

JEOL *ink*

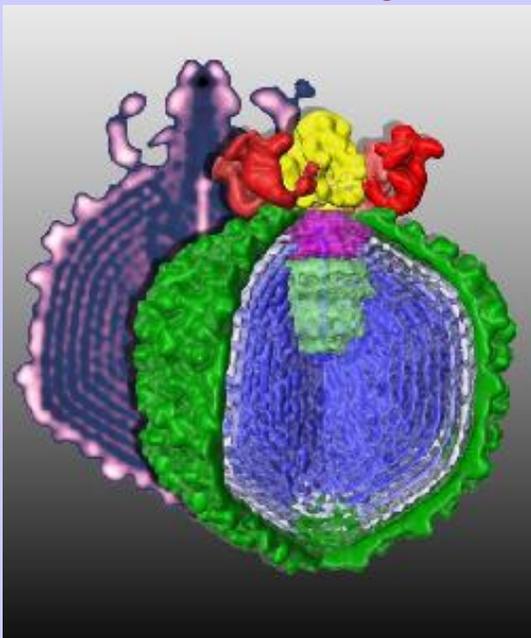
JEOL USA Newsletter

December 2007

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Extreme Image



Epsilon 15 bacteriophage shown on cover of [Nature](#) magazine. Courtesy of Professor Wah Chiu, Director National Center for Macromolecular Imaging, Baylor College of Medicine.



New MultiBeam SEM/FIB

A new, high throughput SEM/FIB combines Focused Ion Beam micro milling with the high resolution imaging of the JEOL LaB6 electron column. The [MultiBeam](#) is a high-productivity tool for IC defect analysis, circuit modification, TEM thin film sample preparation, and mask repair.

A versatile all-in-one system, the MultiBeam features Serial Slicing and Sampling (S³™) for in-process monitoring of milling, fabrication, and reconstructing 3D images of the sectioned area. A maximum milling current of 30 nA ensures high throughput milling of large areas.

Additional features include low vacuum operation for non-conductive specimens without coating or alteration, a gas injection system for etching and deposition, a large stage for up to 150 mm samples, and a multiple port design for a range of analytical needs. Samples are loaded through a standard airlock system.

Two new nano-imaging labs will take delivery of the MultiBeam systems in early 2008. JEOL USA has formed a partnership with both the University of Southern California and Boston

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JEOL USA Mission Statement



Mission Statement

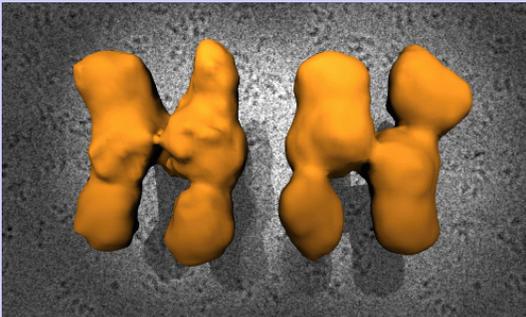
Achieve customer fulfillment and loyalty by delivering outstanding technology and superior support while maintaining a leadership position in the industries and institutions that we serve.

See Us at These Upcoming Meetings and Tradeshows



American Society of Cell Biology

47th Annual Meeting
December 1-5, 2007
Washington Convention Ctr
Washington, D.C.
JEOL: Booth #315



Visit JEOL at ASCB and see how JEOL cryo-TEMs are in the forefront of biological research, opening new doors to the study of alphaviruses, VEE, the hanta virus, herpes, HIV, and more. Nanoscale resolution and atomic-level stability are the hallmarks of JEOL Transmission Electron Microscopes. Discover the new generation of TEM with 3D Tomography, remote operation, and rapid data acquisition to rapidly visualize cellular organization. Learn how JEOL Scanning Electron Microscopes are making headlines in mapping the brain. See real images and come talk to our TEM and SEM experts.

College which will advance applications research on the east and west coasts.

Two U.S. Orders Received

The University of Southern California (USC) purchased the new JEOL MultiBeam for its new Center of Excellence for Nano-Imaging in Los Angeles, California. The new lab will also house a JEOL JSM-7001FLV low vacuum, field emission scanning electron microscope (SEM) and a JSM-6490LV low vacuum tungsten SEM. USC experts in the fields of nanotechnology, biology, materials, and engineering will use the new instruments as part of a shared core lab.

Boston College has selected the new JEOL MultiBeam Focused Ion Beam system and a Field Emission Scanning Electron Microscope for its soon-to-be-completed nanofabrication clean room facility in Newton, Massachusetts. As a result of Boston College's renewed investment in the sciences over the past decade, and a newly unveiled strategic plan, the college will open its first clean room (class 10,000/1,000), and install the JEOL models JIB-4500 MultiBeam and JSM-7001F Scanning Electron Microscope with lithography capabilities.

