

To view online, please [click here](#).



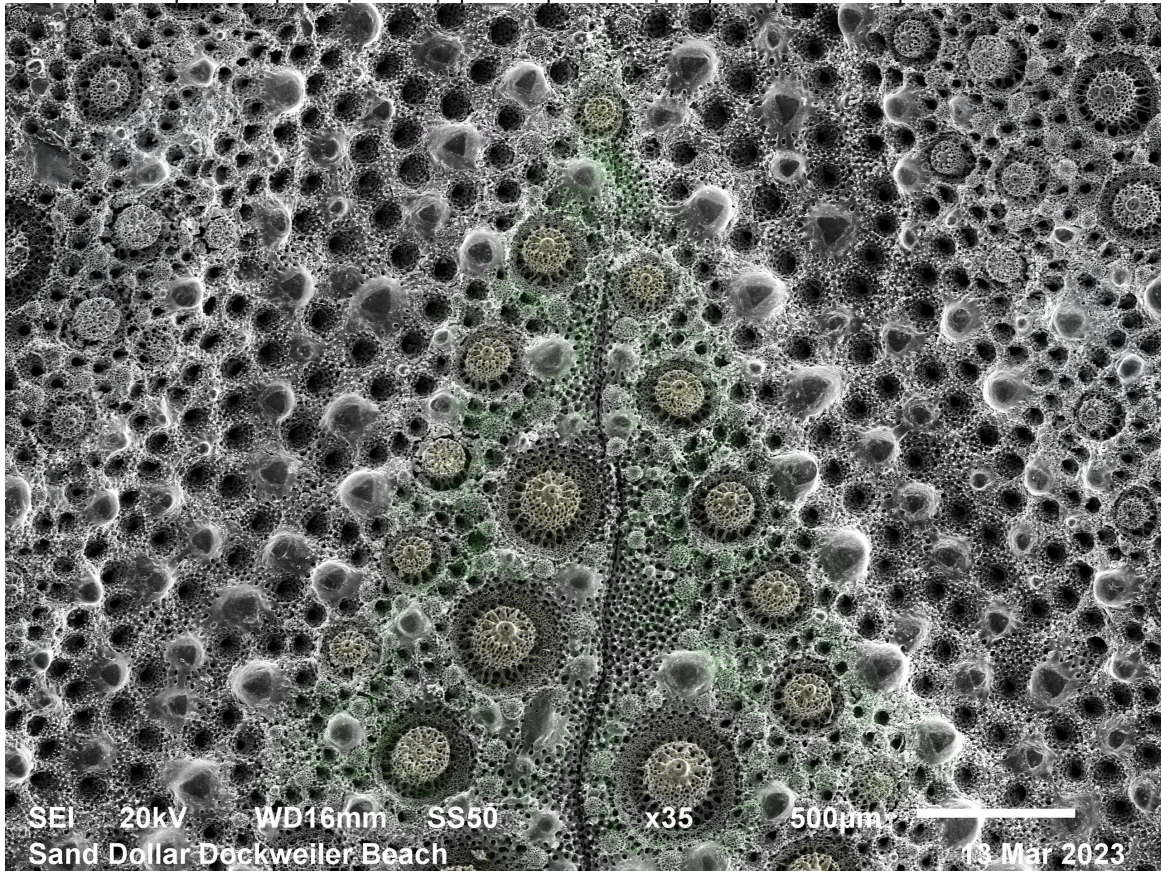
# JEOLink Newsletter

ELECTRON MICROSCOPY | ELEMENTAL ANALYSIS | SAMPLE PREPARATION



## JEOL USA MICROSCOPY NEWS | DECEMBER 2023

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

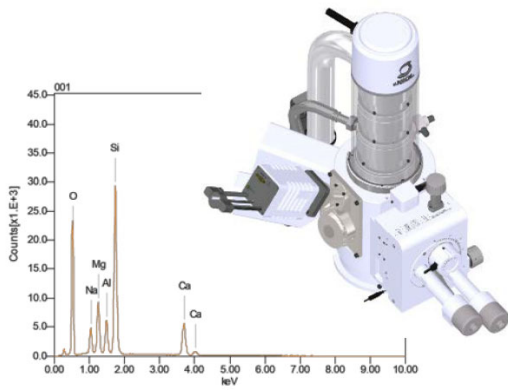


## Happy Holidays from JEOL!

Our featured holiday image resembling a tree is a SEM image of a Sand Dollar from Sheri Neva, Eurofins EAG Los Angeles.

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## An SEM User's Guide to EDS



Energy dispersive spectroscopy, [often integrated into SEM systems](#), is a qualitative and quantitative analytical technique for elemental analysis. Our latest blog highlights EDS and advances in sensitivity and resolution, especially in detecting low-energy X-rays making it possible to explore new frontiers in materials science and nanotechnology. [Read more.](#)



*SEM Image of MXene taken by Armin VahidMohammadi.*

## Focus On MXenes, Materials, And Scanning Electron Microscopy

MXenes are a family of 2D crystalline nanomaterials that are just a few atoms thick and have jagged accordion shapes that when colored, can look like goldfish, bouquets of flowers, dinosaurs, and even sunsets. We've seen a number of MXene images recently, so talked to the experts about their work in developing these new materials with energy storage potential. [Read the blog here](#) and see more examples of MXene images.

