

SEM | TEM | MASS SPEC | NMR | ESR | EPMA | AUGER | FIB | SAMPLE PREP | APPLICATIONS EXPERTISE

JEOLink Newsletter

JULY 2018 | ISSUE #80



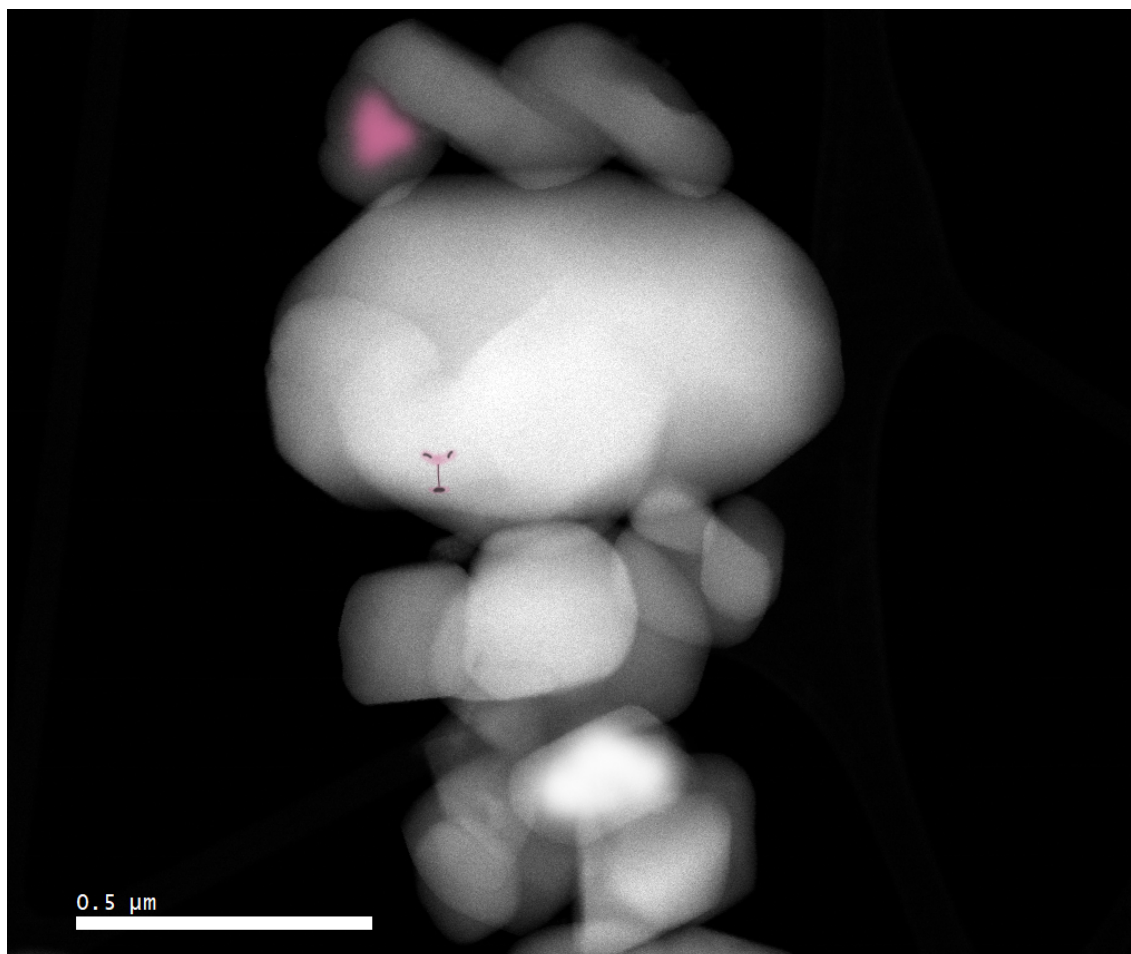
JEOL Image Contest 2018

Congratulations to our Image Contest winner for June!

A Walking Rabbit

Cong Su, Massachusetts Institute of Technology

Lithium metal oxide nanoparticles used as a battery cathode placed on a lacey carbon grid. Image taken on JEOL ARM200F TEM at Harvard University, Bell Lab.



Do you have a great image to share? Enter the JEOL 2018 Microscopy Image Contest!

Will you be our next Image Contest Winner - for July? Or a Grand Prize Winner for 2018?

