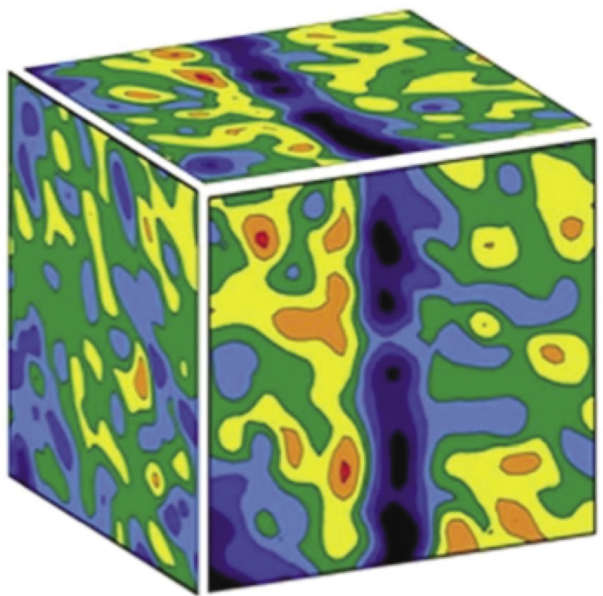
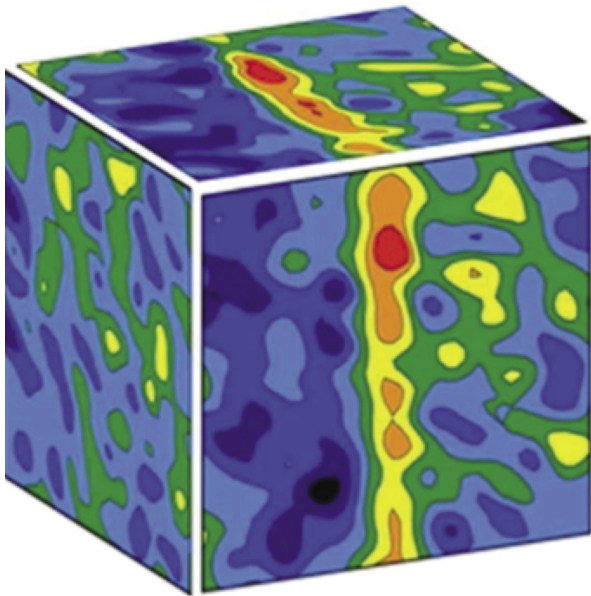
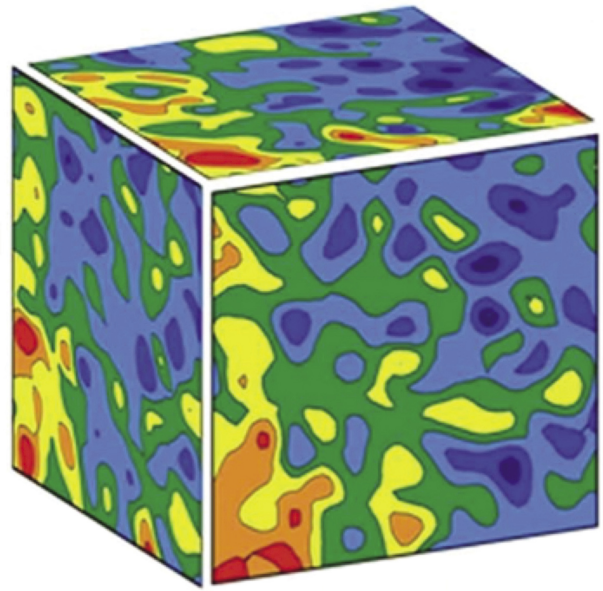
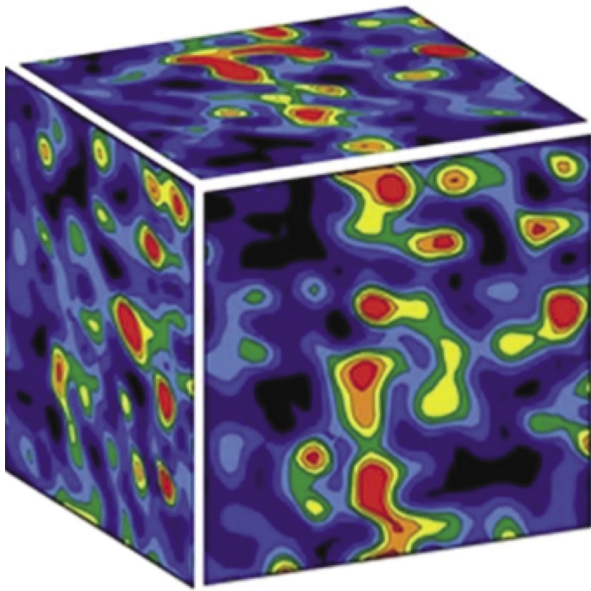


