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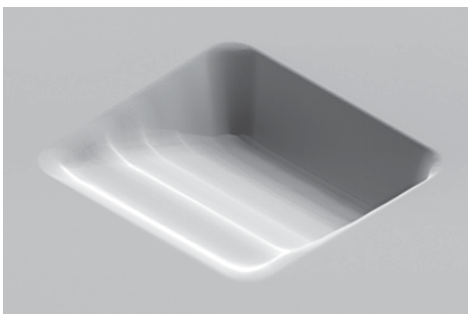
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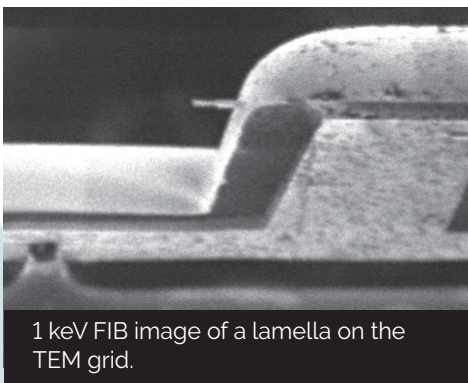
Anticipating the future, expanding your possibilities today

Orage™ FIB column: Prepare for the new level in sample preparation

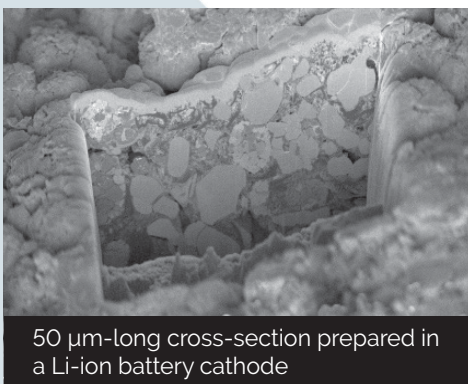
- Next generation of Ga source FIB column and a guarantee of world-class quality in sample preparation
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- High ion beam currents up to 100 nA enabling fast sputtering rates for maximum throughput and minimum time-to-result



Cross-section 50 µm wide prepared with an ion beam current of 85 nA.



1 keV FIB image of a lamella on the TEM grid.



50 µm-long cross-section prepared in a Li-ion battery cathode



S 8000

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cryo immuno the optimized cryo diamond knife for the Tokuyasu technique.

