

One-day continuing
professional development course

Introduction to Scanning Electron Microscopy



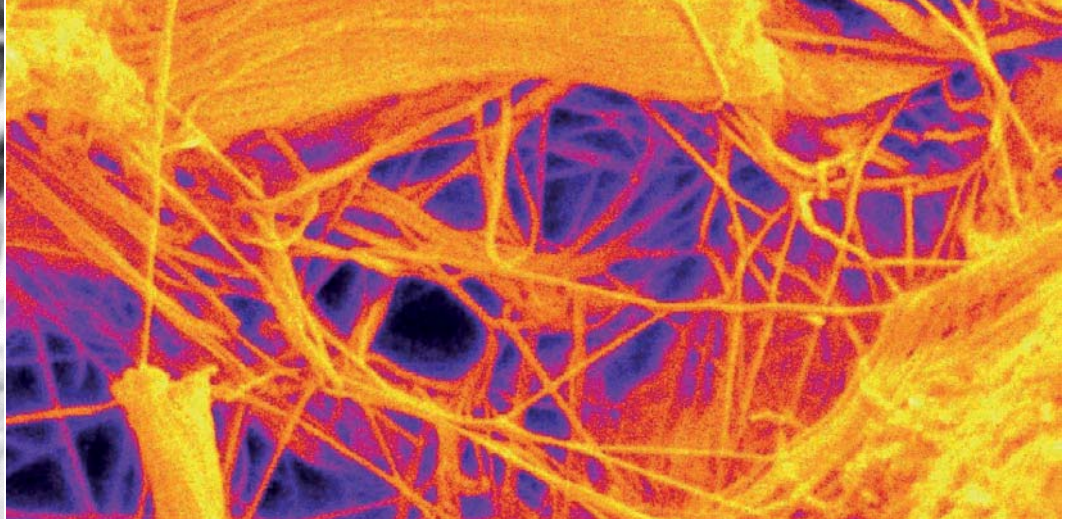
ETCbrunel
www.ETCbrunel.co.uk

Next courses: 28th October 2011
26th April 2012

endorsed by **IOP** Institute of Physics



▲ Hydrogen induced embrittlement of tungsten



▲ Image of trypsin-purified porcine dermal collagen (Permacol™) in false-colour

Introduction to Scanning Electron Microscopy

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The one-day course, "Introduction to Scanning Electron Microscopy" gives delegates theoretical and practical knowledge of scanning electron microscopy (SEM). The programme introduces imaging techniques, high resolution SEM, and energy dispersive X-ray analysis, which provides compositional information. Attendees will investigate the theory and practice of both standard SEM, and the Centre's advanced field emission scanning electron microscope (FEG-SEM), which combines ultra-high resolution with variable pressure mode allowing optimum imaging