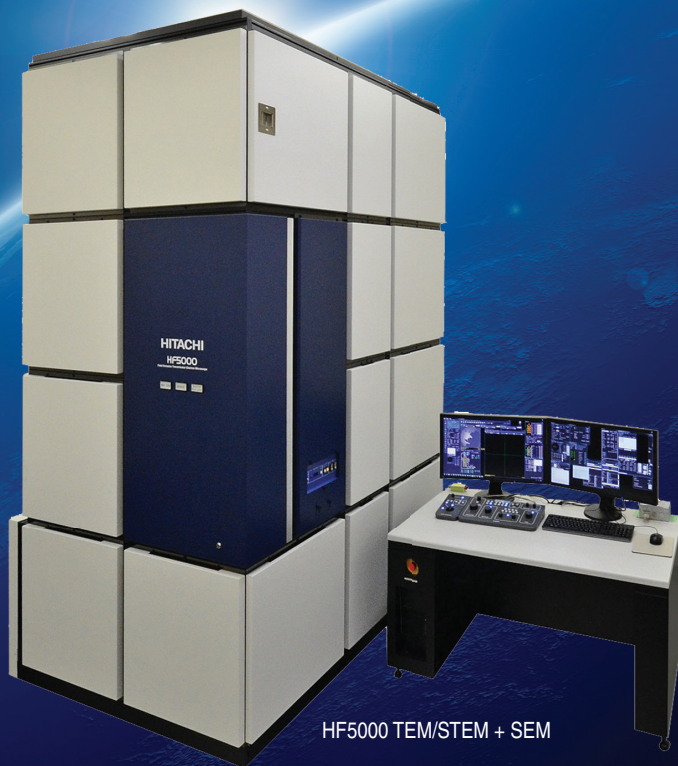
# Microscopy TODAY

Volume 25 Number 3 2017 May



# *The HF5000 200 kV Cold FEG Aberration-Corrected TEM/STEM + SEM*

*The Innovative 200 kV TEM/STEM + SEM Is Here!*



HF5000 TEM/STEM + SEM

## **Three imaging modes (TEM/STEM + SEM) integrated into one system with automated aberration correction**

The Hitachi HF5000 TEM/STEM + SEM with aberration-corrected STEM/SEM accommodates simultaneous acquisition of surface and transmission images at sub-atomic resolution. Surpassing traditional TEM/STEM imaging, the HF5000's proprietary SE capability can image surfaces of both transmissive and bulk samples while providing simultaneous EDS analysis. Hitachi's own highly automated and probe-forming aberration correction is designed specifically to make sub-Å imaging easy.