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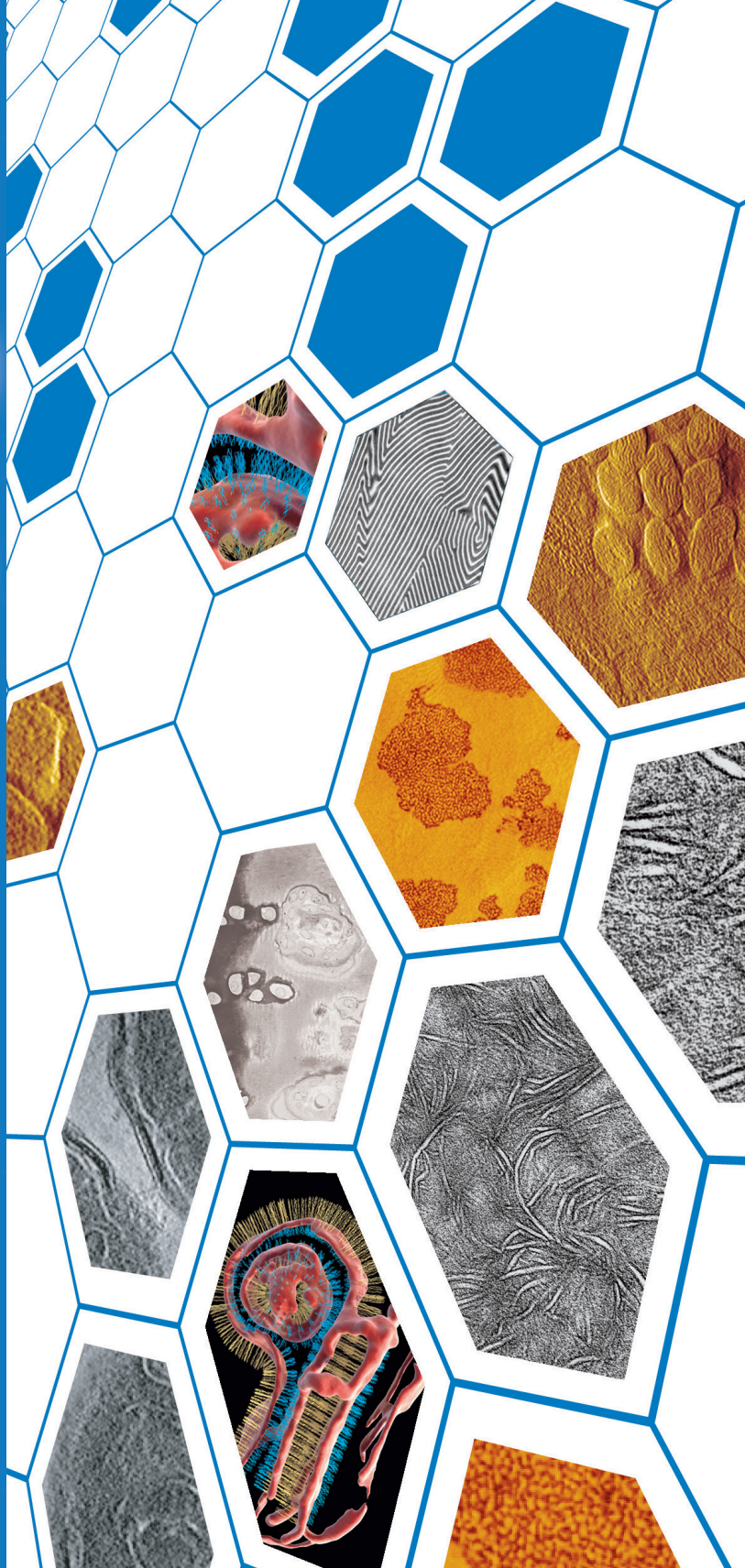
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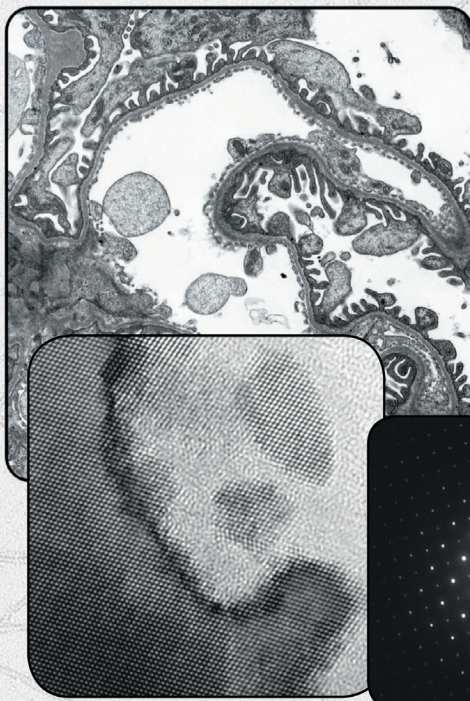
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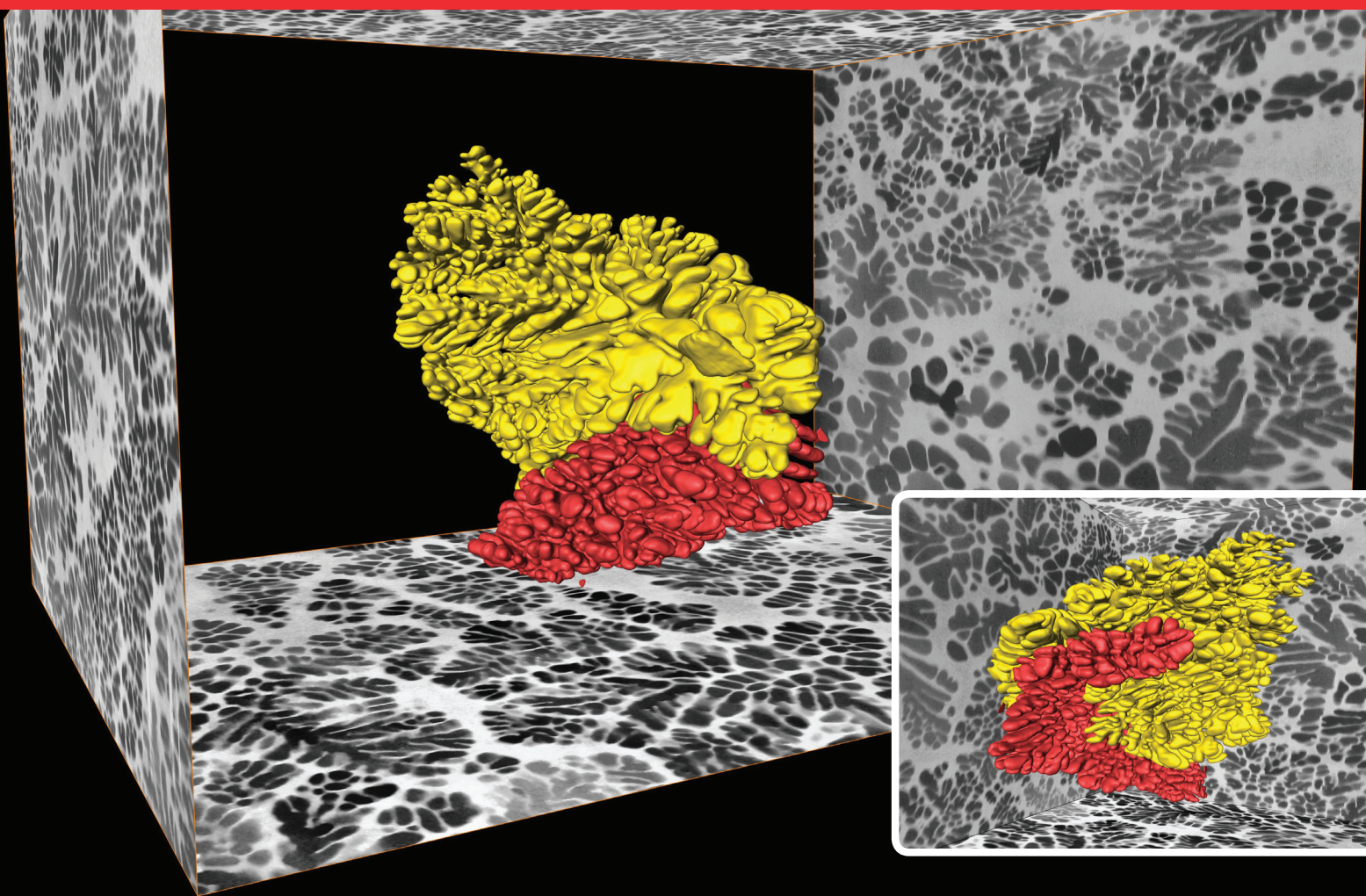
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Thermo Scientific™ Avizo™ 3D visualization of two large adjacent crystalline dendrites of a bulk-metallic-glass matrix composite ($Zr_{58.5}Ti_{14.3}Nb_{5.2}Cu_{6.1}Ni_{4.9}Be_{11.0}$). Data was obtained by large volume serial sectioning tomography using the Thermo Scientific™ Helios™ PFIB DualBeam™ microscope. 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

