



focus on
**Microscopy
&
Microtechniques**

European Microscopy Congress 2012

Light and electron microscopy across the life and physical sciences will take centre stage in Manchester from 16th – 21st September 2012.

The 15th European Microscopy Congress, emc2012, will be Europe's largest ever event dedicated to microscopy and imaging. It includes an international conference comprising over 30 sessions within four symposia, an exhibition with over 100 companies, plus a programme of workshops, training opportunities, and a busy social programme. The First Call for Papers has been made, and the deadline for abstract submission is 16th March.

The event is being organised by the Royal Microscopical Society (RMS) in co-operation with the European Microscopy Society, under the auspices of the International Federation of Societies for Microscopy. The RMS has considerable experience of large events, mainly through hosting of the MICROSCIENCE conference and exhibition series. It will combine this experience with the experiences of previous organisers of EMC events.

"Our aim is to take all that is good from the MICROSCIENCE series, and introduce proven features from past European congresses," said Allison Winton, the RMS Event Director. "We hope that this will make emc2012 a memorable experience for all who attend – be they a speaker, delegate or day-visitor."



Manchester Central is the venue for Europe's largest event dedicated to microscopy.

Plenary speakers

The centerpiece of the event is the International Conference, the tone of which will be set by the Plenary Speakers. They include Professor Daniel Shechtman who was awarded the 2011 Nobel Prize for Chemistry for his discovery of 'quasicrystals'.

Dr Debbie Stokes, the emc2012 Conference Chair, said: "Amid the excitement of the Nobel Prize announcement, Professor Shechtman still found time to accept our invitation. He is going to have an exceptionally busy year, so we are delighted and honoured that he has chosen to speak at our event and highlight the importance of microscopy at the frontiers of scientific research."

Professor Shechtman is one of the seven Plenary Speakers. The full list is:

Dr Christian Colliex, CNRS Research Director at the Electron Microscopy Group at the Solid State Physics Laboratory in Orsay, France. His main fields of interest are the development of new instrumentation and methodologies for local analysis in condensed matter, and they have been used to investigate the structural, chemical, electronic and optical properties of isolated nanostructures, nano-objects and defects.

Professor Peter Dobson, Director of Oxford University's Begbroke Science Park, and Professor at Queen's College Oxford, UK. Professor Dobson's research interests are very broad, covering most aspects of nanotechnology, and embracing biotechnology, environmental technology, energy, and materials science - especially the applications to medicine.

Professor Andreas Engel, Director of the Department of Neurophysiology and Pathophysiology at the University Medical Center Hamburg-Eppendorf, Germany. The central focus of Professor Engel's research is the dynamics of neuronal populations and, specifically, temporal correlations between different neurons leading to the formation of coherent cell assemblies.

Professor Scott Fraser, Professor of Biology, and Director of the Biological Imaging Centre at the Beckman Institute at the California Institute of Technology, USA. Professor Fraser has a long-standing interest in the imaging and molecular analysis of intact biological systems, and has been active in developing new technologies for novel assays.

Professor Jeff Lichtman, Professor of Molecular and Cellular Biology at Harvard, USA. His interests revolve around the question of how mammalian brain circuits are physically altered by experiences, especially in early life. Recently his efforts have focused on developing new electron microscopy methods to map the entire wiring diagram of the developing and adult brain.

Professor Daniel Shechtman, Philip Tobias Professor of Materials Science at the Technion – Israel Institute of Technology. His study of rapidly solidified aluminum transition metal alloys led to the discovery of the Icosahedral Phase, which opened the new field of quasicrystals. For this work he is the 2011 Chemistry Nobel Prize Laureate.

Professor Tony Wilson, Professor of Engineering Science at the University of Oxford, UK, has been pursuing research into microscopy, imaging and applied optics for over twenty years. His interests are in the theory and implementation of scanning optical microscopes and, in particular, the development of confocal microscopes.

