on “Electronic Structure and Spectroscopy” - EMAG sponsored session at IoP Congress, Brighton, 8th April 2002.

CMD19/CMMP2002 brought together the Condensed Matter Division (CMD) of the European Physical Society and the Condensed Matter and Materials Physics Division (CMMP) of the IOP in a 4 day meeting at the IOP Congress in Brighton in April. The new Electronic and Optical Properties of Solids section of CMD help to organise five of the mini-symposia and EMAG sponsored the one on Electronic Structure and Spectroscopy.

An audience of about 50 heard invited papers by David McComb and Frank de Groot followed by three contributed talks. The oral session was followed by a poster session with twelve contributions. The topics covered both experimental and theoretical approaches to the topic in line with the aim of the new section which is to develop our understanding of the ground and excited electronic states of condensed matter by both experimental and theoretical approaches. Anyone interested in participating in the activities of the new section should e-mail Professor John Beeby (zjb@leicester.ac.uk).

*Alan Craven, University of Glasgow
Session Organizer*

IoP Congress

At the beginning of April, several thousand Physicists, representing all species of the Condensed Matter genus, descended on Brighton for the 19th CMMP Annual Meeting which, this year, was held in conjunction with the IoP Annual Congress and the European Physical Society Annual Meeting.

The lectures, held in the genteel splendour of the Hilton Brighton Metropole Hotel, covered every aspect of Condensed Matter Physics from ab initio calculations to Zn doped InP and ranged in scale from quantum dots to the Earth's core.

Many exciting new developments in microscopy were discussed, including, HR TEM to the 0.1nm resolution level, 3D images by Near Node Photoelectron Holography, atomic resolution chemical analysis in the Field Ion Microscope (Atom Probe Microscope) and Scanning Near Field Optical Microscopy.

Strategic issues were also covered. Key topics of the address by the incoming President of the IoP, Sir Peter Williams, including improving the quality of Physics teaching in schools and maintaining high numbers of applicants for University places.

The poster displays encompassed a dazzling array of subject areas and the intent conversation around them demonstrated the healthy state of European Condensed Matter Physics today.

*Tom Woodcock
sponsored by an EMAG Bursary*

Report on the Tribology of Information Storage Device (TISD) conference held in Sendai, Japan, the 3rd, 4th and 5th of December 2001.

The TISD conference held this year in Japan was the third in the series; the first was held in 1997 in London, England and the second in 1999 in San José, California, to which I also had the opportunity to attend. The first conference attracted about 90 academic and industrial contributors, the second twice that number; about 80 attended to the 2001 edition. The TISD'01 conference covered all aspects of information storage system tribology, ranging from academic and industrial research to manufacturing and end-usage issues.

My attendance to the previous edition of the conference in 1999 had been very fruitful. It gave me the chance to educate myself in a unique, intensive and interactive way, whilst having the latest perspective on the fundamental and technological development of what constitutes the core of my research. Hence, I could expect the 2001 edition to be an even better occasion, since it was taking place a few months before the end of my PhD, giving me an exceptional opportunity to meet potential employers, whilst presenting the fruit of my work then near completion. I had the chance to present two papers, one orally, another as a poster. Both dealt with Chromium oxide coating applied to a linear tape system (Advanced Digital Recording or ADR™ system developed by OnStream, company sponsoring my PhD). OnStream had prepared the poster, whilst I had prepared the oral presentation. This permitted to give a twofold perspective on the matter, academic and industrial. The poster presentation came first, allowing me to introduce the topic individually and in complete interactivity. Most questions were asked by people whose research interest either directly regarded recording tape systems, or alternative forms of coatings, willing to broaden their research domain. The oral presentation took place the third and last day of the conference, early in the morning, therefore in front of an alert and almost complete audience. Questions and comments concerned the advantage of the coating material (CrO_x) with respect to diamond-like carbon (DLC), more commonly used, the coating thickness used; comprehension questions were also asked. Following the presentation, other similar comments were exchanged. The theme of both the poster and the oral presentation, coatings applied to magnetic recording systems, were, together with lubrication, the most broached subjects, which seem to concern most tribologists involved with data storage systems. HDD systems and DLC coatings were however by far most common. In such context, the work I have presented will have drawn some attention on a kind of coating rarely used in that domain, however it surpasses DLC when applied to magnetic tape heads. This is due to the different nature of contact at the head/media interface (continuous rather than intermittent) with respect to HDD.