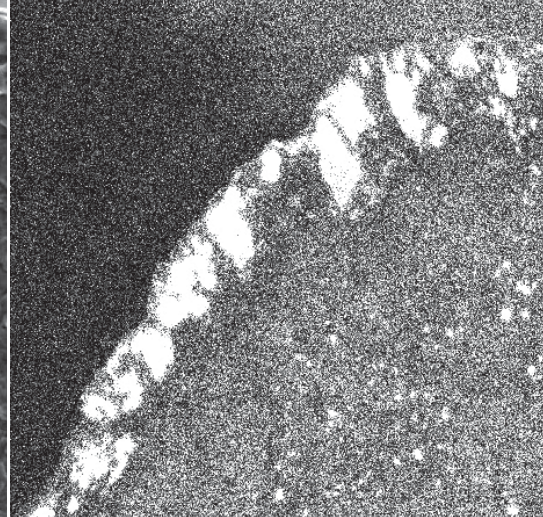
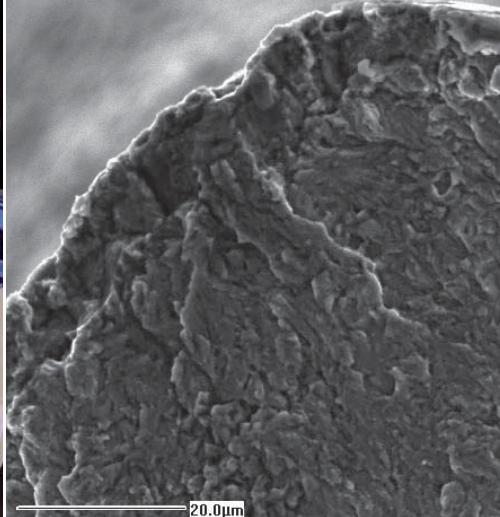
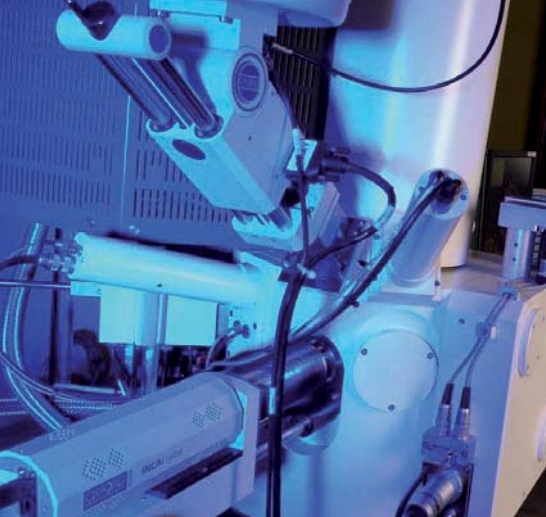
of a range of sample types. A combination of lectures and demonstrations will explore the theory, practice and application of these powerful analytical tools. Examination of a number of samples will be demonstrated during the day, which may include selected material from delegates. With its highly practical approach, running from sample preparation through image collection and compositional analysis, this course is designed to give delegates an introduction to the application and operation of scanning electron microscopy.

For more details and course scheduling please see our website www.ETCbrunel.co.uk or contact:

Dr Benjamin Jones
etc-research@brunel.ac.uk
+44 (0)1895 265409 / 255793

ETCbrunel also offers a three-day course, Practical SEM, with study of advanced imaging and analytical modes, and extended hands-on training. We also provide bespoke training courses in this and other instrumentation for individual organisations.

Cover image: electroceramic material showing grain structure and boundary phases



▲ ETCbrunel's Zeiss Supra FEG-SEM

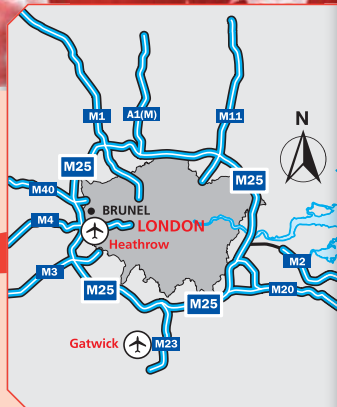
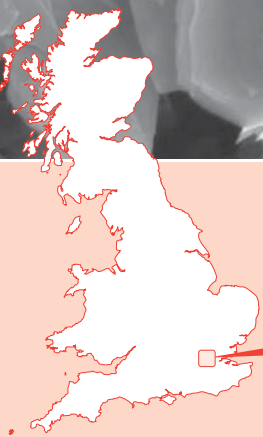
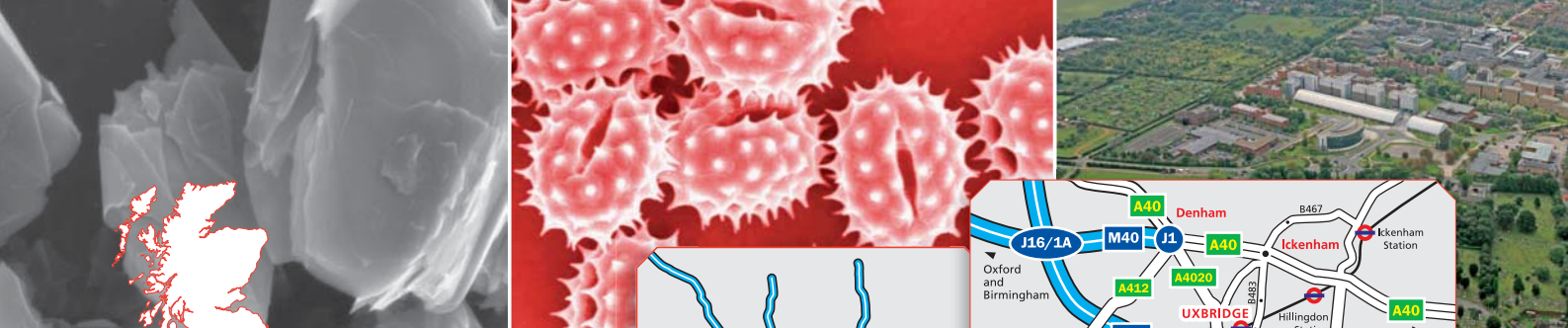
▲ SEM image of fatigue failure

