



## **JEOL 2017 Image Contest - December**

Congratulations to Megan McCuller for her winning image of a marine ciliate protist (suctoria).

While researching bryozoans, marine organisms, from the unprecedented transoceanic biological rafting event caused by the 2011 Japanese tsunami, Megan McCuller found the opportunity to use an SEM at a nearby college in Maine. She produced this winning image of a suctorian, an aquatic organism she was simply interested in seeing up close and then decided to try colorizing. She also took more than 30 images for her research, some of which will be published in January. [Read more about her work in our latest blog!](#)

Congratulations to Sergey and Alexander Simchenko for their image of the morphology of galium arsenide nanocrystalline surface entitled Stone Flowers.

Sergey, who is located in the Ukraine, has won the JEOL Image contest with several of his images in previous years, including the 2016 Grand Prize SEM image. He is engaged in research of solid state physics, surface physics, catalysis and nanotechnology and defended his thesis and received a PhD in Physics and Mathematics (phd degree) in September.

### **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.

### **Order your 2018 JEOL Image Contest Calendar**

Start the year off right with a JEOL 2018 Image Contest Calendar! This will be our 4th calendar featuring the winning images selected each month of the calendar year. Order ahead so you'll be sure to receive a copy. [Click here to order.](#)

## **Development of a New FE-SEM with Unprecedented Performance and Usability**

On May 30, 2017, JEOL announced a new FE-SEM with ultrahigh spatial resolution and superior usability - the [JSM-7900F](#). JEOL has been active in the Field Emission SEM market since 1977. Now, 40 years later, new R&D efforts have resulted in a lightning-fast, easy-to-operate, ultrahigh resolution SEM for a wide array of applications and users. [Learn more about how the new control theory and "NeoEngine" came to be.](#)

## Recent Publications and Microscopy News

**[Many More Bacteria Have Electrically Conducting Filaments](#)** Microbiologists led by Derek Lovley at the University of Massachusetts Amherst, who is internationally known for having discovered electrically conducting microfilaments or “nanowires” in the bacterium *Geobacter*, announce in a new paper this month that they have discovered the unexpected structures in many other species, greatly broadening the research field on electrically conducting filaments.

**[“Carboranyl-cysteine”—Synthesis, Structure and Self-Assembly Behavior of a Novel  \$\alpha\$ -Amino Acid](#)** - Numerous biological processes are dependent upon the inherent ability of some molecules to spontaneously self-assemble into highly ordered constructs which confer functional attributes, or which serve as the etiological agents in disease progression and pathogenesis. FE-SEM images show the self-assembled constructs formed from air evaporation of saturated ethanol and saturated water.

**[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 Tahiri](#) 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.

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## Customer and Engineer Training at JEOL

The training never ends at JEOL - we offer extensive training for customers as well as require it of our engineers. Recently we had two groups of service engineers getting advanced training on SEM and TEM in one lab, and a third group learning about the new IT500HR at our Peabody headquarters.

Our **2018 Customer Training Class Schedule** is now online. [View it here.](#)

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## EPMA Workshop November 2017 - Plus Upcoming Events

There was a great turnout for the end of November EPMA Workshop at Penn State held by Dr. Katherine "Kat" L Crispin, Materials Characterization Lab. Also shown with Kat are Pete McSwiggen and Vern Robertson from JEOL.

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

### Connect with JEOL

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