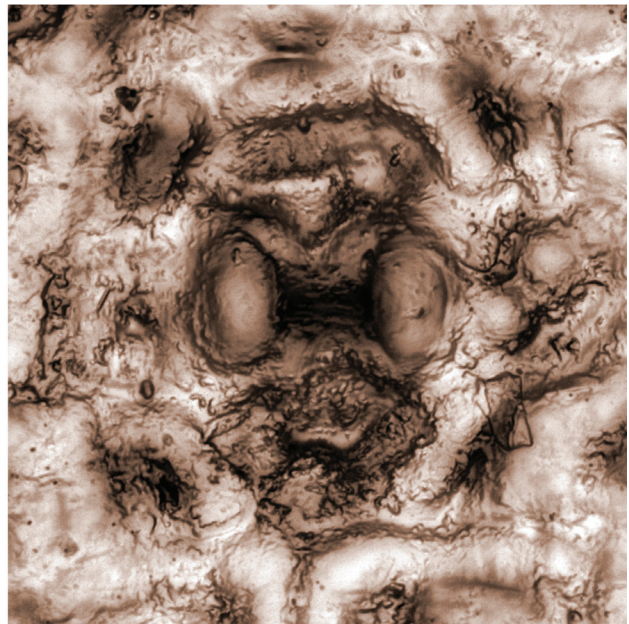
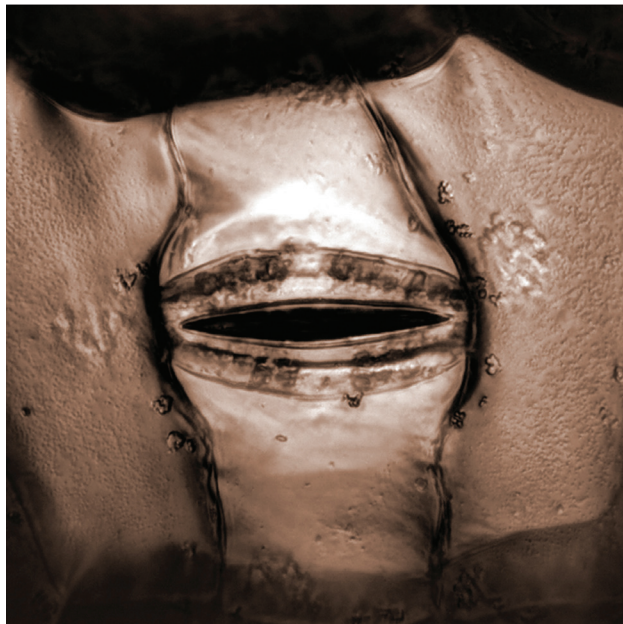
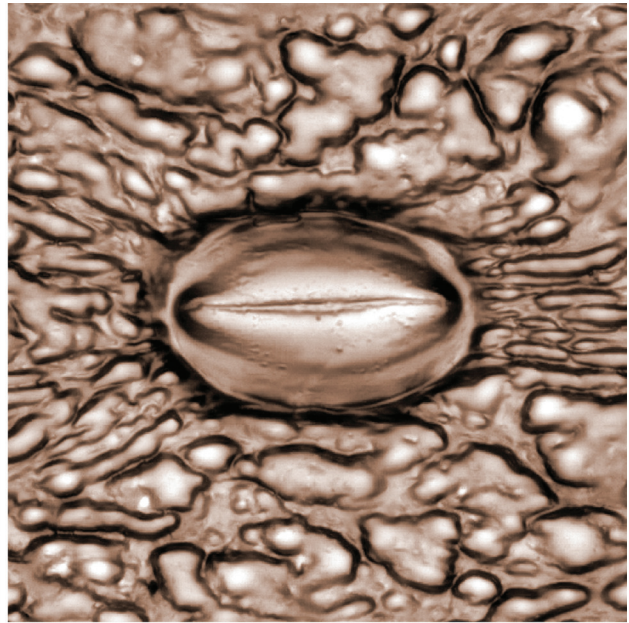
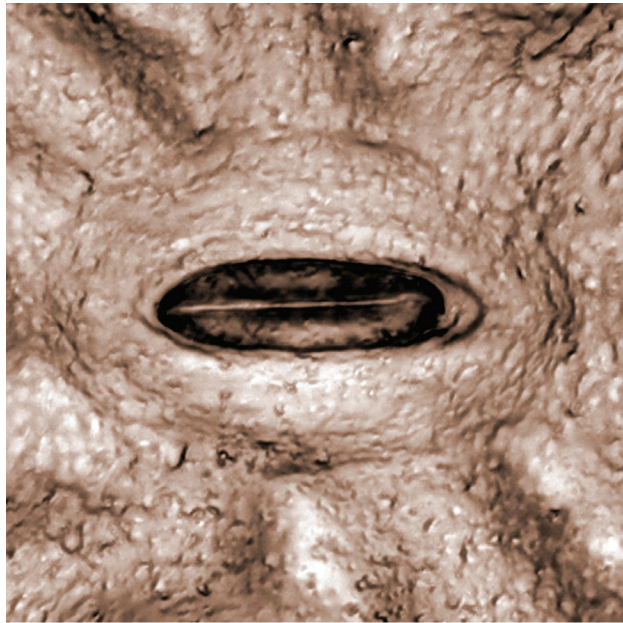