Visit our website for how to [enter the contest](#) and win an Amazon gift certificate and be featured in the next JEOL calendar! View all [entries](#) or learn more about criteria for a winning image. [See all the 2018 entries to date here.](#)

What's New for M&M 2018? See us in Baltimore!

Step into JEOL's Electron Microscopy World at M&M 2018 in Baltimore, August 6-9, 2018 and take a step up in high resolution imaging and analysis. Catch the excitement of the microscopy community's biggest event, watch a demonstration, visit with our microscopy experts, schedule a one-on-

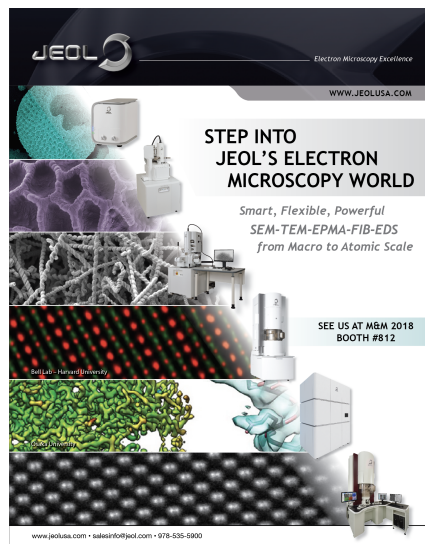
one overview of an SEM or TEM. Plus, take a few moments to find out about Mass Spec Imaging.

From **benchtop SEM** to **Atomic Resolution TEM**, and now **MS Imaging**, we have solutions for all your microscopy needs.

Check out our full lineup of **Scanning Electron Microscopes** and **Transmission Electron Microscopes**, **Microprobes and Auger**, as well as **Sample Preparation Tools** and **Focused Ion Beam**.

Schedule a demo or arrange a time to meet with a representative.

[Register here>](#)



Join us after M&M for a Microscope Dedication Symposium

Friday, August 10, 2018 - 8:00AM to 6:00PM

University of Pennsylvania Singh Center for Nanotechnology



You are cordially invited to attend the microscope dedication symposium for the NEOARM and the JEOL JEM-F200 on Friday, August 10, 2018, following the 2018 Microscopy and Microanalysis conference.



Speakers Include:

- Mark Allen - Singh Center for Nanotechnology, University of Pennsylvania
- Daan Hein Alsem - Hummingbird Scientific
- Hiroki Hashiguchi - JEOL, Ltd.
- Sergei Kalinin - Oak Ridge National Laboratory
- Robert Klie - University of Illinois – Chicago
- Ke-Bin Low - BASF
- Colin Ophus - Lawrence Berkeley National Laboratory
- Xiaoqing Pan - University of California at Irvine
- Frances Ross - IBM Watson Research Center / M.I.T
- Eric Stach - Singh Center for Nanotechnology, University of Pennsylvania
- Mitra Taheri - Drexel University
- Yimei Zhu - Brookhaven National Laboratory

Facility tours and a poster session will also be a part of the event. While the event is free, registration is required.

Please visit our registration page.
Directions and additional details.

30,000X, 70,000X, and 100,000X images of ZnO nanoparticles.



Smart-Flexible-Powerful SEM with Exceptional Fidelity at Any kV

Increase your productivity with our fully-integrated software, from specimen navigation to analysis to report creation. This state-of-the-art SEM, with its high-brightness electron gun system, provides amazing high-resolution imaging along with high sensitivity and high spatial resolution analysis at even faster speeds.

See the **JSM-IT500HR SEM** in action at M&M 2018! For more details and video, [visit our web page](#).

Publications and Microscopy News

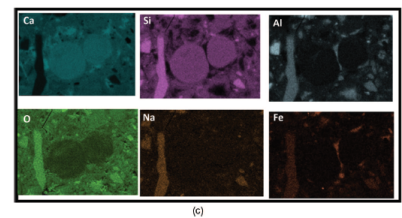
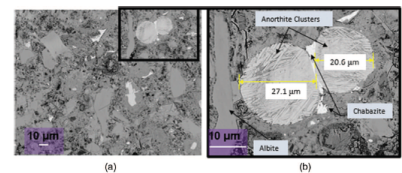
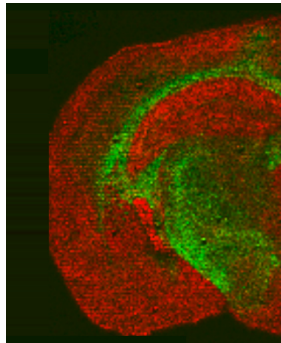
Particle Size Effect of Volcanic Ash towards Developing Engineered Portland Cements

New paper from MIT researcher shows that up to 50% percent of portland cement in concrete can be replaced with fly ash, reducing fuel consumption, greenhouse gases, and hazardous waste.

