

RMS - MEET SOME FACES BEHIND MICROSCIENCE 2008

The biennial MICROSCIENCE series of events is hosted by the Royal Microscopical Society. Its full-time staff oversees all the logistics, whereas the scientific content is organised by microscopists for microscopists.

This ensures that all possible microscopy techniques and tools will be discussed and on show at London's ExCeL from 23-26 June this summer. As the largest microscopy focused trade exhibition in Europe, partnering a truly international conference with high profile speakers from around the globe, it gives access to the very latest applications in both life and physical sciences. This makes it a truly unique event that delivers excellent educational opportunities for microscopists at all levels to keep up-to-date with key developments in microscopy, imaging and analysis.

Making MICROSCIENCE unique requires much planning and the RMS draws on both academic institutions and industry to ensure that there really is something for everyone. Here we meet two leading lights in the RMS to find out why they feel MICROSCIENCE 2008 has so much to offer.

MICROSCIENCE 2008
www.microscience2008.org.uk 

What are your current areas of research and how are you involved in microscopy?

I use a range of different techniques that combine together to achieve the goal. For example, I work on nano-scale coatings that provide wear resistance and oxidation resistance. The sub-structure of these coatings is only a few nm, so characterisation of the coating requires the very latest aberration corrected TEM to understand the atomic structure; both structural and chemical. In addition, to understand how the coatings perform in service (e.g. oxidation resistance in a gas turbine engine) we use Focused Ion Beam microscopy to section the surfaces and determine the manner in which they degrade. The samples are examined in high resolution SEM and TEM. Finally, we work on developing metal alloys for high strength applications, such as car body sheet to try and reduce car emissions. This requires large sample areas to be characterised at high resolution - something that electron back scatter diffraction (EBSD) is ideally suited to.

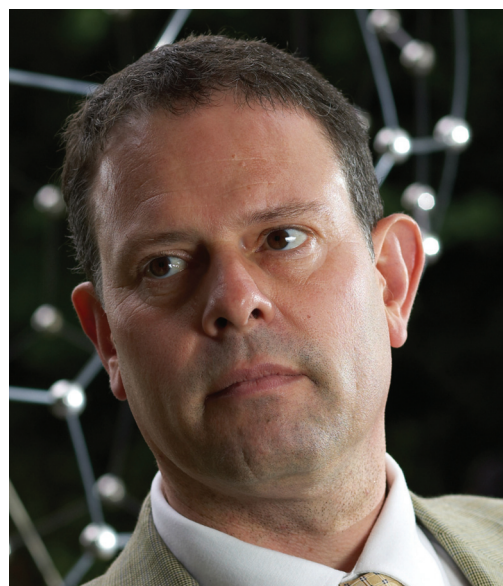
How are you involved with the organisation of MICROSCIENCE?

As President of the RMS, I overview all the society's activities. Clearly, MICROSCIENCE is one of the key activities that the society undertakes, and therefore it is important that I am on the organising committee (it should be emphasised that the MICROSCIENCE conference organisation is led by Dr Paul Monaghan (Hon Sec Life Sciences) and Dr Debbie Stokes (Hon

Microscopy Focus

INTRODUCING THE PRESIDENT

Professor Mark Rainforth is Director of IMMPETTUS (Institute for Microstructural and Mechanical Process Engineering; The University of Sheffield). With over 220 refereed publications, including reference textbooks, he is a recognised expert in the use of high spatial resolution microscopy to study materials for a wide range of applications, including thermomechanical processing, wear resistant materials and coatings and nanophase materials. He has also established the Sorby Centre for Electron Microscopy at the university. With such a pedigree in the application of microscopy to solve materials science problems, Mark was recently elected President of the RMS for a three year term.



RMS President, Professor Mark Rainforth is Director of IMMPETTUS (Institute for Microstructural and Mechanical Process Engineering; The University of Sheffield).

Sec Physical Sciences), while the exhibition is organised by Allison Winton, and Rob Flavin oversees everything, with the support from all the wonderful staff at the RMS!). I am also organising the session on 'Electron Spectroscopy' and judging the micrograph and poster competitions. Finally, I will be hosting the Presidents Reception at the start of MICROSCIENCE.