Introduction to Scanning Electron Microscopy and Energy Dispersive X-ray Spectroscopy for Advancing Materials Research

Monday, February 26, 2024 1:00 PM to 5:00 PM

Introduction to Scanning Electron Microscopy and Energy Dispersive X-ray Spectroscopy for Advancing Materials Research

Monday, February 26, 2024 1:00 PM to 5:00 PM (America/Vancouver)

Short Course Office - Room 6A

Short Course

Instrumentation & Nanoscience

Add to my schedule

**Information**

If you can see it, you can analyze it! Features at the micro to nano scale as well as the distribution of components can help predict product performance. For this reason, scanning electron microscopes (SEM) are indispensable tools used in research and

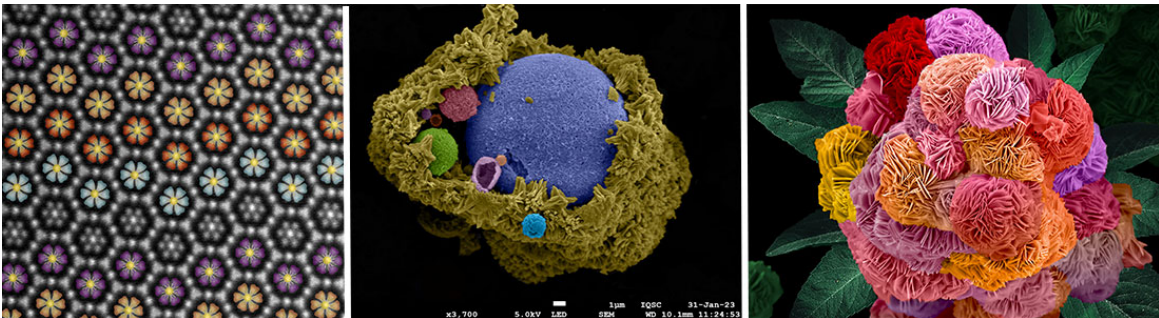
**Speakers**

Donna Gosselin  
JEOL USA

# Introduction to Scanning Electron Microscopy and Energy Dispersive X-ray Spectroscopy for Advancing Materials Research

If you can see it, you can analyze it! Join our expert Donna Gosselin to learn how. Register now for her Short Course at PITTCON 2024, Feb 26 1-5PM in San Diego.

"Introduction to Scanning Electron Microscopy and Energy Dispersive X-ray Spectroscopy for advancing materials research" will sharpen your SEM knowledge. See it all demonstrated on the [NeoScope](#) Benchtop SEM in our booth. [Click here for information and registration](#)



## Congratulations to our Image Contest Winners!

**September "Atomic Daisy"** - Atomic structure of LLZO solid electrolytes; CREDIT: Hongkui Zheng, University of California, Irvine; JEM-ARM300F Grand ARM TEM

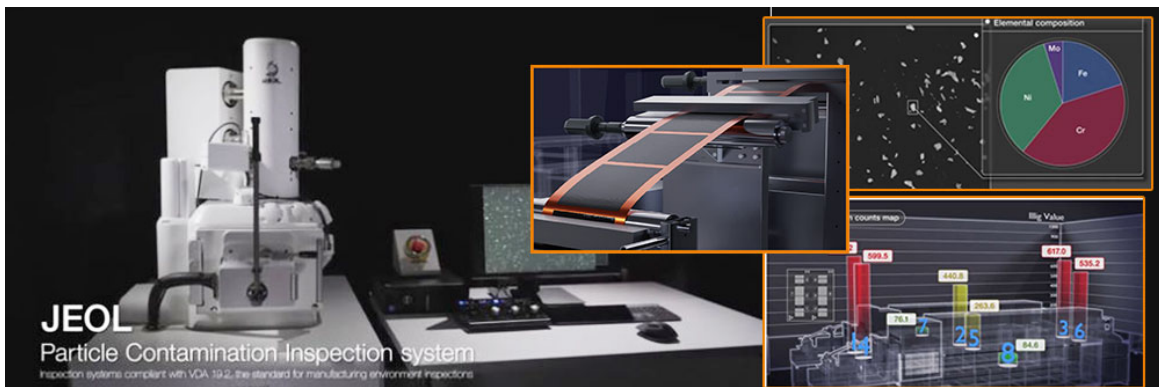
**October "Birth of World"** - Alumina silicate after reaction with 0.1M sodium hydroxide at reflux for 5 hours; CREDIT: Marcio de Paula, University of São Paulo; JSM-7200F FE SEM

**November** "Flower power" - Vanadium oxide nano structure synthesized from two-dimensional vanadium carbide MXenes; CREDIT: Yeonjin Baek, Auburn University; JSM-7000F FE SEM

Stay tuned for announcement of the December winner and the Grand Prize SEM/EPMA and TEM winners for 2023. Visit the [Image Contest page here](#) for more images and descriptions.

