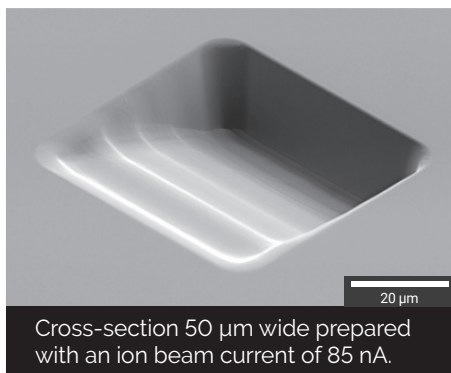
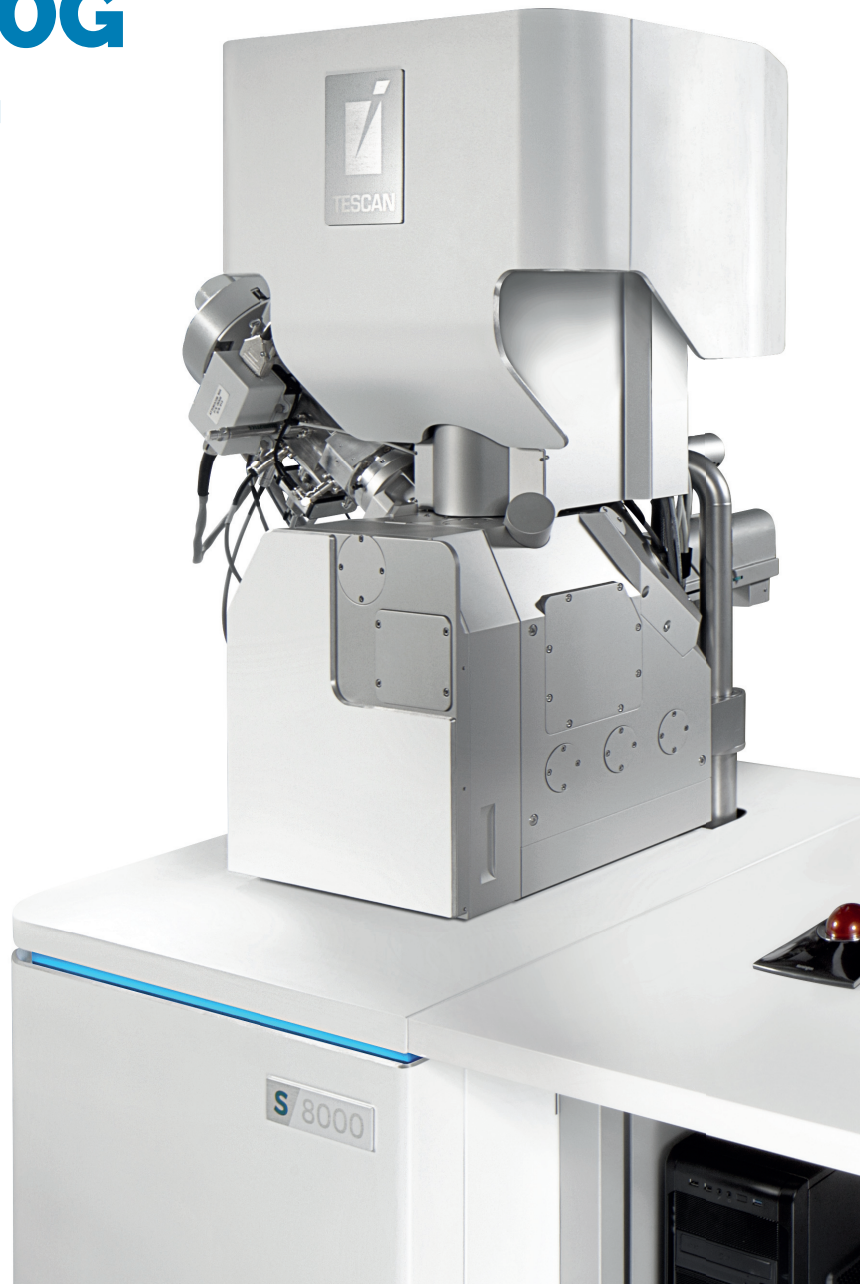