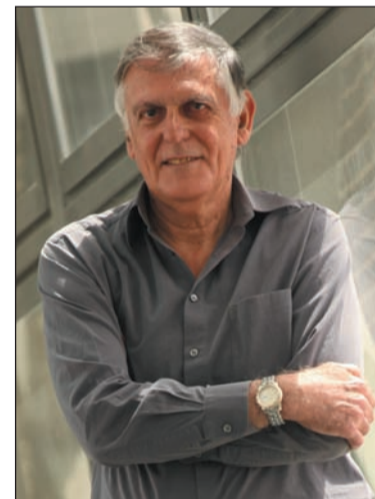
Dr Debbie Stokes, the emc2012 Conference Chair, said: "The plenary speakers have outstanding reputations and will, without doubt, provide inspiration and enthusiasm each day. Between them, they vividly encapsulate the development and application of cutting-edge microscopy tools and techniques to nano- and bio-technology and the physical and life sciences, and I am delighted that these superb speakers will share their knowledge and experience with us at emc2012."

Programme of symposia

The quality and wide-reaching expertise of the Plenary Speakers is also reflected in the Scientific Programme. It offers something for everyone with an active interest in microscopy.

"The breadth of the scientific programme – which embraces light and electron microscopy and spectroscopy across both the life and physical sciences, along with scanning probe and flow cytometry techniques – provides an unparalleled opportunity for delegates," said Dr Debbie Stokes, the emc2012 Conference Chair.

"Not only will they be able to immerse themselves in their own area of interest, but they will also be exposed to a range of new techniques and tools that might benefit their current work, or that could feature in their careers in the future. And this opportunity to broaden ones knowledge extends beyond the conference rooms to the poster presentations which are another important component of the event."



Professor Daniel Shechtman is a Plenary Speaker at emc2012. He is the 2011 Nobel Chemistry Prize Laureate.



The exhibition at emc2012 will be home to 100 companies sharing more than 1500m² of stand space.

Poster presentation

The 'poster village' is sponsored by International LabMate, and will occupy a prominent position within the main hall. It is sure to be a busy place, with regular scheduled viewing sessions throughout the five days of the conference.

"Posters are such a sociable way to increase your own knowledge and understanding," added Dr Stokes. "The material presented within posters ranges from early-career work through to late-breaking cutting-edge research that missed the original deadline for oral presentations. In all cases, they allow relaxed and open discussion with the authors, and many research collaborations and partnerships have arisen from such meetings."

The involvement of ILM is a continuation of its long-term association with previous MICROSCIENCE events.

"ILM's sponsorship of the poster sessions is really welcome news," said Mrs Winton. "It shows great support for those at the beginning of their careers. It also provides a massive bonus for some of the prize-winning posters, as the work will be featured in future issues of the magazine."

The conference sessions are presented within four symposia:

Physical Sciences: Applications

functional materials; thin films, coatings and interfaces; art, heritage and forensics; advanced materials; healthcare; nanomechanics; towards sustainable energy and environmental protection; earth and planetary materials and low dimensional materials.

Physical Sciences: Tools and Techniques

advances in scanning probe microscopy: applications at the nanoscale; advances in SEM; In situ and environmental EM; 3D/4D imaging; advances in EM instrumentation and methods (Professor David Cockayne Memorial Symposium); electron diffraction and crystallography; advances in spectroscopy in STEM and CTEM and advances in ion microscopy.

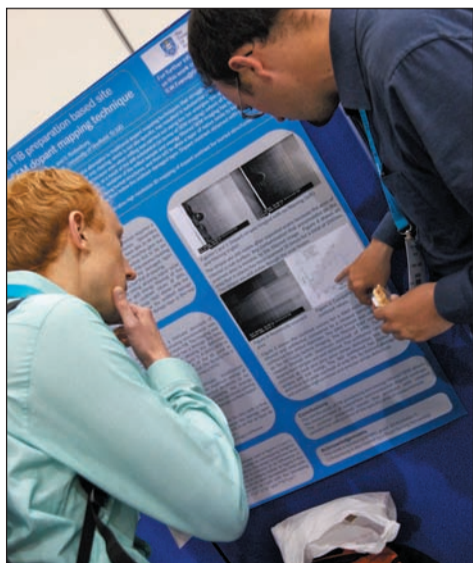
Life Sciences: Applications

organelle dynamics; biology of the cell nucleus; cytoskeleton and signalling; Imaging brain structure and function across different spatial and temporal scales; uninvited guests: visualising host-pathogen interactions; Imaging and flow cytometry in cancer biology and in vivo imaging of multicellular dynamics and complexity (applications).

