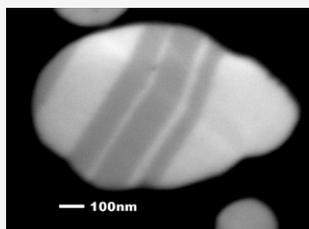


# JEOLink

JEOL USA SEM & TEM News

September 2009

## Extreme Image



*Nano-gold grain imaged at 0.5 kV with the LAbE detector. The sample was prepared with a JEOL cross-section polisher. From ["Multispectral Imaging in an FEG-SEM" in Advanced Materials & Processes, September 2009.](#)*

## SEM 101: Two New Publications Available

JEOL's popular introduction to SEM books have been updated and we are pleased to offer you two new pamphlets on the SEM. Click on each image to access.

## ClairScope™ Debuts at M&M

### *New Atmospheric SEM*

A truly integrated correlative microscopy tool, the new JEOL ClairScope(TM) was introduced at the Microscopy & Microanalysis Exhibition (July 27-30, Richmond, Virginia).

The ClairScope consists of an optical microscope coupled with SEM to allow concurrent imaging of a sample in its native state (in solution) at atmospheric pressure and temperature.

The specimen area is open, allowing for easy sample manipulation and reagent exchange. The sample holder incorporates a thin film window for SEM images of liquids, gels and solids at atmosphere. Biological materials can be imaged without dehydration, fixing, or coating. Dynamic processes can be followed in real time.

To see more information on the new ClairScope, [click here>>>](#)



## M&M 2009: Tutorials, demos, new instruments in the spotlight

There was a great turnout for hands-on demos and several tutorials throughout the week in the JEOL booth during the M&M 2009 show.

Tutorials covered several topics:

- Dual Axis Tomography Nuts and Bolts
- ClairScope Atmospheric SEM and Its Applications
- MEMs Heating Stage for High Resolution Electron Imaging
- FIB and EDS - New Applications
- Nanomanipulation in an FIB

# SEM

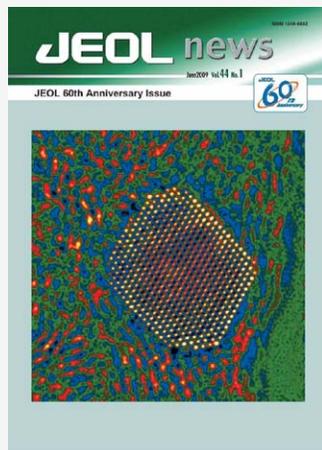
Scanning Electron Microscope A To Z  
Basic Knowledge For Using The SEM

JEOL

## SEM Q&A

JEOL

### Latest JEOL News Magazine Available Online



The August 2009 issue is now online. Please note, you must register on the JEOL website to view it. Past issues of the magazine can also be downloaded.

#### Additional Resources

There's more! Please visit our website to view our growing



Photos: 1) Dr. Jaap Brink, JEOL TEM Product Manager, enjoys his work! 2) Mitsuo Suga, Project Leader, came from JEOL's headquarters in Japan to introduce the new ClairScope 3) Participants in "It's a Family Affair" visit Dr. Greg McMahon (Boston College) who demonstrated the JEOL MultiBeam SEM/FIB.

REALab

### Schepens Eye Research Institute a "Research Jewel"

number of documents and downloads, gallery of images, and posters. Click on the Resources tab at the top of [www.jeolusa.com](http://www.jeolusa.com).