Most of the experimental methods used in my research work are widely used by the participants. Examples are (most frequently named first): atomic force microscopy (AFM), scanning electron microscopy (SEM), optical microscopy (OM), Auger electron microscopy (AES), X-photoelectron spectroscopy (XPS), secondary ion mass spectroscopy (SIMS)... Other instruments I do not have access to were mentioned, such as: Fourier-transform infrared (FTIR) spectroscopy, transmission electron microscopy (TEM), X-ray diffraction (XRD).

I find it quite instructive to see the use, however standard it may be in principle, made by these different laboratories of these instruments, particularly for what concerns the interpretation and presentation of the results. I also noticed that most users when asked specific questions concerning the technique they use, show a rather restricted knowledge. That should encourage a better cooperation between all users.

My main interests are magnetic tape and head wear. In that respect, I found it encouraging for the tape recording industry to see key companies such as Sony so actively involved in the field. The research work they undertake, as I also noticed two years ago, is impressive: their unique and innovating approach can be very suggestive to other scientists. I also found the presentations concerning base materials beneficial, lubricants (covering, robustness...), coatings (either already applied or in development)... which allowed me to update and broaden my own knowledge. This information is particularly useful to the preparation of my PhD thesis. Some presentations debated about research matter too recent to be applied commercially such as a method for tape tracking securing the tape edge (with a tape edge wear issue still to be solved). That latter matter and the related tape edge wear evoked several times, as well as the relationship between the tape smoothness and the resulting increase in friction / stiction are amongst the aspects of the magnetic tape tribology that did not up to now draw my attention and that I will consider with a new interest.

The conference allowed me to establish several contacts. In the first place, with the participants involved at various levels in the organisation. I could thus exchange some viewpoints as well as publications that will be beneficial to my work. Exchange of business card, during the poster session or later, will open up I hope future exchanges and collaborations.

The outcome of that conference was in conclusion extremely positive, for my present research work, but also more generally for my research group, very well represented during the conference and my sponsoring company. As for what concerns my career, although I did not have the chance to establish direct contact with a potential employer, I was able to get in touch with a few laboratories where I could possibly find a position in the future.

***Erwan Sourty, Aston University
sponsored by EMAG bursary***

2001 Joint International Meeting: The 200th Meeting of the Electrochemical Society and The 52nd Meeting of the International Society of Electrochemistry' – San Francisco, September 2nd - 7, 2001

The '2001 Joint International Meeting' was a very useful conference held over a 5 day period in the city of San Francisco, CA. It had a diverse subject area consisting of all aspects of electrochemistry- from aqueous to solid state. My particular interests include the linking of electrochemical properties (especially impedance spectroscopy) to microstructure particularly that derived by electron optical based techniques.

The subject of Impedance Spectroscopy was not significantly presented in the poster sessions and talks, except in the short course presented by Dr Mark E Orazem. This turned out to be very interesting as the course explained, with good examples, the various techniques of data manipulation and error analysis and control.

Networking opportunities were taken frequently to discuss many aspects of IS measurement and interpretation techniques, and especially in regards to electrode preparation and effects. Discussions with colleagues from the University of Maine and the Max-Planck Institute proved to be quite fruitful as they had different perspectives on this subject.

I would like to take this opportunity to thank EMAG for their financial support for this conference.

