

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

JEOLink Newsletter

APRIL 2018 | ISSUE #78



Grand Opening of UC Irvine Materials Research Institute (IMRI) to Spotlight JEOL Center for Nanoscale Solutions

Renowned Materials Scientists to Present at the 1st International Symposium on Advanced Microscopy and Spectroscopy (ISAMS)

World-renowned electron microscopists will join Dr. Xiaoqing Pan, Director of the University of California Irvine Materials Research Institute (IMRI), for the Grand Opening of the JEOL Center for Nanoscale Solutions and a three-day symposium June 6-8, 2018.

The JEOL Center for Nanoscale Solutions at IRMI is poised to become one of the world's preeminent centers of excellence for interdisciplinary research, discovery and development of engineered and natural materials, systems and devices.

IMRI is home to several of the highest performance TEMs available in the world today. It is also the first US installation of the JEOL GRAND ARM Transmission Electron Microscope developed for advanced atomic resolution characterization.

In addition, the facility also houses the JEM-2800 high throughput, nano-analysis TEM/STEM, and the JEM-2100F cryogenic and atomic level structural analysis TEM.

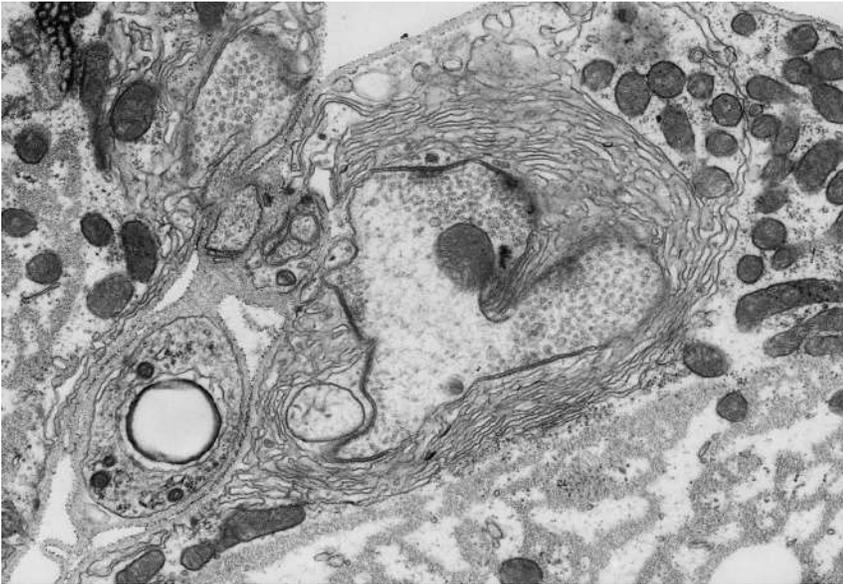
[Continued >>>](#)



JEOL Image Contest 2018

Congratulations to our Image Contest winners for February and March!

In February, Lita Duraine at Howard Hughes Medical Institute had Valentine's Day in mind when she submitted "Love Me, Love My Bouton" - a TEM image of *Drosophila* larvae. The image is a representation of a genetic deficiency construct made for *drosophila* neuromuscular junction tissue, and shows a mutant bouton synapse.



In March, Orlando Hernández, Universidad Nacional Autónoma de México, ENES - Unidad Morelia won for his "Pollen Granule" SEM image. He tells us: "The objective is to generate a scientific collection of the main floral resources used by the honey bee (*Apis mellifera*), the image has the goal of generating interest in the conservation of pollinators and their native plants emphasizing the importance of pollen as a food resource and male reproductive structure of plants. Micrograph: Dr. Orlando Hernández Cristóbal Preparation : Dr. Francisco Balvino Olvera Image processing : Biol. Daniel Ramírez Martínez.

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

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.](#)



Featured REALab: Howard Hughes Medical Institute – Electron Microscopist Lita

Duraine



As a certified Electron Microscopy Specialist at Howard Hughes Medical Institute (HHMI), Lita Duraine enjoys a unique perspective by helping investigators in the field of medical and biological discoveries. Scientists, graduate students, post-docs, and collaborators from outside her lab rely on her expertise to produce perfectly detailed images that allow them to better understand muscular and neurological systems. She has primarily used the Transmission Electron Microscope (TEM) during her time at HHMI and also at previous organizations to explore the intricate details of a fruit fly's (*Drosophila melanogaster*) physiology and the inner ear of a toad fish, all to help advance human medical research in such areas as ALS, Parkinson's, anti-gravitational studies, and even the use of stents.

[Continued >>>](#)

New IT200 - Seamless Navigation, High Throughput SEM



The new IT200 InTouchScope series are compact, versatile Scanning Electron Microscopes that provide great value with the functionality you'd only expect from high end SEMs. [Check out the new features on our website](#) and let us demonstrate its capabilities! Contact your local sales representative to arrange a demo.

Send us Your Selfie - Final Call!



We're launching a new contest showcasing "selfie" (well, we mean pictures with you and/or your group) photos with your JEOL instrument - SEM/TEM/EPMA/NMR/Mass Spec!