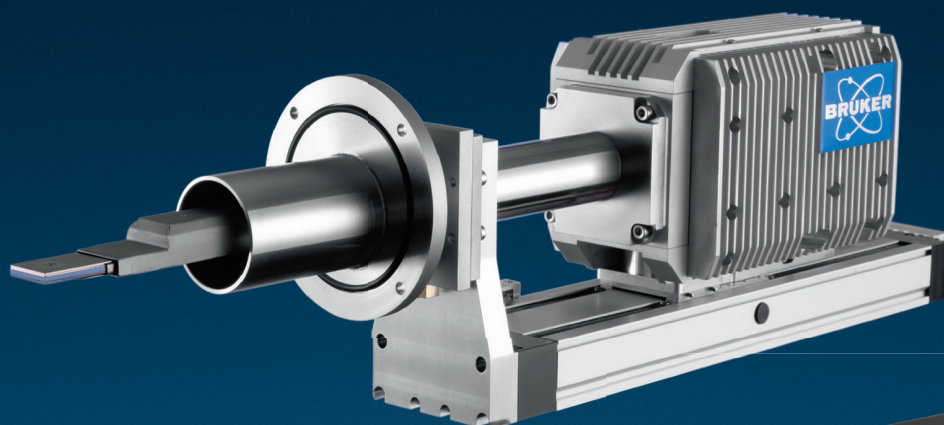
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A close-up photograph of a ZEISS Sigma 300 scanning electron microscope (SEM) with the RISE (Raman Imaging) module. The image shows the intricate details of the instrument's head, including various cables and connectors. The RISE module is prominently displayed, with the ZEISS logo visible on its side. The background is a soft, out-of-focus white.