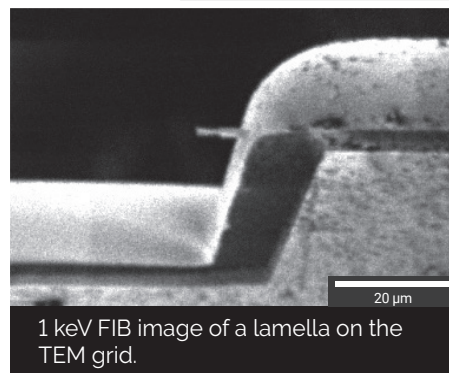
TESCAN S8000G

and novel Orage™ FIB column

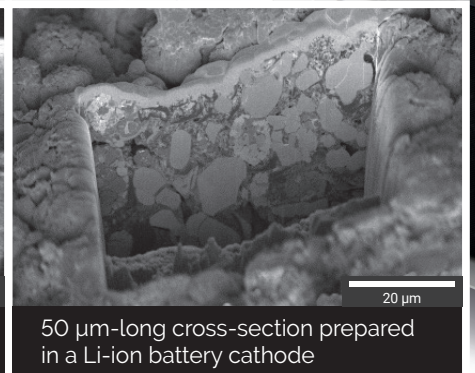
- Next generation of Ga source FIB column and a guarantee of world-class quality in sample preparation
- Cutting-edge ion beam optics delivering improved resolution at low beam energies for damage-free ultra-thin TEM specimens
- High ion beam currents up to 100 nA enabling fast sputtering rates for maximum 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



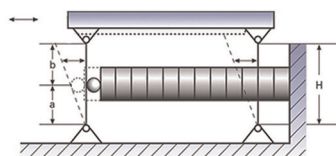
For more information visit www.tescan.com

Nano-Positioning for Microscopy & Imaging



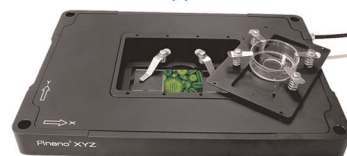
PIFOC® nano-focusing drive

Piezo stages & positioners are essential tools for high-resolution microscopy, such as Super Resolution Microscopy or AFM. Their sub-atomic resolution and extremely fast response allow researchers to create higher-quality images faster. PI provides a large variety of fast positioning stages and piezo objective nano-positioners for 3D imaging (Z-stack acquisition), fast-focusing applications, and light sheet microscopy.



Piezo flexure actuators excel in applications from fast nano-dosing to precision alignment.

Affordable XY & XYZ Piezo Stages for SR Microscopy: P-545 PInano®



PI

Physik Instrumente
www.pi-usa.us
 508-832-3456 (East)
 949-679-9191 (West)

PI designs and manufactures precision motion systems at locations in the USA, Europe, and Asia. With over 40 years of experience developing standard and custom products based on piezoceramic and electromagnetic drives and more than 1,000 employees in 13 countries, PI can quickly provide a solution for your positioning and automation projects in industry and research.



PRECISION | SPEED | STABILITY - MOTION CONTROL & POSITIONING SOLUTIONS

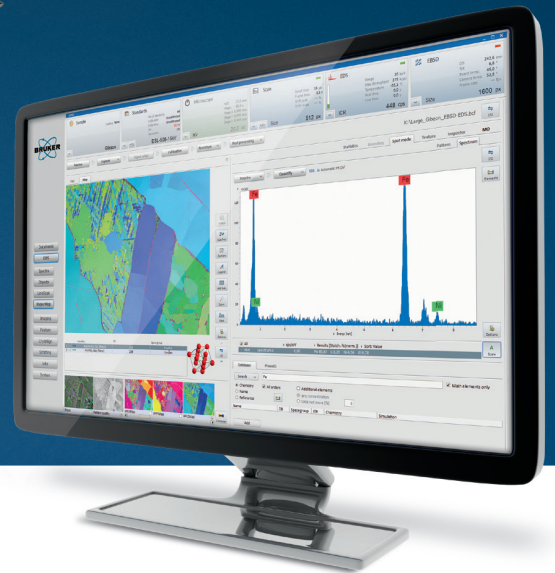
INDEX TO ADVERTISERS

Bruker Nano	A13
Diatome	Cover 3
EDAX, Inc.	A10
Electron Microscopy Sciences, EMS	Cover 2, A5
Hitachi	Cover 4
Physik Instrumente	A12a
Tescan	A11
Thermo Fisher Scientific	A6
ZEISS	A3