Microscopy TODAY

Volume 27 Number 1 2019 January



ETHOS

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The All-New Hitachi ETHOS SEM-FIB combines ultra-high resolution imaging and elemental analysis at low voltages with ion optics for nm-scale precision processing.



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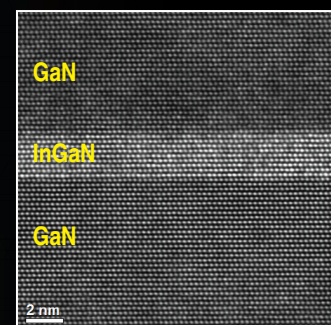
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- Real-time analytical 3D segmentation capability

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- Sample orientation control with Anti Curtaining Effect (ACE) technologies
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200 kv ADF STEM Image of processed lamella by Triple Beam Ar Ion at 1kV

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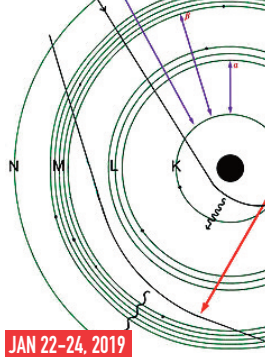
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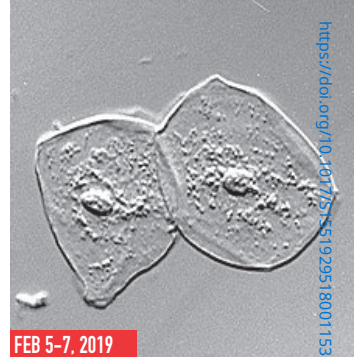
JAN 15-17, 2019