***Mohammed Ramzan, University of Leeds
sponsored by EMAG bursary***

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FORTHCOMING EMAG RELATED MEETINGS

FEGTEM IV

1 July 2002

Oxford

Following the pattern of previous events, the meeting will cover both novel instrumentation developments and applications in the life sciences and physical sciences. There will be two keynote speakers: Dr Steven Fuller on CryoEM and Prof Henry Zandbergen on high energy resolution EELS on a FEGTEM. The bulk of the programme will be devoted to contributed papers – titles and abstracts should be sent to john.hutchison@materials.ox.ac.uk or crispin.hetherington@materials.ox.ac.uk.

Contact <http://www.rms.org.uk> for registration and

<http://www-em.materials.ox.ac.uk/events/fegtem.html> for information.

Organizer Crispin Hetherington, John Hutchison and RMS

MicroScience 2002

9th – 11th July 2002

ExCel Exhibition Centre, London Docklands, U.K.

The traditional RMS MICRO conference has been given a new name, a new venue, an increased exhibition area and a substantially revamped scientific programme consisting of 6 sessions per day with Plenary and Tutorial speakers combined with both “wet” and “dry” workshops.

Themes of interest to EMAG members include:

10th July

Tomography (Paul Mummery, Manchester)

Digital Imaging (Patrick Echlin)

Image Quantification and Analysis (Patrick Echlin)

Low Voltage SEM (Patrick Echlin)

Scanning Probe Microscopy (Alistair Smith, Leeds)

11th July

Focussed Ion Beams (Beverley Inkson, Oxford)

Energy Filtered Imaging (Rik Brydson, Leeds)

SuperSTEM Second User Workshop (EMAG/ SuperSTEM)

Variable Pressure SEM (Patrick Echlin, RMS)

EBSD (Val Randle, Swansea)

Further details are available from the RMS or see website

<http://www.microscience2002.org.uk>

EMAG One Day Meeting

Microscopy of Biomedical Materials and Biocompatible Thin Films

(plus EMAG AGM)

Wednesday 18 September 2002

The Institute of Physics, 76 Portland Place, London W1N 3DH

There is increasing interest in the microscopy of biomaterials. In response to innovative developments in processing methods and the design of implant materials, there is continued need to advance techniques for the microanalytical characterisation of materials intended for total or partial implant into the body. Accordingly, the aim of this meeting is to bring together research workers with an interest in the fine scale assessment of biomedical materials and biocompatible thin films, and of biological cell / engineering template interactions in particular. Developments of environmental SEM techniques will be discussed alongside issues related

ELECTRON MICROSCOPY AND ANALYSIS GROUP

FORTHCOMING EMAG RELATED MEETINGS/contd..

to fluorescent / confocal microscopy, combined with problems associated with TEM based techniques for the chemical microanalysis of implant materials.

Invited speakers and topics suggested for presentation:

Looking at Apatites

Serena Best (University of Cambridge, UK)

The Characterisation of Biomedical Polymers

Alan Brain (Smith and Nephew, UK)

Examination of bone analogues

Jan Czernuszka (University of Oxford, UK)

Microscopical investigations of biological responses to orthopaedic materials

Colin Scotchford (University of Nottingham, UK)

Abstract Submission

Both oral and poster contributions are invited from the above areas of interest. The abstracts (200 – 250 words in length) should be submitted electronically by no later than **Friday 2 August 2002** by using one of the following methods:

- *WWW:** full online submission of your personal details and abstract text is available via the conference website at <http://www.iop.org/IOP/Confs/BMed>
This method is the preferred option and offers the highest degree of flexibility and security.
- *Email:** instructions and an abstract template can be obtained by sending a blank email to confs@iopublishing.com with 'BMed instructions' as the subject.

Conference Co-ordinator: Dawn Stewart, Conferences Department, Institute of Physics.
Email dawn.stewart@iop.org

The Institute of Physics, 76 Portland Place, London W1N 3DH. Telephone +44 (0)20 7470 4800,
Fax: + 44(0)20 470 4900 Email registrations@iop.org, www: <http://www.iop.org>

ELECTRON MICROSCOPY AND ANALYSIS GROUP

FUTURE MEETINGS OF INTEREST

Institute of Physics meetings and meetings which are closely connected with EMAG (via sponsorship or organisation) are in bold type.

