Volume 19, Number 6

December 2013

# Microscopy and Microanalysis



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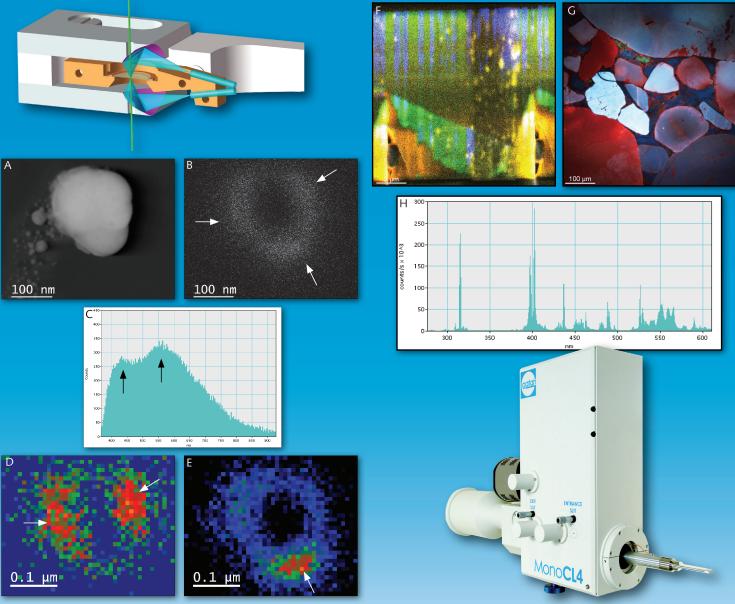
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Top Image: Schematic cross section through the Vulcan'" holder showing the specimen region and top and bottom collection mirrors (mirrored surface shown in purple). An electron beam (green) stimulates the specimen to emit photons (blue) which are focussed by the collection mirrors into optical fibres stuated away from the specimen region. Bottom Images A-E: CL study of colloidal silver nanoparticle; A) HAADF image; (B) panchromatic CL image (acquired simultaneously to the HAADF image) displaying three 'bright' resonance nodes (indicated by arrow markers); C) cathodoluminescence spectrum with two peaks corresponding to spectrally discrete resonance modes at 430 and 510 nm; D) and E) cathodoluminescence band pass images at 430 and 550 nm ±40 nm extracted from parent spectrum-image showing resonance modes are separated spatially and spectrally.

Images F-H: F) GaN film in cross section imaged with Gatan MonoCL4° CL imaging and spectroscopy system. Composite image of stacking fault, threading dislocation, point defect and band gap luminescence. Temperature = 6 K; G) quartz arenite polished section cathodoluminescence image prepared using the Gatan Illion\* and imaged with Gatan ChromaCL2° imaging system. Image courtesy of Dr. J. Schieber, Indiana University; H) Cathodoluminescence spectrum from lanthanide doped yttrium aluminium garnet single crystal acquired at room temperature. Multiple spectral features corresponding to various Eu³ d to f orbital electron transitions observed. Bottom image: MonoCL4\* Elite CL imaging and spectroscopy system.

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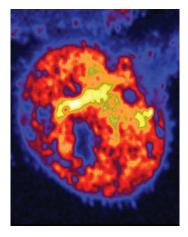
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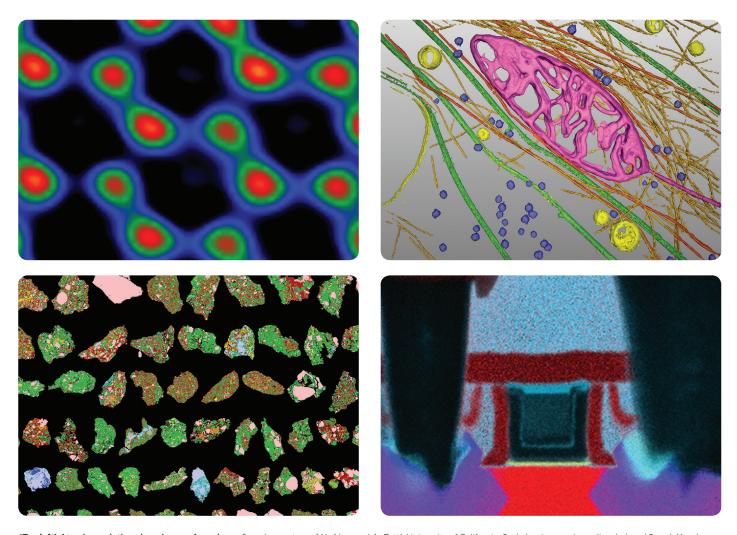






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These Awards honor technologists from both the Biological (Hildegard H. Crowley Award) and Physical Sciences (Chuck Fiori Award) who have made significant contributions such as the development of new techniques which have contributed to the advancement of microscopy and microanalysis.

#### Morton D. Maser Distinguished Service Award

This Award was initiated to recognize outstanding volunteer service to the Society as exemplified by Mort Maser, who served the Society for many years with great dedication. This award is made to honor an MSA member who has provided significant volunteer service to the Society over a period of years.

#### The Albert Crewe Award

The Albert Crewe Award was initiated to recognize the distinguished contributions to the field of microscopy and microanalysis in the physical sciences of a postdoctoral fellow of not more than 6 years' standing (since doctoral graduation).

#### The George Palade Award

The George Palade Award was initiated to recognize the distinguished contributions to the field of microscopy and microanalysis in the life sciences of a postdoctoral fellow of not more than 6 years' standing (since doctoral graduation).



Further details of the nomination process can be found on the society webpage at: www.microscopy.org

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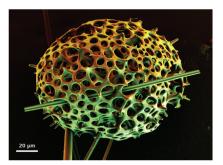
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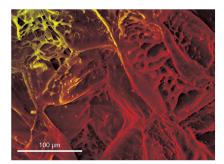








Pseudo-color image of uncoated Radiolaria at 1 keV landing energy using beam deceleration technology. Sample courtesy of the University of Cambridge.



Thin slice of apple imaged on EVO LS with the EPSE detector at 20 kV and 100 Pa water vapor at -15  $^{\circ}$ C.

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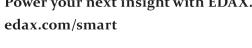


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