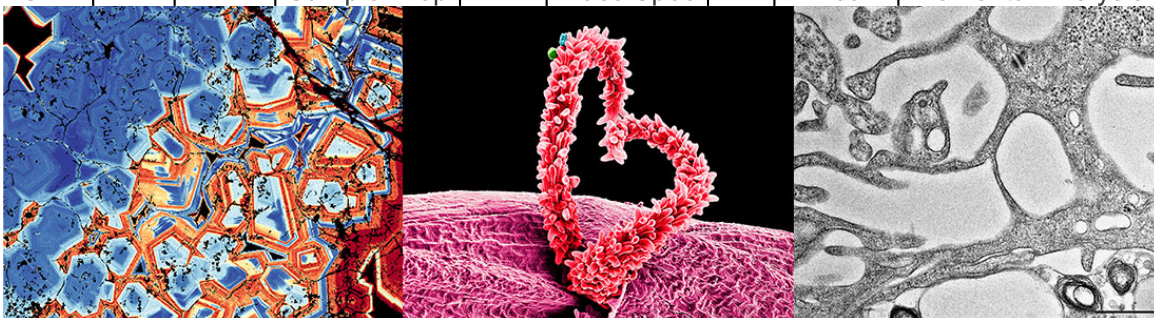


JEOL USA MICROSCOPY NEWS | APRIL 2023

SEM | TEM | EPMA | Sample Prep | NMR | Mass Spec | FIB | E-Beam | Elemental Analysis



2023 JEOL Image Contest

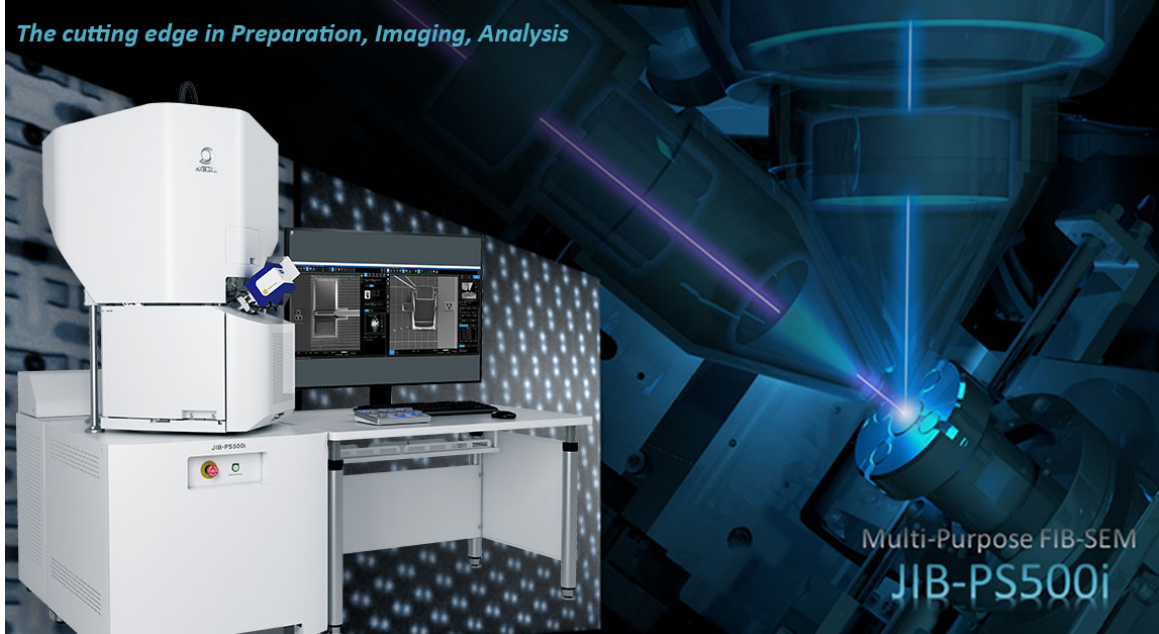
The 2023 Image Contest is well underway - with 3 winning images from EPMA, SEM, and TEM for the first part of the year. [Check out all the entries so far.](#)

January Winning Image - "Garnets Forever" Cyclic zoning of aluminum in andradite garnet from a skarn deposit, Xanthi, Greece; CREDIT: Jesse B. Walters, Goethe University Frankfurt; JXA-8530F Plus Hyperprobe (EPMA).

February Winning Image - "LOVE" Natures miracles; CREDIT: Silvia Andrade, Centro de Investigacion Cientifica de Yucatan A.C.; JSM-6360LV SEM.

March Winning Image - "Birdie" Cell contacts - Cells trying to make contacts by extending their finger-like projections; CREDIT: Siddhi Redkar, ACTREC, Tata Memorial Centre, Kharghar, Navi Mumbai; JEOL 1400 Plus TEM.

The cutting edge in Preparation, Imaging, Analysis



Announcing a New FIB-SEM for Fast, Atomic Resolution STEM Sample Preparation

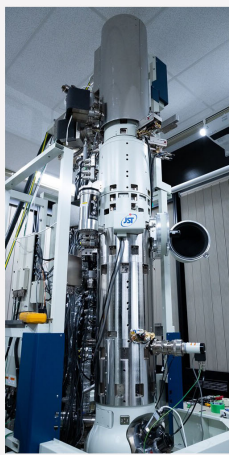
The new JIB-PS500i is a multipurpose FIB-SEM that delivers the synergy of fast sample preparation, SEM imaging and EDS analysis in a single instrument.