## JEOL USA in the News

**MultiSpectral Imaging in an FEG- SEM**  
*AM&P Sept 2009*

**First Real-time Direct Observation of Nanocrystal Growth (with video)**  
*PhysOrg.com August 2009*

**Development of a 200kV Atomic Resolution Analytical Electron Microscope**  
*Microscopy Today May 2009*

**How to Map Neural Circuits with an Electron Microscope**

Ask us about our **award-winning Service and Support**  
**Unmatched in the industry!**

**JEOL Award-winning Service & Support**

- Omega Award Winner 9 Consecutive Years
- Largest Service Staff
- Unparalleled Application Support
- Expertise 24/7

World Class Excellence Customer Satisfaction

2009, 2008, 2007, 2006, 2005, 2004, 2003, 2002, 2001, 2000

JEOL

**Upcoming Meetings & Tradeshows**



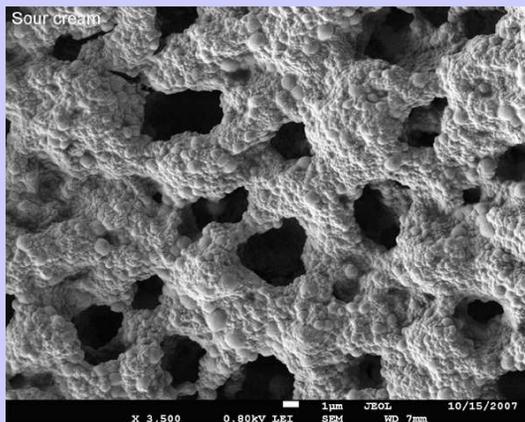
Schepens Eye Research Institute in Boston is the largest free-standing eye research institute in the United States. It is renowned for major breakthroughs in treatment of retinal disease, optic nerve regeneration, new cures for macular degeneration, diabetic retinopathy, glaucoma, other types of retinal and optic nerve degenerations and damage, dry eye, and eye tissue transplants.

JEOL visited with Dr. Ilene Gipson to learn more about her work as Ocular Surface Scholar and Senior Scientist and why she feels "mucus is beautiful." [Read the full story plus a personal note from Robert Santorelli, JEOL USA CEO>>>](#)

## Applications Note: Poor Man's Cryo Technique

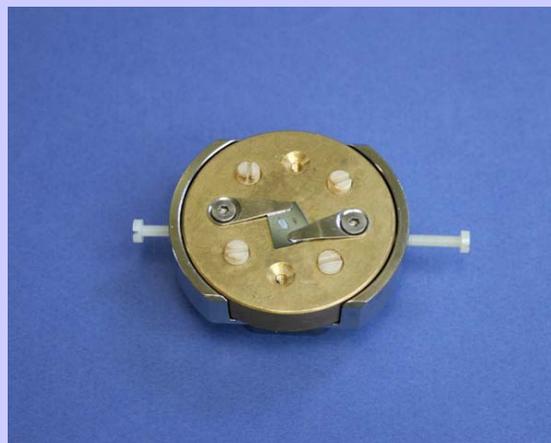
Cryo-SEM imaging is a powerful tool in studying the structures of electron beam and vacuum-sensitive materials including fragile biological structures such as fungi, plants, and cells, as well as soft or volatile samples and even liquids.

A low cost alternative to a complete cryo-system, and one that has been demonstrated to provide good results for many applications, is a simple Cryo-Stub. The technique can be thought of as 'Poor Man's Cryo' and is a simple and cost effective means of looking at fully hydrated materials or other electron beam and vacuum sensitive samples. [Click here to read the new applications note >>>](#)



*A sample is mounted on the Cryo-Stub. The cooled brass block is insulated from the holder with teflon screws.*

Applications notes and downloadable documents are posted on our website under Resources, or [click here](#) to view the list.



**JEOL TEM Specialist to Serve as Visiting**

[SPIE/BACUS Symposium](#)  
Monterey, CA  
September 14-18

[Neuroscience 2009](#)  
Chicago, IL  
October 17-21

[Society of Forensic Toxicologists \(SOFT\) Meeting](#)  
Oklahoma City  
October 18-23

[Materials Science & Technology \(MS&T\)](#)  
Booth # 600  
Pittsburgh, PA  
October 25-29

[International Symposium for Testing & Failure Analysis](#)  
San Jose, CA  
November 17-18

[Materials Research Society MRS Fall](#)  
Boston, MA  
December 1-3

## Quick Links

[JEOL News Magazine](#)  
July 2009 - Volume 44 (Note: requires online registration to download).