## 2024 Image Contest Announced

We launched the JEOL Image Contest in 2014 and each year since we've had some sensational entries. To kick off our 11th year we are raising the prize level to \$200 for the monthly winner and \$500 for each Grand Prize winner at the end of the year. Thanks to all who have participated. We hope to see more entries in 2024.



## JEOL Battery Solutions - Particle Contamination Inspection

Particle Contamination Inspection during the manufacture of Lithium-Ion Batteries is crucial to meeting clean automotive standards. Scanning Electron Microscopy with automated Particle Contamination Inspection software and Energy Dispersive X-Ray Spectrometry (EDS) determines composition and morphology of sub-micron particles to identify the root cause of contamination and improve product safety and yield. [Review our new video and applications brochure.](#)

## Featured Papers and Microscopy News

*What Are the Advantages of a FE-EPMA or FE-SEM (Even When Not Analyzing Submicron Features at Low kV and High Beam Current)?* [\[Link to Article....\]](#)

*Incommensurate Grain-Boundary Atomic Structure* [\[Link to Paper....\]](#)

*High Tech Methods Unlock the Perplexing Structural Features of a Mineral*  
[\[Link to Paper....\]](#)

*Deep Learning Driven De Novo Drug Design Based on Gastric Proton Pump Structures*[\[Link to Paper....\]](#)

*Revealing the Latent Atomic World through Data-Driven Microscopy*[\[Link to Paper....\]](#)

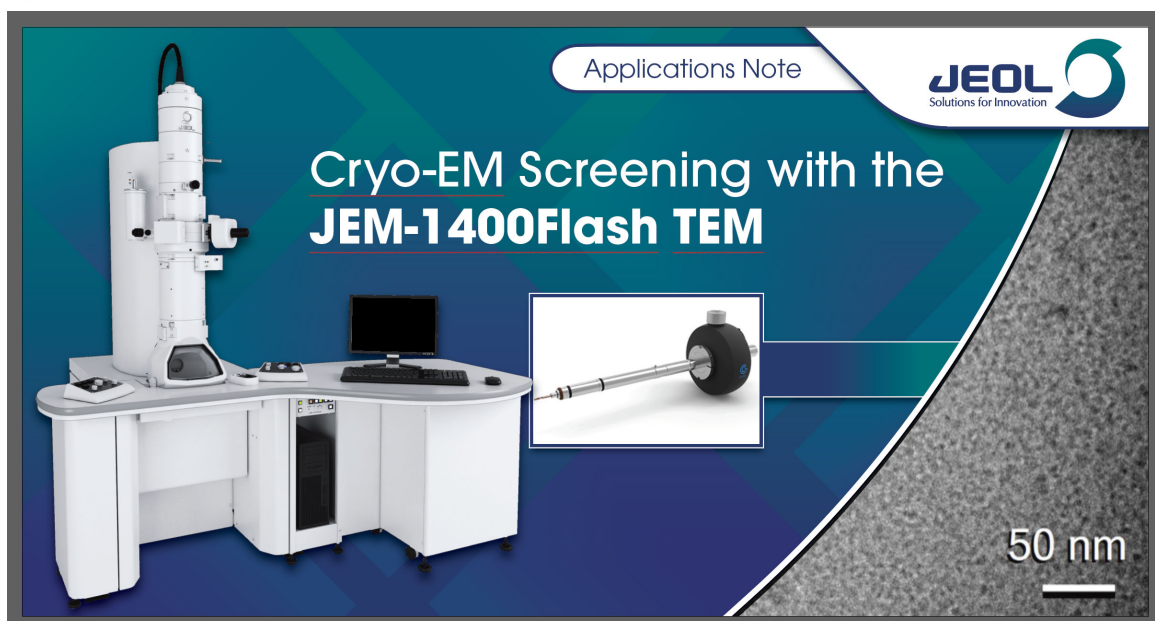
*Selective Glucose Oxidation to Glucaric Acid Using Bimetallic Catalysts: Lattice Expansion or Electronic Structure Effect?*[\[Link to Paper....\]](#)

*Virtual Microscopy - Nature Experience Radical Design (NERD) Jam*[\[Link to Paper....\]](#)

*Cryo-EM structures of human zinc transporter ZnT7 reveal the mechanism of Zn<sup>2+</sup> uptake into the Golgi apparatus*[\[Link to Paper....\]](#)

**CRYO ARM Bibliography**[\[Link to PDF\]](#)

Do you have a published paper or news to share related to your applications with the JEOL microscopes? Please let us know! Contact [jeolink@jeol.com](mailto:jeolink@jeol.com).



Applications Note

**Cryo-EM Screening with the JEM-1400Flash TEM**

JEOL  
Solutions for Innovation

50 nm

Screen your cryo-EM samples on a JEOL [JEM-1400Flash](#) with a Gatan ELSA holder before running them on higher-end cryo-microscopes, such as the JEOL CRYO ARM. Learn more in this [applications note](#).



Learn how JEOL is committed to sustainable development goals

## View JEOL Webinars on Demand

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