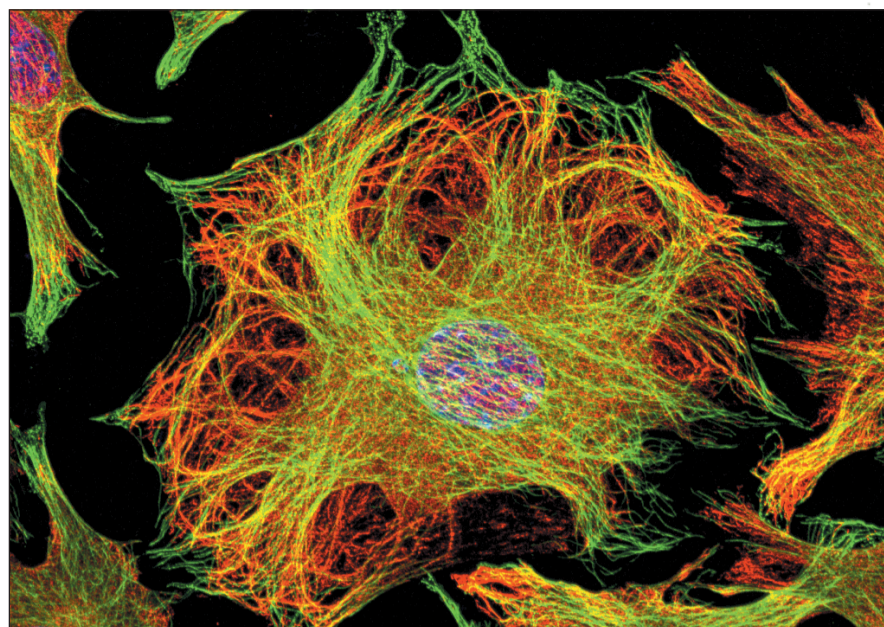
Life Sciences: Tools and Techniques

Super-resolution fluorescence microscopy for life sciences; applications and advances in high content imaging; probes for light and electron microscopy; 3D image processing (3D microscopy, 3D image analysis and developmental imaging); 3D electron microscopy of structure-function studies; techniques for imaging brain structure and function across different spatial and temporal scales and in vivo imaging of multicellular dynamics and complexity (techniques).

"The scientific programme is impressive," said Dr Stokes. "Anyone who is active in microscopy and related techniques should find sessions of interest, and I would encourage them to study the Call for Papers and to submit an abstract – or abstracts. This event happens only every four years, so take advantage of the opportunity. Bring your work to a wide audience and play an active part in making the event a success. All accepted abstracts will be published in the citable emc2012 Conference Proceedings."



Posters are sponsored by International Labmate Ltd



The quality of entries to the International Micrograph competition will be as high as ever.

An unrivalled exhibition

An exhibition will run alongside the conference and it has already received great support from companies. In early January 80 confirmed bookings had been taken for over 1400m² of stand-space. By comparison, at MICROSCIENCE 2010 there was 1100m² of stands.

"We are very pleased with response from companies," said Mrs Winton. "And, it is very encouraging to see new names mixing with the more established ones. There is still some space available, but I would encourage any potential exhibitors to make contact now, as the hall is filling fast."

As you would expect, ILM will be there.

The exhibitors will play a huge role in making emc2012 a success, and the effort and logistics of getting high-end, high-value equipment set-up and working should not be underestimated.

"Exhibitions such as emc2012 provide many challenges for companies, but they also provide unmatched opportunities for us to meet with researchers and to discuss their needs with them," said Rod Shipley, Chair of the RMS Corporate Advisory Board. "Of course, companies are there to promote their equipment, but delegates should not forget that the people that man the stands have a real passion for microscopy. I would encourage all visitors to engage with these people and to provide the feedback that will lead to even better products being available in the future."

As well as the conference and exhibition, emc2012 includes features such as a fully equipped teaching and learning zone that is freely accessible to all visitors, a social programme of receptions, company parties and a congress dinner, plus an International Micrograph Competition with a range of great prizes. Details of how to submit entries to this, along with details of bursaries for early career researchers will be available on the emc2012 website as they become available.



There will be a range of training and learning opportunities during all five days of the event.

Key dates for your diary

Registration opens - 1st March

Abstract submission deadline - 16th March

Early bird registration ends - 16th June

Final programme released - 30th June

Hotel booking deadline - 20th August

Late-breaking poster deadline - 31st August

You can keep up to date with all developments on emc2012, and ILM's involvement by subscribing to the emc2012 e-newsletter, or by visiting www.emc2012.org