High Quality Fast TEM Sample Preparation

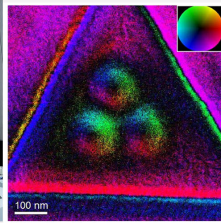
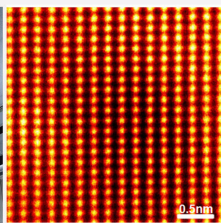
The new FIB sample stage offers fast transitioning between processing and imaging, allowing for real-time feedback of specimen quality. With the ability to prepare samples thinner than 30nm, the FIB-SEM produces a sample suitable for superior atomic resolution imaging and analysis with STEM.

[Learn more and see our new video.](#)

JEOL Collaborators renowned for their innovations with JEOL Electron Microscopes



MARS



Atomic resolution image of Fe-Si steel and DPC image of magnetic skyrmion. Naoya Shibata



The Japan Academy



Yuichi Ikuhara, Professor
Nanotechnology Center
Institute of Engineering
Innovation at
University of Tokyo



Naoya Shibata, Dr. Eng.
Director, Professor
Institute of Engineering
Innovation,
School of Engineering,
University of Tokyo



OBF Image and NeoARM

JEOL USA congratulates University of Tokyo Professor Yuichi Ikuhara and Professor Naoya Shibata, recently awarded the Japan Academy Prize for development of State-of-the-Art Electron Microscopy and their contribution to Nano Interface Technology (Joint Research). As corroborators with JEOL, their work in developing the Magnetic-field-free Atomic-Resolution STEM (MARS), Annular Bright Field (ABF), and Optimum Bright Field STEM detector (OBF) is invaluable. [Read more about their work here.](#)

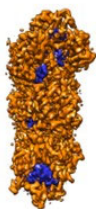
nature microbiology

Article

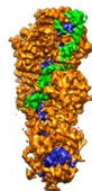
<https://doi.org/10.1038/s41564-022-01256-z>

Structure and function of a bacterial type III-E CRISPR-Cas7-11 complex

Guimei Yu, Xiaoshen Wang, Yi Zhang, Qiyin An, Yanan Wen, Xuzichao Li, Hang Yin, Zengqin Deng & Heng Zhang



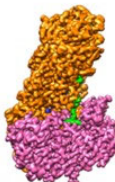
3.2 Å cryo-EM structure of Cas7-11 in complex with crRNA (CRISPR RNA)



3.5 Å cryo-EM structure of Cas7-11 in complex with crRNA and target RNA



2.8 Å cryo-EM structure of Cas7-11-crRNA-Csx29 complex (aka Craspase)



3.1 Å cryo-EM structure of Cas7-11-crRNA-target RNA-Csx29 complex

New CRYO ARM Bibliography

We never realized how many papers have been published on work done using the JEOL CRYO ARM! We've [added a bibliography to our website](#) and will update it as we learn of additional publications.

Microscopy Community Celebrates a Legend: Wil Bigelow Honored at 100th Birthday Party



Friends of Prof. Wilbur (Wil) Bigelow, Professor Emeritus at University of Michigan and Fellow of the Microscopy Society of America, threw a surprise 100th birthday party for him at the University of Michigan's Dept. of Materials Science & Engineering in Ann Arbor on March 16. (His actual birthday was March 18). Among his colleagues and past students that attended were renowned researchers Larry Allard and John Mardinly. [Read more.](#)



“It is remarkably easy to use, one can become quickly familiar with the NeoScope's capabilities and limitations.”

-JEOL NeoScope User

Simple and user-friendly, with up to 100,000x magnification and EDS analysis, the NeoScope benchtop SEM is always appreciated for how easy it is to use. [Learn more.](#)

Get to Know JEOL de México

JEOL de México continues our long history of dedication to providing support to our customers in education, research, and industry and encourage you to contact us at any time with your sales inquiries and service needs.

We are pleased to introduce our new Sales Manager, Erick Leyva. Erick is your primary contact for all sales enquiries regarding JEOL SEM, TEM, EPMA, Mass Spectrometers, and NMR Spectrometers, and manages our sales support organization. [Read more here.](#)



Glossary of TEM Terms

kikuchi pattern
zernike contrast
ceels
g-cells
annular dark-field detector
reciprocal lattice
lorenz electron microscope
phase contrast
grain boundary electron diffraction
microscopy
cbed (convergent beam electron diffraction)
twins
fraunhofer diffraction
quasicrystal
abf-stem
bragg reflection
paraxial approximation
castaing-henry filter
axi detector
monochromator
wien filter
segmentation
electron diffraction
micraed

**JEOL Customer Training
Courses and Schedule
2023**

Microscopy in the News and Recent Publications

Do you have a recent published paper or great results to share? We'd love to hear from you! Send a link to your paper to jeolink@jeol.com!

[Ultrasmall swirling magnetic vortices detected in iron-containing material](#)

[Real-space observation of a two-dimensional electron gas at semiconductor heterointerfaces](#)

[EVQ-218: A high energy nano particle that measures up to NIST standards](#)

[New advances in imaging and microanalysis of lithium-ion batteries](#)

[High-voltage cryo-electron microscopy reveals tiny secrets of 'giant' viruses](#)

[Structural insight into Tn3 family transposition mechanism](#)

[XTALAB Synergy-ED: A True Electron Diffractometer](#)

[Structure and function of a bacterial type III-E CRISPR–Cas7-11 complex](#)

[Intermetallic Nanocrystal Discovery through Modulation of Atom Stacking Hierarchy](#)



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