Extend your knowledge.

ZEISS Sigma 300 with RISE

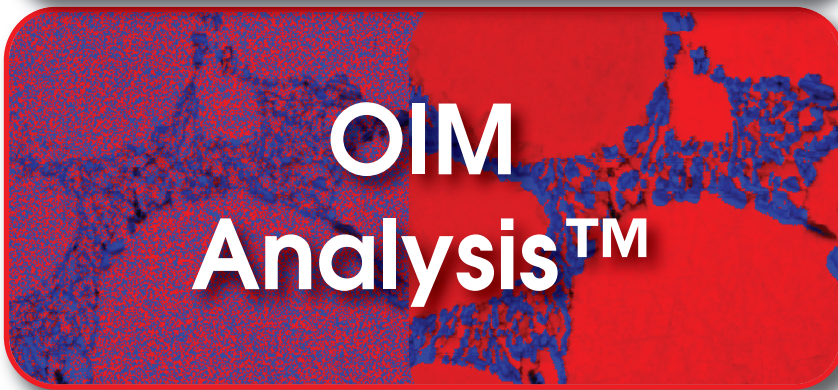
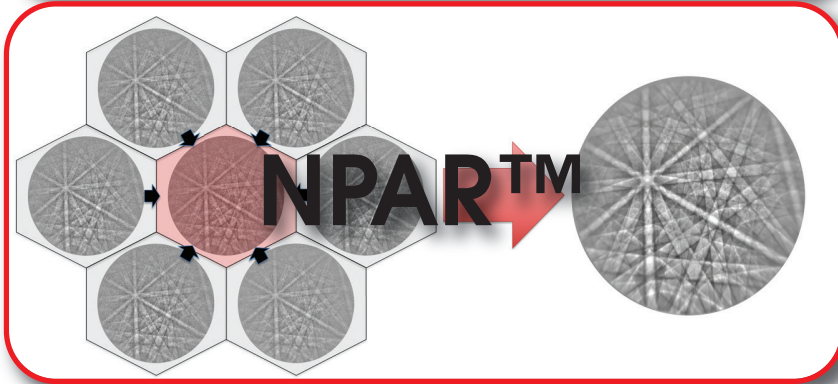
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Sample Preparation of Nanocomposites and Nanomaterials by *Ultramicrotomy*

a Powerful Alternative to FIB

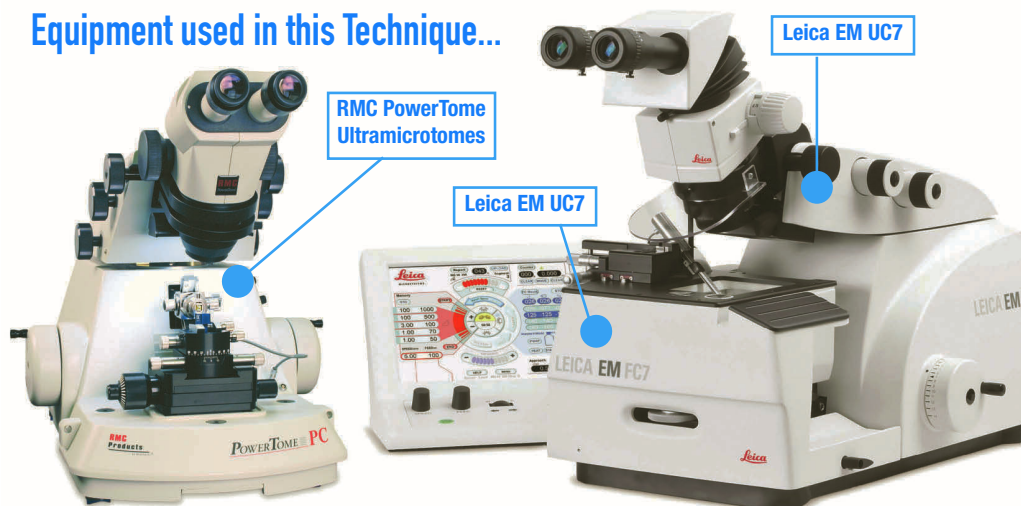
Join us at the **EMS Microscopy Academy** and learn the latest techniques to reveal internal structures of composites and polymers being investigated with transmission electron microscopy (TEM) and scanning transmission electron microscopy (STEM).