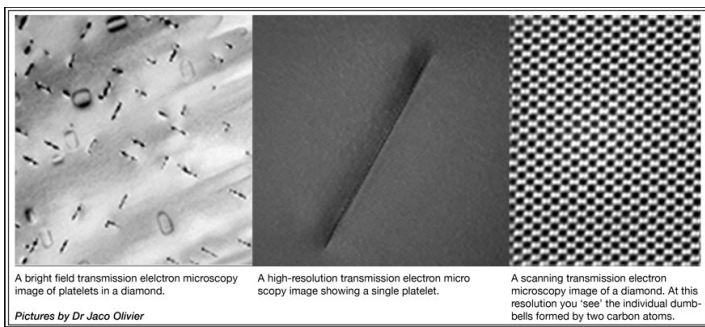
Dreaming Big, Focusing Small - Prof Stephen Pennycook has pushed scanning transmission electron microscopy to atomic limits and further.

Imaging Mass Spec Applications

The molecular makeup of a biological sample describes its structure and often unveils functional aspects, such as normal versus diseased. By scanning a sample with mass spectrometry (MS) and combining that information, scientists can explore the distribution of biomarkers, proteins, and other molecules, along with their masses. Thus imaging MS is essentially molecular microscopy.



Scientists Peep Deep into a Diamond to Discover its Defects



Using two processes, namely transmission electron microscopy and electron energy-loss spectroscopy, the scientists probed the spatial arrangement of carbon and nitrogen atoms forming the core of the defects. The nature of the bonds between the atoms was also determined.

With a Trace: Solving Crimes with Microscopy - Many applications of EM in forensics go beyond gunshot residue. For example, paint transferred between vehicles in a crash can be analyzed to unimaginable depths.

Pseudo-icosahedral Cr₅₅Al₂₃₂-δ as a high-temperature protective material - JEOL contributed to a paper in Physical Review Materials, a collaboration that researches suitability of pseudo-icosahedral Cr aluminide for high-temperature protective coatings using [FE SEM](#) and [Cross Section](#)

[Polisher.](#)

[Measuring the Temperature of Two Dimensional Materials at the Atomic Level](#) - Researchers at the University of Illinois at Chicago describe a new technique for precisely measuring the temperature and behavior of new two-dimensional materials that will allow engineers to design smaller and faster microprocessors. Their findings are [reported](#) in the journal *Physical Review Letters*.

See Us at These Upcoming Events

[II Simpósio de Microscopia no Cerrado](#)

August 5-8, 2018
Goiania-Go, Brazil

[Microscopy & Microanalysis \(M&M\)](#)

August 6-9, 2018 Booth #812
Baltimore, Maryland
[Register for a demo or learn more.](#)

[Microscope Dedication Symposium](#)

Fri Aug 10, 2018



University of Pennsylvania Singh Center for Nanotechnology - Philadelphia, PA

[Harvard Electron Microscopy School](#)

August 13-17, 2018
Harvard University, Cambridge, Massachusetts

[XXVII International Materials Research Congress](#)

August 19-24, 2018, Booth #2 and 28
Marriott Resort Cancun - Cancún, Quntana Roo, México

[Contact us at this link for a demo or to meet with a representative at any of our events.](#)

Full 2018 Calendar of Events

Connect with JEOL

Stay in touch with us at JEOL USA and share in the fun and some valuable information. Besides, we like to see you there!



Contact us at jeolink@jeol.com.

Our 2018 [Calendar of Events](#) is now online. See us at these upcoming conferences and meetings!

Click one of the icons below to learn more about JEOL products.



Copyright © 2018, All rights reserved.

Contact Us At:
JEOL USA, Inc. | 11 Dearborn Road | Peabody, MA 01960
Phone: 978-536-5900 | salesinfo@jeol.com

[update subscription preferences](#)

