

Subject: Microscopy News from JEOL USA

# JEOLink

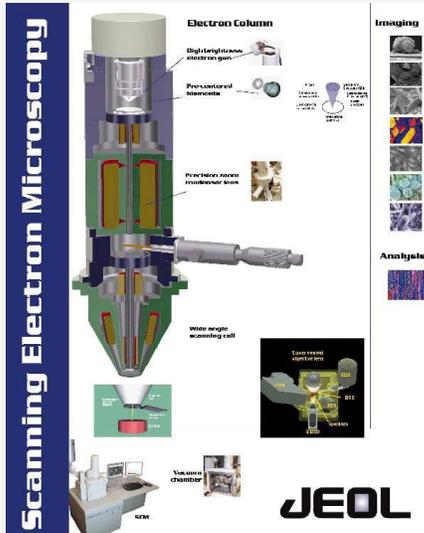
JEOL USA Newsletter

April 2007

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New 120kV TEM at Georgia Tech  
New Field Emission SEM  
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## New Poster Illustrates SEM Technology



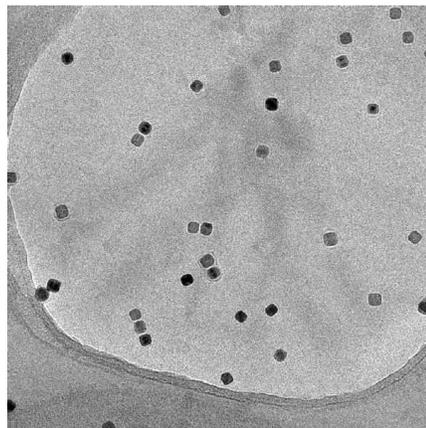
A new, full color poster highlights features of the electron column and SEM technology. Every SEM lab should have one! To request

Dear Colleague,

Welcome to the first email newsletter from JEOL USA. We invite your suggestions and hope you find the information to be of interest. Should you prefer not to receive future issues, you can select unsubscribe at the bottom of this document. Or, you can [contact us](#) to suggest information you'd like to see. Enjoy!

## Imitation of Life -Alphaviruses Inspire Metamaterials

Indiana University to Use 300 kV TEM for Biology and Materials Science



*Iron oxide functionalized with a polyethylene glycol layer and encapsulated in a virus protein cage. (Indiana Univ.)*

The purchase of a new JEM-3200FS 300kV FE TEM from JEOL distinguishes Indiana University as a major U.S. research facility where scientists can examine both biological and materials science structures at nanoscale resolution.

The TEM will be used for multiple disciplines by students and researchers in the fields of biology, chemistry, materials science, biochemistry, environmental and evolutionary sciences,

geology, microbiology, and behavioral science - reflecting the University's stated philosophy of achieving new vistas of understanding through interdisciplinary research.

Biologist and Assistant Professor Tuli Mukhopadhyay will use the TEM for cryo-electron microscopy and 3d image reconstructions on alphavirus particles.

Other groups will use the TEM in nanoparticle research, mimicking virus self-assembly

yours, contact us at [eod@jeol.com](mailto:eod@jeol.com).

## Now on DVD - Cross Section Polishing



From sample preparation to setup and care of the Cross Section Polisher, this DVD demonstrates the simplicity of this popular instrument that produces some dramatic SEM imaging results. Ask your [local sales representative](#) for details.

### Quick Links...

[JEOL USA Online](#)

[Products](#)

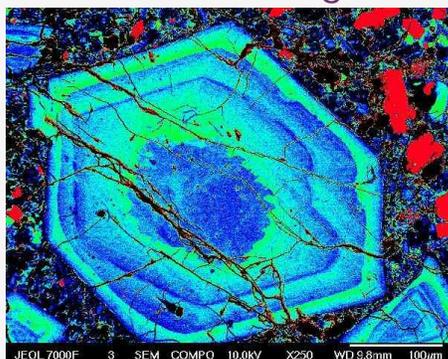
[Resources](#)

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## Extreme Image



Explosions, eruptions, ash falling like snow.... This is a colorized SEM image of zoned feldspar from Mount St. Helens imaged with a JEOL [JSM-7500F](#) field emission SEM.

to developing self-assembled molecular layers and nanoparticles for materials science applications.

Read more at [REALab](#), where research and applications are profiled for the community of microscopists and scientists in our network. Coming this



month to [www.jeolusa.com](http://www.jeolusa.com).

## Cryo Tomography Advances Eukaryotic Membrane Protein Studies

### New 120kV TEM for Georgia Tech



#### *JEM-1400 installed at Georgia Tech.*

The first U.S. installation of the new JEM-1400 TEM is at Georgia Institute of Technology. The new cryo-TEM is housed in the Cherry Emerson Building at the School of Biology until it will be moved to a new state-of-the-art, cryo-electron microscope facility next year. The new building will house facilities for physical science, engineering, biological, and biomedical nanotechnology research, and serve both the university and the private sector.