[Energy Table for EDS Analysis](#)

[JEOL USA Online Products Resources](#)

[Documents and Downloads](#)

[SEM/TEM Image Gallery](#)  
[Cross Section Image Gallery](#)  
[Tomography](#)

[Past Issues](#)

**JEOL**ink

[Contact Us](#)

**We'd like to hear from you!**

What topics or technical

## Scientist at Lehigh University

With just the right touch for fine tuning the optics of ultrahigh resolution microscopes, JEOL Applications Specialist Dr. Toshi Aoki is helping customers optimize the powerful imaging and analytical capabilities of their JEOL field emission TEMs. Starting in September, he will also serve as Visiting Scientist at Lehigh University, with opportunities to co-publish on new discoveries while putting the 200 keV FE TEM with Cs STEM corrector through its paces.

Aoki obtained his PhD. at Arizona State University, where he worked with the many outstanding microscopists at ASU's John M. Cowley Center for High Resolution Microscopy, including Professor Ray Carpenter and Professor David J. Smith. Since joining JEOL in 2004, Aoki has helped many customers with optimizing the performance of their Field Emission TEMs for their specific applications. While assisting with training at the Lehigh School of Microscopy, he made improvements to the JEM-2200FS that is in demand for research not only at the Bethlehem, Pennsylvania campus, but also through remote operation by outside research labs. Now as Visiting Scientist on a monthly basis, he will be working with Christopher Kiely, Professor and Director of the Nanocharacterization Laboratory and Lehigh School of Microscopy, and Masashi Watanabe, Associate Professor of Materials Science and Engineering.



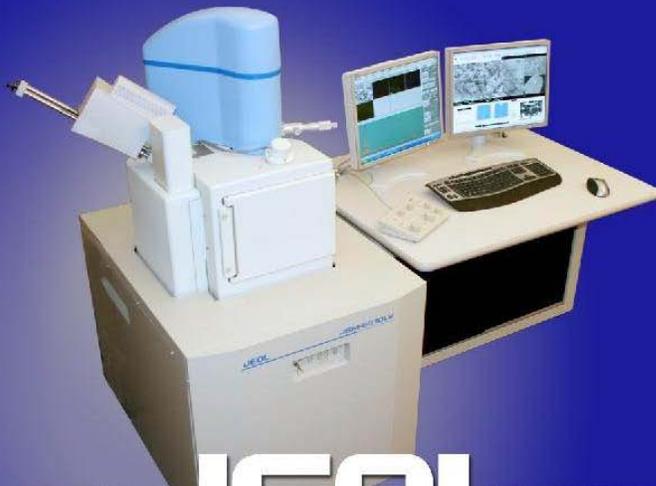
[To read the entire story, click here>>>](#)

# MS&T'09<sup>®</sup>

October 27-28, 2009  
David Lawrence Convention Center - Booth #600  
Pittsburgh, Pennsylvania

To schedule a demonstration on  
the JEOL JSM-6610LV and EDAX EDS analyzer

Please contact Bill Powell at  
978.764.2397 [wpowell@jeol.com](mailto:wpowell@jeol.com)



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### JEOL JSM-6610LV Scanning Electron Microscope

- ◆ Large chamber and stage
- ◆ Color navigation camera
- ◆ Ultrahigh performance backscatter detector
- ◆ Continuous bias
- ◆ Guaranteed resolution at 1kV
- ◆ High performance EDAX SDD
- ◆ High throughput EDAX analyzer

tips would you like to see  
in future issues? Please  
send us your thoughts.  
Email us at  
[jeolink@jeol.com](mailto:jeolink@jeol.com)  
Thank you.

To immediately schedule a demonstration at MS&T, contact Bill Powell at  
[wpowell@jeol.com](mailto:wpowell@jeol.com) or call 978.764.2397