JEOL Puts Viruses Under the Microscope (published in [DrugResearcher.com](#))

The ever increasing sales of high-voltage field emission Transmission Electron Microscopes (TEMs) highlights the growing importance of understanding structure-activity relationships in structural biology.

The recent acquisition of Jeol's latest 300 kV field emission Transmission Electron Microscope (TEM), the JEM-3200FS, by [Indiana University](#) in the US for studying viruses is symptomatic of the ever increasing need for structural information about viruses to aid in the drug discovery process.

"There is a lot of interest in refining the picture of viruses and marrying that structural information from electron microscopy with the genomics field to see how mutations affect their shape and infectivity," said Dr Michael Kersker, Jeol USA's vice president and TEM product manager.

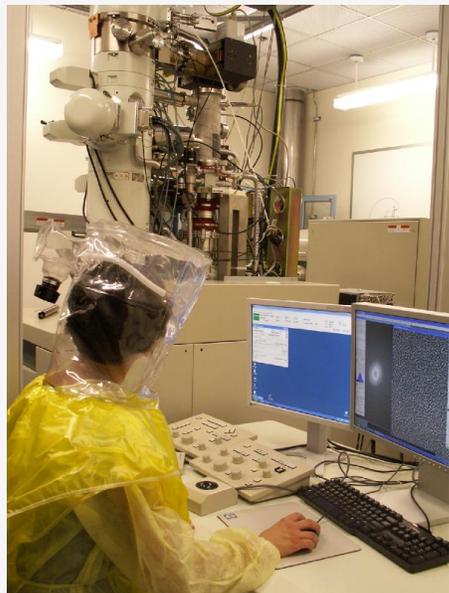
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Follow our REALab link above to where we spotlight researcher's work using JEOL electron microscopy or JEOL analytical instruments, and how their scientific advances are impacting their field.



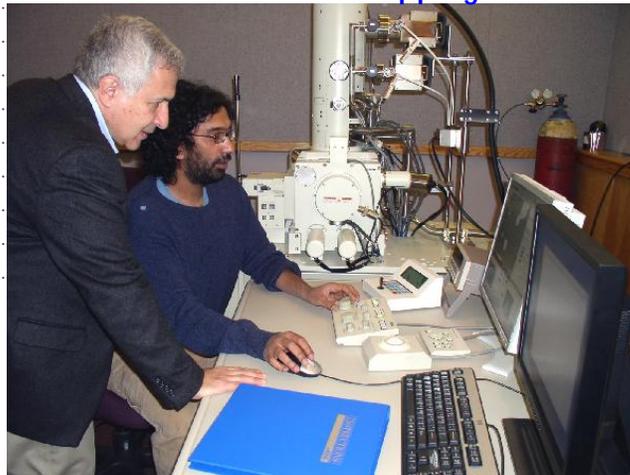
SEM Specimen Holders

[Parts Online](#)



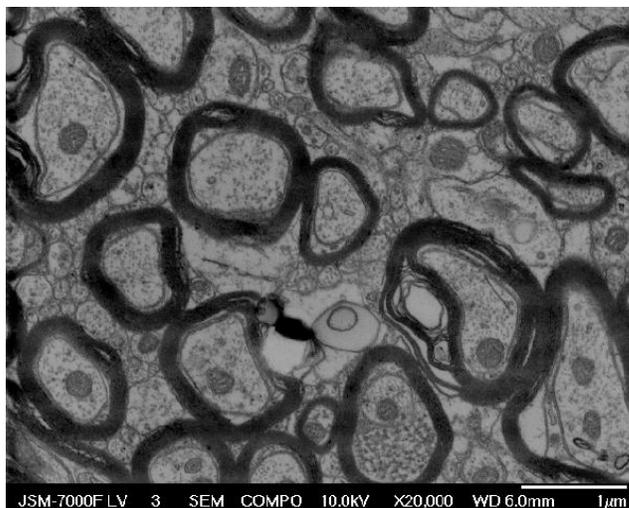
JEOL USA has the widest offering of sample holders for SEMs. Follow the link above to our Parts Online pages to see the selection. We also work closely with our customers when they have unique requirements. For more information, contact us at salesinfo@jeol.com.

Harvard's Lichtman Lab Mapping the Brain



Harvard biologist Professor Jeff Lichtman (left), post-doctorate Narayanan (Bobby) Kasthuri (right), and University of Southern California Research

Assistant Kenneth Hayworth are using a [JEOL high resolution field emission SEM](#) to produce a 3D image of the entire mouse brain. Here, they visit JEOL for more testing.



Lichtman's laboratory specializes in visualizing synaptic rearrangements. The complexity of the 3D SEM imaging project has wide reaching implications for the field, and has resulted in the development of the Automatic Tape-Collecting Lathe-Ultramicrotome (ATLUM) designed to produce ultra thin (50nm and less) slices of the brain, and retain them in sequential order for reconstruction mapping. [More](#) on this story, or [View images and movie file](#).