Why have you become involved in the RMS and MICROSCIENCE?

I first became involved in the RMS as a PhD student when I was asked to organise the Yorkshire Area Microscope Users Group and to help on the RMS Spring School in Electron Microscopy. I have always thoroughly enjoyed my time within the RMS for many reasons. Firstly, I have learnt so much, and continue to learn from a wide range of microscopists. Secondly, I have always found the meetings organised to be outstanding, both from the view of scientific rigour, from excellent organisation and what has become a hall mark of the RMS, remarkable value for money. Finally, I have always enjoyed the wonderful atmosphere within the RMS which nurtures interactions and is fundamental to a healthy society. In short the society achieves great things on the international stage, and I believe anyone would be amazed how so much is achieved by so few.

MICROSCIENCE is an excellent example of the remarkable output of the society. It is arguably the best trade exhibition in Europe and can be judged against the best in the world. There has always been a good conference with MICROSCIENCE, but this year we intend to run a true international conference that will make it a leading international event. Not only does MICROSCIENCE give first rate science and access to all the latest techniques, but also it is unique in providing hands-on training for microscopists at any level, through the Learning Zone and the various workshops.

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A FEW WORDS WITH THE VP

Having recently completed his two year term as RMS President, Professor Chris Hawes is still highly involved in the society as the Vice President and International Secretary. As Director of Research in the School of Life Sciences at Oxford Brookes University, Chris complements Mark's input by bringing a biologist's viewpoint to the RMS. Following a botany degree, he completed a PhD in fungal ultrastructure at Bristol University. After a brief interlude as an electron microscopy technician, he took up a post doctoral post in the Botany School of Oxford University before being awarded a Royal Society Fellowship in Plant Sciences. In addition to his Directorship, Chris also leads the Plant Cell Biology research group at Oxford Brookes.



Director of Research in the School of Life Sciences at Oxford Brookes, Professor Chris Hawes is also highly involved in the RMS as the Vice President and International Secretary.

What are your current areas of research and how are you involved in microscopy?

Our research predominantly investigates the higher plant endomembrane system and secretory pathway, which means we regularly use electron microscopy and live cell imaging techniques. We were in fact one of the first groups to use GFP in plant systems, which combined with confocal microscopy has revolutionised our work.

Why have you become involved in the RMS?

I originally became involved on a user group level in Oxford where we exchanged ideas and facilities. Affiliation to the RMS broadened our outreach since the society serves a very large community of microscopists. I don't think many people appreciate how much microscopy is used across the board from Quality Control in industry to healthcare diagnostics, through to academic research in both life and physical sciences. This makes the RMS unique since it doesn't just serve an academic community, but acts as an interface between science and industry. Furthermore, as the only truly international microscopical society, drawing distinguished members from around the world, this all puts the RMS at the forefront of developments in microscopy.

What do you feel MICROSCIENCE delivers to the scientific community?

The RMS is dedicated to advancing science, developing careers and supporting wider understanding of science and microscopy. MICROSCIENCE reflects this ethos in that it is highly inclusive of scientists at all levels and in all areas of academic research and industry.

MICROSCIENCE really is an event that you can take your whole lab to as there's something for everyone. Many of the attractions such as the exhibition, workshops and Learning Zone are free and registration for the Conference offers excellent value. In addition, technicians and researchers in the early stages of their careers can receive special Conference rates. My students love going to MICROSCIENCE as they can see the full breadth of equipment for microscopy. In particular the supplier-run free workshops which are integral with the exhibition offer cutting edge input on what's new to market. This makes it unique as no other meeting provides such insight; consequently, many deals are made at MICROSCIENCE.

This year we have also developed the conference to create a three day meeting which is streamed to ensure whether you're a cell biologist or materials scientist you'll definitely find something of interest in every session.

COUNTING DOWN TO MICROSCIENCE 2008

The countdown to the 23-26 June has now begun in earnest. As Rob Flavin, RMS Executive Director, explains: "We have finalised a comprehensive programme for our new-format conference, and registration is now open. In addition, we have a number of forthcoming deadlines for submission of oral paper and poster abstracts, as well as entries to our international micrograph competition. MICROSCIENCE is a very inclusive event and we encourage all researchers who are active in all areas of microscopy, imaging and analysis to submit abstracts."