Sample Preparation for Semiconductor Devices: A Complete Picture



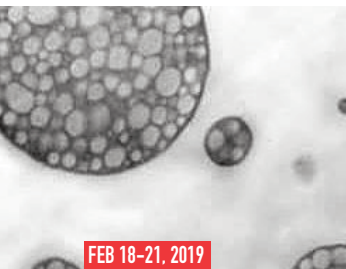
JAN 22-24, 2019

X-Ray Microanalysis Workshop: A Complete Picture



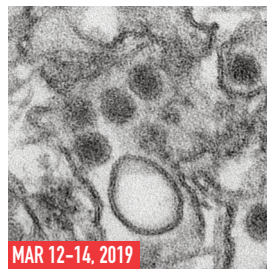
FEB 5-7, 2019

Introduction to Microscopy Techniques Workshop



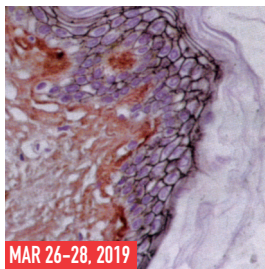
FEB 18-21, 2019

Materials Ultramicrotomy Workshop



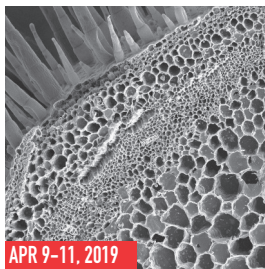
MAR 12-14, 2019

Biological TEM Workshop: A Complete Picture



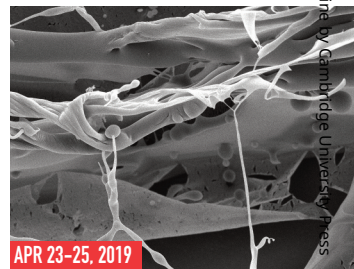
MAR 26-28, 2019

Aurion Immunogold Silver Staining



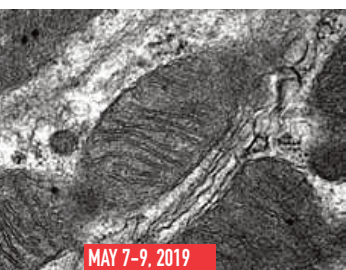
APR 9-11, 2019

Biological SEM Workshop: A Complete Picture



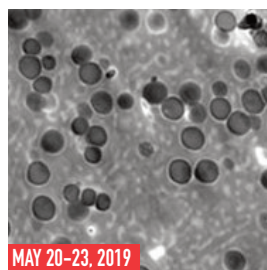
APR 23-25, 2019

Cryo SEM Workshop



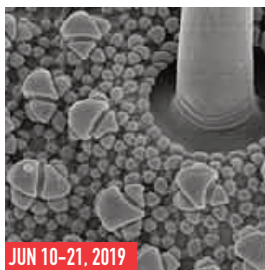
MAY 7-9, 2019

Automated and Rapid Specimen Processing for Electron Microscopy Workshop



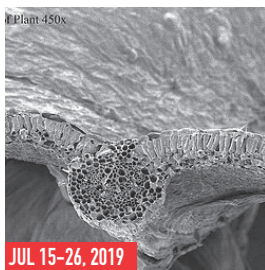
MAY 20-23, 2019

Materials Ultramicrotomy Workshop



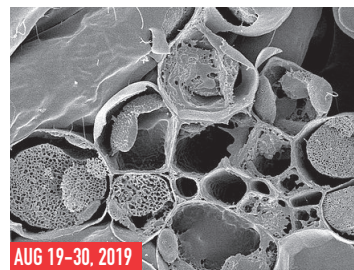
JUN 10-21, 2019

Microscopy: The Complete Image



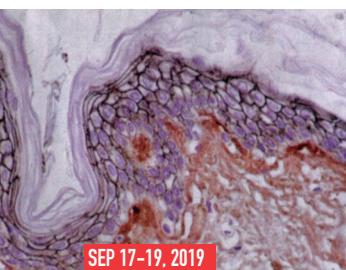
JUL 15-26, 2019

Microscopy: The Complete Image



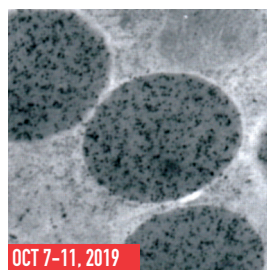
AUG 19-30, 2019

Microscopy: The Complete Image



SEP 17-19, 2019

Aurion Immunogold Silver Staining



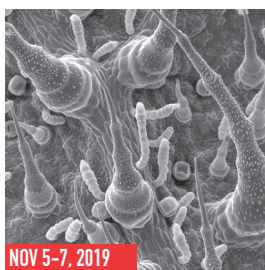
OCT 7-11, 2019

Cryosectioning/Immunogold Workshop



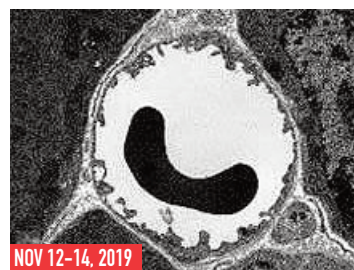
OCT 22-24, 2019

Introduction to Microscopy Techniques Workshop



NOV 5-7, 2019

Biological SEM Workshop: A Complete Picture

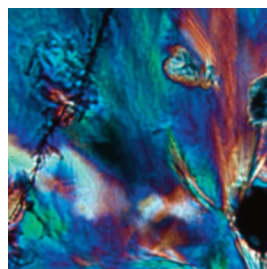


NOV 12-14, 2019

Biological TEM Workshop: A Complete Picture

Plus: Pharmaceuticals Workshops, dates to be determined...

- Pharmaceutical Microscopy Workshop
- Pharmaceutical Microscopy Workshop: Applications
- Pharmaceutical Chemical Imaging Workshop
- Pharmaceutical Microscopy Workshop: Polymorphism
- Pharmaceutical Microscopy Workshop: Techniques