Biophysicist and Asst. Biology Professor Dr. Ingeborg Schmidt-Krey uses electron crystallography to study the

structure and function of eukaryotic membrane proteins, with relevance to asthma and blood coagulation. [Read more.](#)

## What's New? JSM-7001F Field Emission SEM



The [JSM-7001F](#) features a unique in lens field emission gun that delivers more than 200 nA of beam current to the sample. An extremely small probe diameter at low kV and high current is optimal for characterization of nanostructures with a resolution of 1.2nm at 30kV. The JSM-7001F is ideal

for low accelerating voltage X-ray spectroscopy and crystallography at and below the 100nm scale.

The large specimen chamber - designed for samples up to 200mm in diameter - accommodates a wide variety of detectors simultaneously. These include multiple EDS, WDS, EBSD, STEM, BSE, CL, EBIC, and IR camera. The SEM can also be equipped as a dual column FIB or an e-beam lithography tool.

The SEM comes with a choice of three stage sizes and exchange chambers, and a new 5-axis automated stage. The JSM-7001F can be configured for both high vacuum and low vacuum operation.

## Open House at JEOL's Pleasanton, CA Demo Labs



JEOL to host an open house at its Pleasanton, California demo facility on April 18th from 10 a.m. to 4 p.m. Though the office was opened in 2003, the addition of a new FE SEM, the [JSM-7500F](#), with its ultra high resolution, prompted the idea for a celebration and informative tour of the facility.

5653 Stoneridge Dr., Suite 122,  
Pleasanton, CA 94588  
Refreshments will be served  
Please RSVP to John Grimes, Dist. Sales Manager  
tel: 503-228-0504  
email: [grimes@jeol.com](mailto:grimes@jeol.com)

## JEOL USA 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.*

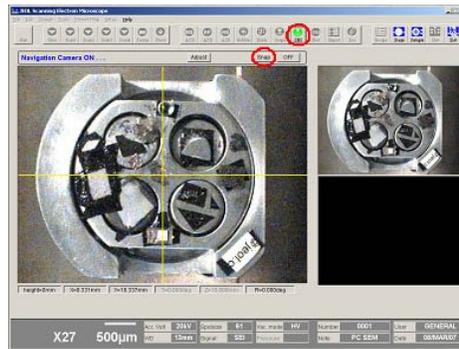
## JEOL Technics Ships 10,000<sup>th</sup> Unit

JEOL Technics, one of the company's design and manufacturing branches in Akashima, Japan, has shipped its 10,000<sup>th</sup> Scanning Electron Microscope (SEM).

Since JEOL, Ltd. was founded in 1949, more than 6,000 JEOL instruments have been installed in the United States, and more than 51,000 worldwide. JEOL USA opened in 1962 as a wholly-owned subsidiary of JEOL Ltd.

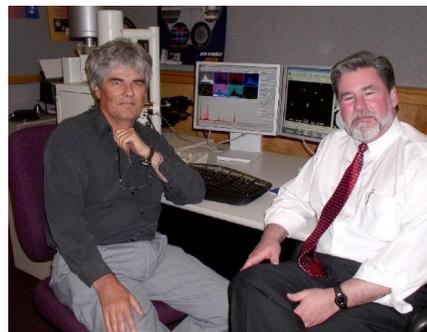
JEOL Technics manufactures several models of the company's extensive SEM product line, including the JSM-6490LV series, the most popular SEM in the world. JEOL Technics currently ships nearly 500 units per year.

## New SEM Stage Navigation System



A new accessory for our 6X90 series SEMs! A Stage Navigation System allows the user to navigate across a sample from a color photograph taken from a CCD camera mounted on the top of the SEM sample chamber. [For more information, click here.](#)

## JEOL Hosts NESM Spring Meeting



JEOL USA hosted the spring meeting of the New England Society for Microscopy (NESM) at its Peabody, Massachusetts headquarters on Thursday, March 15. NESM, celebrating its 40<sup>th</sup> anniversary this year, is a local affiliate of the Microscopy Society of America (MSA). The organization held its first inaugural meeting 1967 at JEOL USA.

Dr. Cameron Ackerley of The Hospital for Sick Children, Toronto Canada, (shown above with JEOL VP Charlie Nielsen) discussed imaging of sensitive biological samples using cryo and wet live cell imaging techniques. Dr. Yong Zhang, Research Specialist, Center for Materials Science and Engineering, Massachusetts Institute of Technology, outlined investigation of Sm(Co, Cu, Fe, Zr) 2:17 based magnets which have the best high temperature behavior among all current advanced permanent magnets.

The meeting at JEOL was organized by Donna Guarrera, Assistant SEM Product Manager, JEOL USA, Inc., and NESM Material Science Director. Donna has served on the board of NESM for the past three years. JEOL has been a corporate member of NESM since 1967.

The next NESM meeting will feature a workshop on "Imaging with High Resolution in the Transmission Electron Microscope" on Thursday, May 3rd, 2007 at the Marine Biological Laboratory at Woods Hole, Massachusetts. The workshop will be followed on Friday and Saturday, May 4th and 5th by the annual NESM Spring Symposium.

## Upcoming Meetings and Tradeshows



[Nanomaterials for Defense](#)

[N.E. Society for Microscopy](#)

[Electron, Ion, & Photon Beam  
Technology \(EIPBN\)](#)

[Lehigh School of Microscopy](#)

[Microscopy Society of Canada  
\(MSC\)](#)

[Semicon West](#)

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