Sample preparation workflow will be illustrated using the Leica EM UC7 Ultramicrotome, its EM FC7 Cryochamber, and the RMC PowerTome Ultramicrotome. Differences between FIB (Focussed Ion Beam) and ultramicrotomy samples will also be covered.

Who can benefit from this alternative?

- Composite and polymer research companies - especially from the automotive and aviation industries
- Materials scientists already working with ultramicrotomy
- FIB users preparing TEM lamellas

Equipment used in this Technique...



DiATOME trimtool

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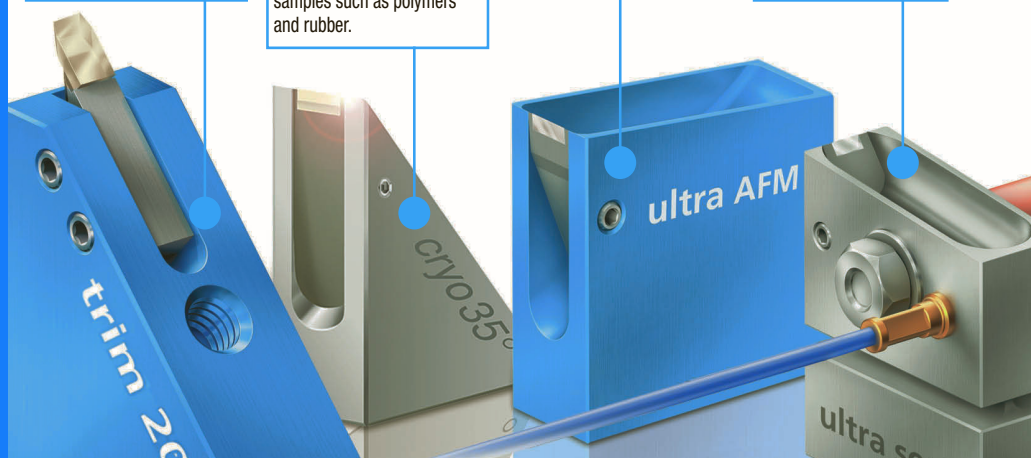
sectioning of cryo-protected specimens, frozen hydrated specimens and industrial samples such as polymers and rubber.

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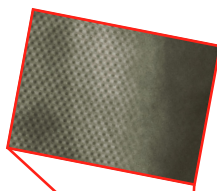
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Rigid polymers such as PS, PMMA, ABS, HIPS, modified PP, etc.

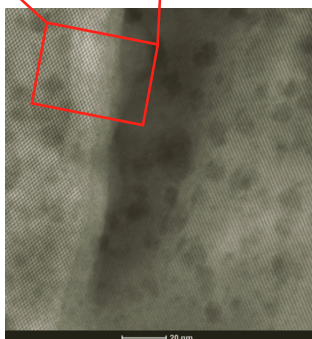


Applications...

Zeolite USY30 Crystal morphology STEM analysis



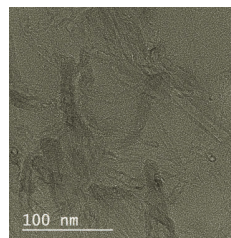
The mesopores (2-50 nm) and the crystalline micro-pores (0.7 nm) are clearly visualized.