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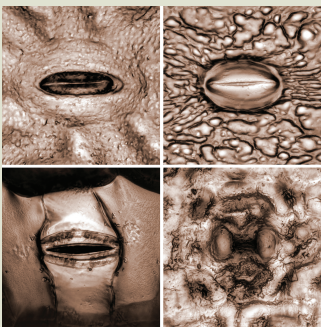
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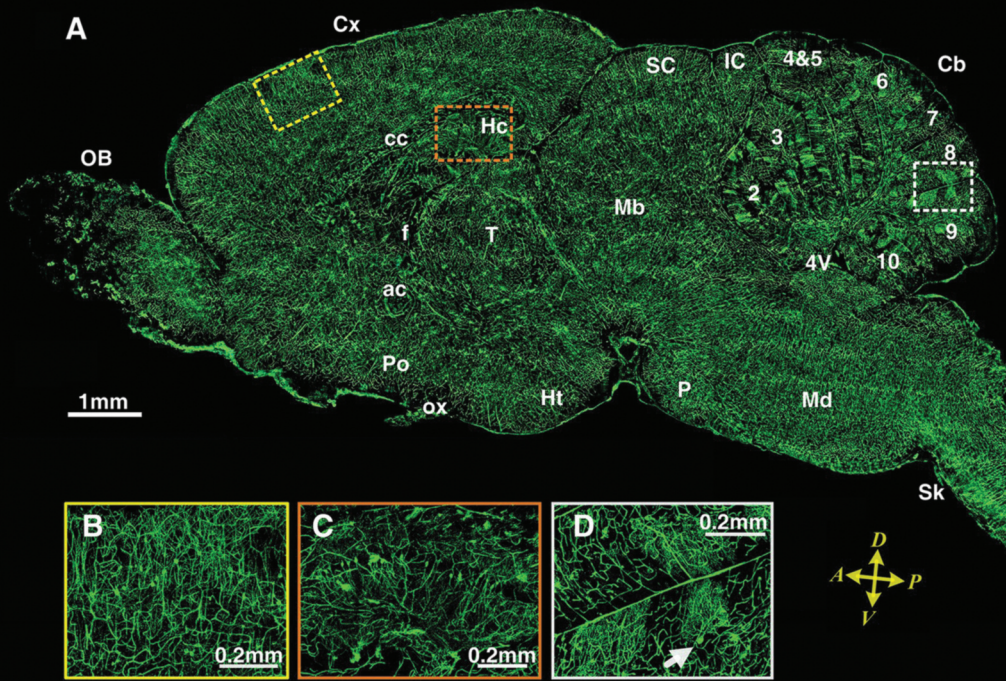
Stomata of various plants. Clockwise from upper left: *Tradescantia*, *Masdevallia*, *Agave*, and *Paeonia* Stomata. Image widths are 120 μm , 110 μm , 120 μm , and 70 μm , respectively. Images acquired by light microscopy using photo stacks.

See article by Clark.

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YOU'LL FIND **DiATOME** AT THE FOREFRONT OF **INNOVATION...**



Creating a High Resolution Atlas of the Mouse Brain...

(A) A sagittal image reconstructed from a stack of 100 virtual sagittal sections (total thickness of 0.1 mm). These sections were transformed from the original coronal sections. The sagittal image was located in the right hemisphere about 0.4 mm lateral to the middle. Almost all major regions of the brain can be seen in this image, e.g., the Olfactory Bulb (OB), Cerebral Cortex (Cx), Hippocampus (Hc), Fornix(f), Anterior Commissure (ac), Thalamus (T), Cerebellum (Cb), Midbrain (Mb), Pons (P), Medulla (Md), Corpus Callosum (cc), Superior Colliculus (SC), Inferior Colliculus (IC), Hypothalamus (Ht), Preoptic Area (Po), Optic Chiasm (ox), 4th ventricle (4V) and nine lobules of the cerebellum (Arabic numerals, 2 to 10). The three regions inside the different colored rectangle in (A) are the positions of (B), (C) and (D), which illustrate the cerebral cortex, hippocampus and cerebellum, respectively. In the reconstruction of sagittal image, no dislocation was observed along the D-V axis, i.e., the coronal sections are inherently aligned along the A-P axis.

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Micro-Optical Sectioning Tomography to Obtain a High-Resolution Atlas of the Mouse Brain

Existing imaging tools have limitations for brainwide mapping of neural circuits at a mesoscale level. In collaboration with DiATOME, researchers developed a Micro-Optical Sectioning Tomography (MOST) system utilizing a DiATOME Diamond Knife that can provide micron tomography of a centimeter-sized whole mouse brain.

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A 3D structural dataset of a Golgi-stained whole mouse brain at the neurite level was obtained. The morphology and spatial locations of neurons and traces of neurites were clearly distinguished. Researchers found that neighboring Purkinje cells were sticking to each other.

Acknowledgement

Micro-Optical Sectioning Tomography to Obtain a High-Resolution Atlas of the Mouse Brain Anan Li, Hui Gong, Bin Zhang, Qingdi Wang, Cheng Yan, Jingpeng Wu, Qian Liu, Shaoqun Zeng, Qingming Luo

Britton Chance Center for Biomedical Photonics, Wuhan National Laboratory for Optoelectronics—Huazhong University of Science and Technology, Wuhan 430074, P. R. China.

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