2002

12-15 June
Scandem 2002
Tampere, Finland
<http://www.scandem2002.tut.fi>

1 July
FEGTEM
Oxford
RMS/EMAG

9 – 11 July
MicroScience 2002
ExCel Exhibition Centre, London Docklands, U.K.
RMS

4-9 August
Microscopy and Microanalysis 2002
Quebec City, Canada
<http://www.msa.microscopy.com>

1 - 6 September
International Congress of Electron Microscopy ICEMXV 2002
Durban, South Africa
<http://www.icem15.com>

18 September
**EMAG one day meeting on Biomedical Materials and Biocompatible Thin Films
plus EMAG AGM**
IoP London

2003

6-9 April
**CMMP 2003 – EMAG sponsored Nanoscale Physics and Technology
Symposium**
Queen's University, Belfast.
IoP

3-7 August
Microscopy and Microanalysis 2003
San Antonio, Texas USA
<http://www.msa.microscopy.com>

2 September
EMAG Advanced School
Oxford, UK
IoP

3-5 September
EMAG 2003

ELECTRON MICROSCOPY AND ANALYSIS GROUP

FUTURE MEETINGS OF INTEREST /contd..

Contact Points

IoP: Institute of Physics, Conference Dept., 76 Portland Place, London, W1N 4AA.
Tel: +44 171 470 4800, Fax: +44 171 470 4900
Email: conferences@iop.org
<http://www.iop.org/IOP/Confs/>

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, 4 Barlows Landing Road, Suite 8, Pocasset,
MA 02559, USA.
Tel: +1 508 563 1155, Fax: +1 508 563 1211
<http://www.MSA.microscopy.com/>

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/>

ELECTRON MICROSCOPY AND ANALYSIS GROUP

NOMINATIONS for ELECTION to the EMAG COMMITTEE

In 2002 the Chairman, Honorary Secretary and two Ordinary Members of the Committee retire according to rule. You are therefore invited to nominate candidates for the Chairman, Honorary Secretary and two Committee Members. Both the Proposer and Secunder, who must be members of the Group, should complete the relevant sections of this form and the approval of the Nominee, who must be a member (or a Subscriber) of the Institute, should be signified by his/her signature. No person may propose or second more than one Nomination for any particular post.

Nominations should be sent directly to the Honorary Secretary to arrive before the deadline of 31st July 2002. The Group Committee may make further Nominations before the postal ballot forms are circulated in August.

COMMITTEE POST: _____

Nominee : Name _____ (Signature _____)
IoP Membership Grade _____
Address _____

Proposer: Name _____ (Signature _____)
IoP Membership Grade _____
Address _____

Secunder: Name _____ (Signature _____)
IoP Membership Grade _____
Address _____

When completed, this form should be sent to:

Dr Rik Brydson,
The Honorary Secretary - EMAG
c/o Department of Materials,
The University of Leeds,
Leeds LS2 9JT

EMAG BURSARY APPLICATION FORM

PERSONAL DETAILS			
Name		Email	
Address			
Title		Age	
IoP/EMAG Member IoP Number:	Yes	No	Applying for Membership
Current Status	FT Student	Postdoc	Other - specify

CONFERENCE DETAILS		
Name of Meeting		
Date of Meeting		
Place of Meeting		
Title of Paper/Poster		
Has paper been accepted for presentation?	Yes	Don't know yet

SHORT COURSE DETAILS	
Title of Course	
Date of Course	
Place of Course	

FINANCIAL DETAILS		
Estimated Expenditure	Registration Fee	
	Travel Costs	
	Accommodation	
	Subsistence	
	Total	£

Have you been promised a contribution towards your funding from any other sources?	Yes / No
If so, please specify the source and the amount they are prepared to contribute	

Have you received an EMAG bursary within the last 12 months?	Yes / No
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SIGNATURE		DATE	
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to : Dr. PD Brown, School of Mechanical, Materials, Manufacturing Engineering and Management, University of Nottingham, Nottingham NG7 2RD.