JEOL will award four \$100 Amazon Gift Certificates for the categories of:

- Coolest Operator/Instrument Photo
- Best Instrument Team Photo
- Vintage Charm Photo
- Serious Stuff Photo

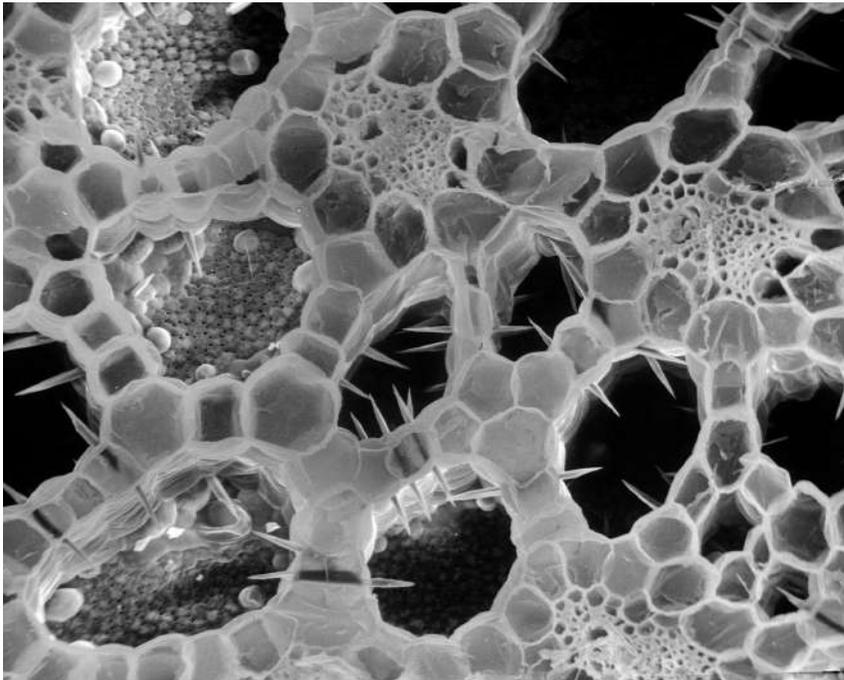
[Follow the link for more information and the entry form>>>](#)

Share the love and show your style!

We'd like to thank Ke-bin Low and Qiao Qiao for use of this amazing "selfie" style photo taken at University of Illinois Chicago, at the ARM200F TEM, to help us start the contest.

Publications and Microscopy News

[New View of Invasive Hyacinth](#) This image of the petiole of a water hyacinth, *Eichhornia crassipes*, captured by Professor Harry (Jack) Horner at Iowa State University, reveals partitioned airspace canals and cellular connective tissue with protruding calcium oxalate styloids. It was submitted to the image contest and subsequently featured in *Microscopy and Analysis*!



[Pseudo-icosahedral Cr₅₅Al_{232-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 <http://go.jeolusa.com/e/234012/2EDMaeU/57nq2/175282163?h=PaWL-g4h2UVHh6upKOcVaKIWK24EdFDDuqAzA8YW-nE> and CP <http://go.jeolusa.com/e/234012/2EDM9HS-/57nq4/175282163?h=PaWL-g4h2UVHh6upKOcVaKIWK24EdFDDuqAzA8YW-nE>

[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*.

[Newly installed, Next-generation SEM Improves Analysis of Client Samples](#) This high resolution SEM, installed in the McCrone Associates lab during December

2017, is the first instrument of its type installed outside the manufacturer's facilities. The new instrument will provide clients with improved SEM images and microanalysis for their most frequent projects without need of a separate FESEM analysis session, maximizing value and reducing project time.

[Electron Microscopy Unlocks the Answers to the Toughest Ceramics Questions](#) - Ceramics Expo News

[Understanding the Effects of a High Surface Area Nanostructured Indium Tin Oxide Electrode on Organic Solar Cell Performance](#) The newly installed ARM S/TEM University of Alberta NanoFAB was used to characterize Organic Solar Cell materials.

[Direct Detection Electron Energy-Loss Spectroscopy: A Method to Push the Limits of Resolution and Sensitivity](#) Direct detection technology has previously been utilized, with great success, for imaging and diffraction, but potential advantages for spectroscopy remain unexplored. Here we compare the performance of a direct detection sensor operated in counting mode and an indirect detection sensor (scintillator/fiber-optic/CCD) for electron energy-loss spectroscopy. [Dr. Mitra Taheri](#) of Drexel University, co-author, explained that this was a grassroots effort - the authors co-developed the instrumentation with the aid of a special development grant from NSF. They are open to collaborators who wish to work with them using the instrumentation. This work was done using a JEM-2100F Transmission Electron Microscope.

See Us at These Upcoming Events



[Ceramics Expo](#) - Booth #446 - Cleveland, OH - May 1-3, 2018

Contact [Bill Powell](mailto:Bill.Powell@jeol.com) at wpowell@jeol.com to arrange a demo on the [IT500LA SEM](#).

[CS Mantech](#) – Int'l Conf on Compound Semiconductor Manufacturing Technology - Austin, TX - May 7-10, 2018

[SAMIC 2018](#) - "5° Congreso Argentino de Microscopía - May 14-15, 2018 - Córdoba, Argentina

[Mid-Atlantic Association of Forensic Scientists \(MAAFS\)](#) - May 16-17, 2018 - Hunt Valley, MD

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](#)