▲ Compositional map showing elemental distribution

"Introduction to SEM" Booking Form

Name of Delegate											
Organisation / Affiliation											
Address											
Email											
Phone											
<p>I would like to book a place on the Introduction to SEM course, to be held on the:</p> <p><input type="checkbox"/> 28th October 2011</p> <p><input type="checkbox"/> 26th April 2012</p>											
Short course delegate fee £345				IoP member rate £310				These amounts are not subject to VAT			
Early booking discount -£50 (before 16th September 2011 or 15th March 2012)											
<p><input type="checkbox"/> Please invoice for the above amount, I enclose a purchase order</p> <p><input type="checkbox"/> I enclose a cheque for the above amount</p> <p><input type="checkbox"/> Please charge my Visa/Mastercard credit card for the above amount</p>											
Cardholder name:											
Card number:											
Expiry date:					Security code:						
Signature:											
<p>Please return to Short Courses, ETC, Brunel University, Uxbridge, UB8 3PH or fax to: 01895 812544 Alternatively, bookings can be made by telephoning the Centre on 01895 255793</p>											

Refund policy. For cancellations more than one calendar month before the start of the course we will refund the fee paid, less a £50 administration charge. For cancellations from one month to two weeks prior to the start of the course 50% fees will be returned. We regret it is not possible to give refunds if places are cancelled with less than two weeks notice. Name substitutions can be made at any time.



How to find us...

We are easily accessible from motorway, rail, air and London underground networks. For more details see our website www.ETCbrunel.co.uk

Brunel University, founded in 1966 and located in West London, is named after the celebrated nineteenth century engineering genius, Isambard Kingdom Brunel, famous for a range of ambitious and highly innovative projects. The ethos of our world renowned namesake is reflected in the design of our courses which combine academic rigour with a practical and imaginative approach.

ETCbrunel is a purpose built microscopy and surface analysis centre, established for over 30 years to provide an end-user focused research, development and consultancy

service. In addition to electron microscopy, instrumentation available at the Centre includes X-ray photoelectron spectroscopy, Fourier-transform infra-red spectroscopy, atomic force microscopy and secondary ion mass spectrometry.

ETCbrunel operates a multidisciplinary approach and supports teams in engineering, biology and environmental science. The one-day **Introduction to Scanning Electron Microscopy** course, endorsed by the **Institute of Physics**, is led by **Dr Alan Reynolds**, who acts as a consultant to industry worldwide

and has a special interest in biological specimens, environmental pollution and asbestos identification and quantification. Dr Reynolds research includes European air pollution and heavy metals in plants.

Other contributors include **Dr Benjamin Jones**, a physicist working on nanostructured carbon and forensic science, in association with the Home Office, **Nita Verma**, a consultant chemist with interests in catalysis and environment and **Lorna Anguilano**, an archaeologist and expert in historical metallurgy.

Every effort has been made to ensure the accuracy of the information in this brochure and the University will take all reasonable action to deliver courses and services in accordance with the descriptions set out in it. ETCbrunel reserves the right to change the order, content and delivery of lectures and courses as circumstances dictate.



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IOP Institute of Physics

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