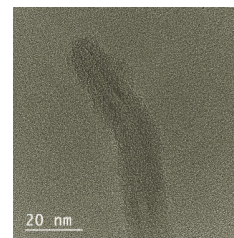
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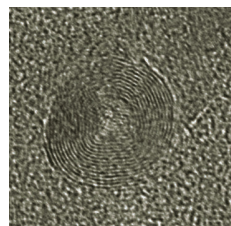
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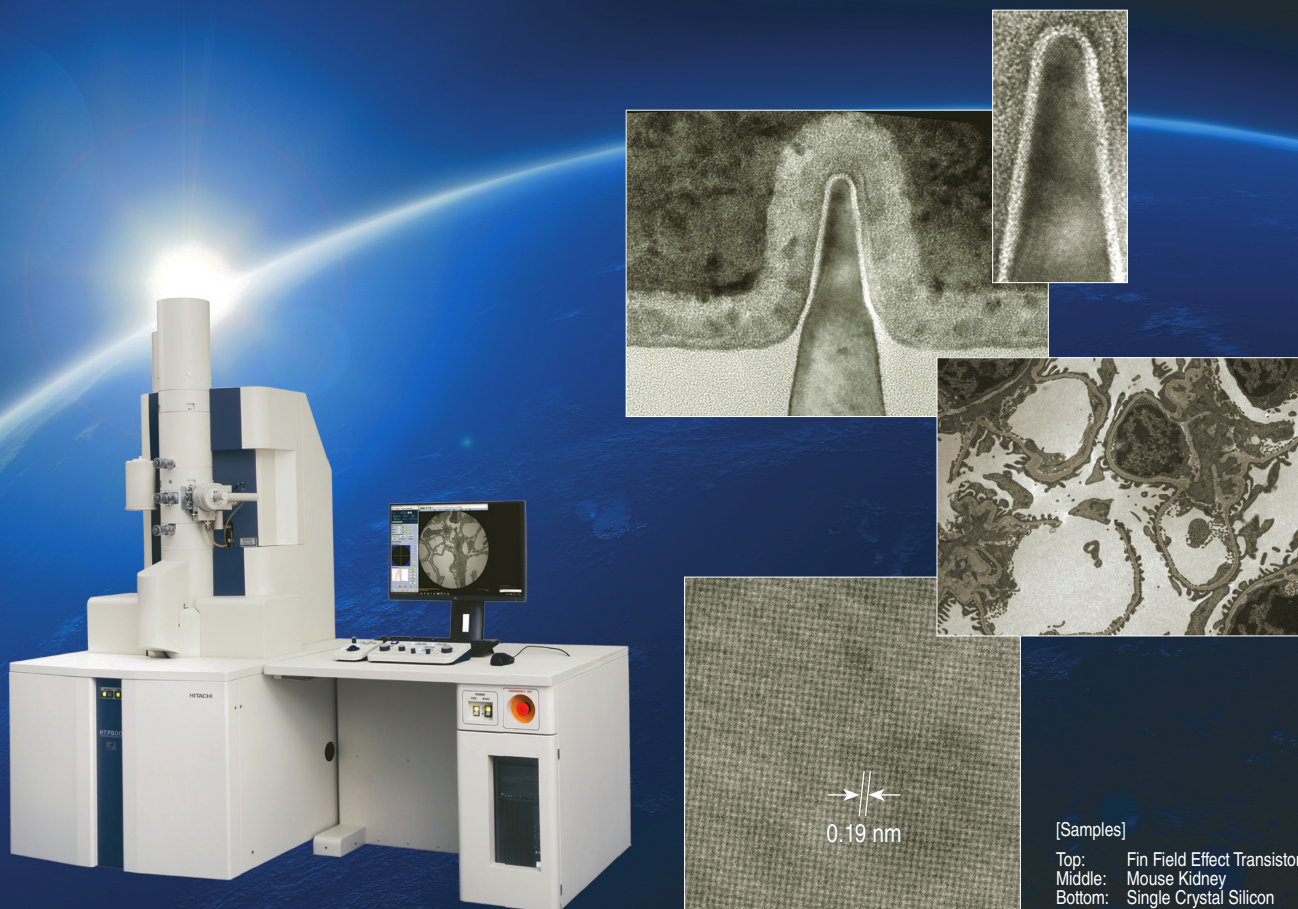
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