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# Think Outside the Lab

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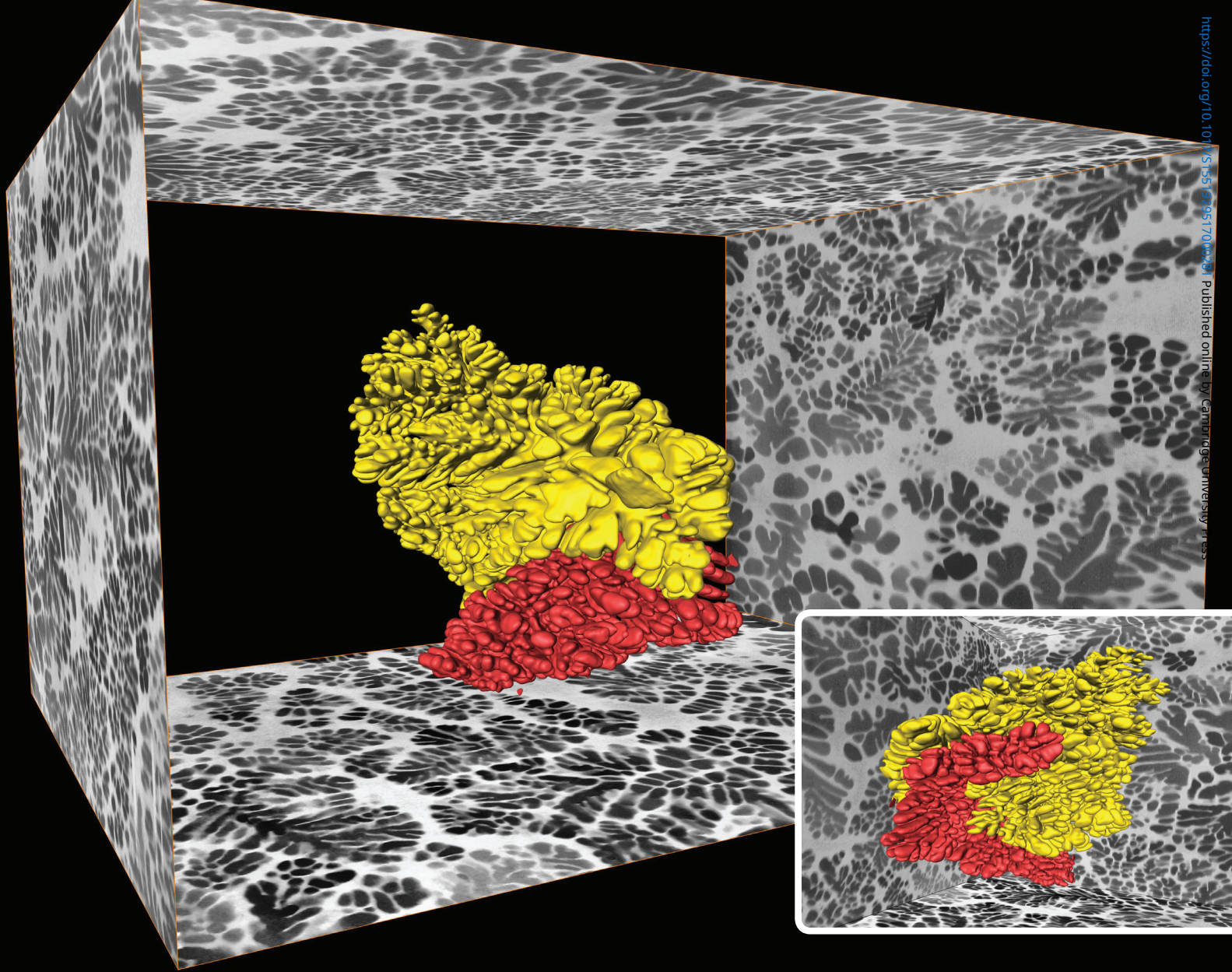
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FEI Avizo® 3D visualization of two large adjacent crystalline dendrites of a bulk-metallic-glass matrix composite ( $Zr_{58.5}Ti_{14.3}Nb_{5.2}Cu_{6.1}Ni_{4.9}Be_{10}$ ). Data was obtained by large volume serial sectioning tomography using the Helios PFIB DualBeam. The sectioned block is about  $90 \times 80 \times 70 \mu m^3$ . Sample from The University of Tennessee, USA. Images courtesy of The University of Manchester.

## Large 3D volumes with unprecedented surface resolution

Until recently, available technologies have limited the volumes and depths of materials that can be analyzed at high resolution, ultimately restricting the insight into structural, crystallographic, and chemical properties. This is no longer the case. The Helios™ PFIB DualBeam™ offers unrivaled access to regions of interest deep below the surface—combining serial section tomography with statistically relevant data analysis.

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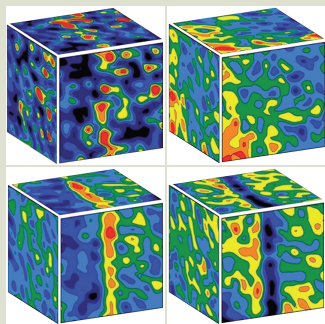
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### About the Cover



Atom probe concentration maps in the vicinity of a grain boundary in Nd-doped ceria. Clockwise from upper left: Al, Ce, O, and Nd. Lowest concentration = black; highest concentration = red. Width of cube = 16 nm.

See article by Kelly and Panitz

# OneView Camera

10 nm

Gatan's award winning OneView camera sets the standard for imaging samples sensitive to beam damage or drift.

"My review would go something like this:

★★★★★ **Awesome camera**  
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This has been a great 4k camera for low-dose imaging. The low-dose imaging capabilities of the camera and the option for drift correction work great together! To be honest, I assumed the drift correction option would be something that I would never use. ... In reality, I have gotten **the best HRTEM** images from my samples using the drift correction option. ... This camera has given new life to my elderly TEM!

**I would buy this camera again!**

– Thomas M. Rea, Senior EM, 35 years

See how real-time drift correction allows you to record images before the sample stops drifting and guarantees the highest quality images at the lowest total dose, every time.

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