Deadlines to note:

Final deadline for abstracts for oral presentation - 31st March 2008

Deadline for 2008 Micrograph competition entries - 30th April 2008

Final deadline for abstracts for poster presentation - 31st May 2008

For further information, please see: www.microscience2008.org.uk

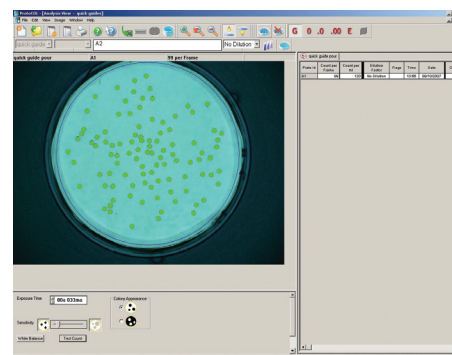
New Microbiology Imaging Software Offers Fast, Accurate Analysis of Colony Numbers and Zone Sizes

Synbiosis is pleased to introduce its new ProtoCOL V1.4 colony counting and inhibition zone sizing software, designed to save microbiologists valuable time, by automating many routine plate based image analysis tasks.

The new ProtoCOL software is built for maximum flexibility and can be used to analyse images of the same or different coloured colonies on pour, spiral or surface inoculated plates and 3M™ Petrifilm™, as well as measure inhibition zones on Single Radial Immunodiffusion (SRD) plates, and around antibiotic disks.

The software, based on the latest Windows platform, has all the useful icons on one screen, so it is quick and simple for microbiologists to navigate and begin their image capture and analysis, with minimal training.

The ProtoCOL V1.4 software is Good Laboratory Practice compliant and supports 21CFR Part 11. It features many innovations for measuring zone sizes, including a gantry control system to allow microbiologists to automatically image large SRD plates. The software also measures inhibition zones from the edge of an antibiotic disc, and automatically subtracts disc diameter sizes to provide results as a zone size only. This not only saves manual calculation time but also permits scientists to perform tests with different antibiotic disc sizes on one plate. The zone size results are automatically transcribed into Excel, and either an antibiotic or vaccine name can be entered into the database, which means it is easy to produce a full, secure audit trail for each specific therapy.



Circle no. 287

World-Leading Optics Allow Magnification Change Without Changing Light Intensity

Olympus has announced the addition of three new UIS2 objectives specifically for cytology applications. Together with the PLN10xCY and PLFLN10xCY objectives introduced last year, the PLN2xCY, PLN4xCY and PLN20xCY objectives feature built-in neutral-density (ND) filters, enabling quick changes in magnification without the need to adjust light intensity at all.

When employed with the ergonomically designed Olympus BX45 clinical microscope, this series of dedicated cytology objectives offers outstanding images with superior contrast and image clarity. Furthermore, with the perfect ergonomic layout ensuring visual comfort, Olympus is setting new standards in clinical microscopy.

The Olympus PLNCY series of UIS2 microscope objectives are specifically designed for clinical laboratory and examination work in both diagnostics and education purposes. These objectives are plan corrected, and therefore ensure bright and clear observation images with excellent flatness across the entire field of view. The built-in ND filters are designed for light balancing, allowing the user to switch from low to high magnification quickly and effortlessly without adjusting the light intensity.

This also allows for a more convenient way of working in the clinical environment, saving valuable time when compared to using an objective and a separate ND filter. In addition, user fatigue is reduced during cytological examinations, allowing faster and more accurate screening of specimens with significantly reduced eye strain.

Researchers can now choose from a range of objectives covering 2x, 4x, 10x and 20x magnifications, designed to fit the Olympus BX2 range of clinical inspection microscopes. These have always been greatly valued for their ergonomic features. In particular the Olympus BX45 has been specifically designed to meet the rigorous demands of repetitive routine microscopy and prolonged use in clinical screening, by allowing users to find the ultimate position. Olympus' ergonomic approach enables users to fully benefit from a perfect, upright and comfortable posture, which is essential for long-term fatigue-free operation. Furthermore, the complete effortless and straightforward operation and the high optical performance of the UIS2 optics complete the ultimate ergonomic solution.



Circle no. 288