QUANTAX EBSD - Featuring OPTIMUS™ TKD, ARGUS™, ESPRIT QUBE and PicoIndenter®



Unique Solutions for EBSD and TKD



- Fastest simultaneous EBSD/EDS analysis
- OPTIMUS™ - EBSD and TKD with one detector
- Unique ARGUS™ FSE/BSE imaging system
- ESPRIT QUBE for advanced 3D analysis of EBSD/EDS data
- **NEW** Quantitative in-situ nanomechanical testing with Hysitron SEM PicoIndenter®



www.bruker.com/quantax-ebsd

Innovation with Integrity

EBSD



Cambridge Core

The new home of
academic content
[cambridge.org/core](https://www.cambridge.org/core)

Cambridge Core



CAMBRIDGE
UNIVERSITY PRESS

**40 YEARS OF DEVELOPMENT,
MANUFACTURING,
AND CUSTOMER SERVICE...**

...and still innovating

Free customer service

Sectioning tests with biological and material research specimens of all kinds. We send you the sections along with the surfaced sample, a report on the results obtained and a recommendation of a suitable knife. Complete discretion when working with proprietary samples.

Re-sharpening and reworking service

A re-sharpened Diatome diamond knife demonstrates the same high quality as a new knife. Even knives purchased in previous years can continue to be re-sharpened. The knives can be reworked into another type of knife for no extra charge, e.g. ultra to cryo or 45° to 35°.

Exchange service

Whenever you exchange a knife we offer you a new Diatome knife at an advantageous price.

DiATOME U.S.

P.O. Box 550 • 1560 Industry Rd. • Hatfield, Pa 19440
Tel: (215) 412-8390 • Fax: (215) 412-8450
email: sgkcck@aol.com • www.emsdiasum.com

DiATOME

diamond knives

*ultra 45° • cryo • histo • ultra 35°
histo jumbo • STATIC LINE II • cryo immuno
ultra sonic • ultra AFM & cryo AFM*

NEW!... trimtool 20 and trimtool 45

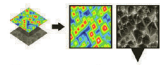
*Finally, one trimming tool for all of your
trimming needs, be it at room or
cryo temperatures.*

**the highest quality...
the most precise sectioning...
incomparable durability**

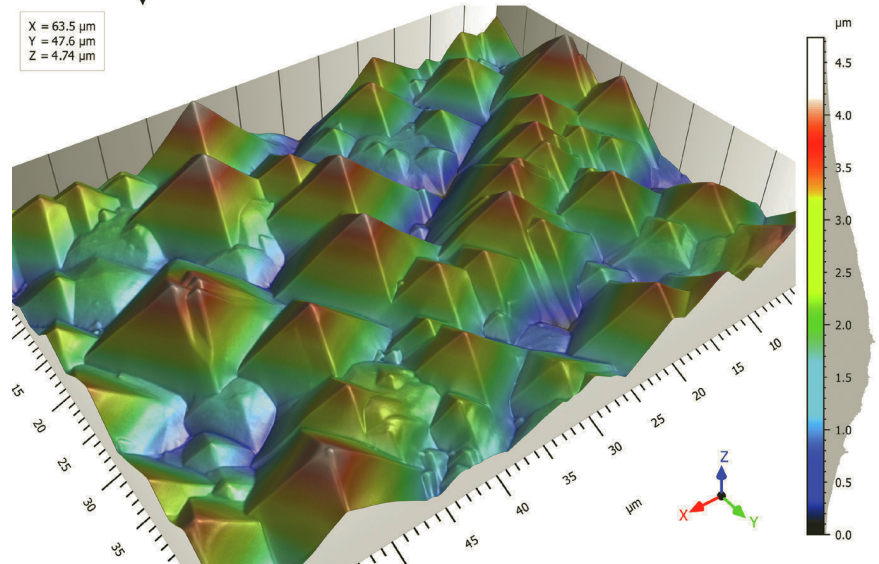


The Optimal Solution for Quick & Easy SEM Surface Analysis

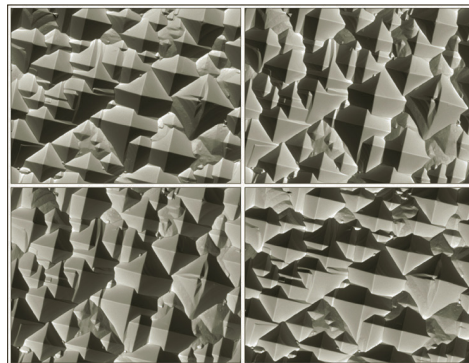
Hitachi map 3D is a unique surface analysis software solution developed by Digital Surf for Hitachi with their 25 years of experience with metrology technology. Hitachi map 3D makes surface analysis with the SEM fast, accurate, and easy.



X = 63.5 μm
Y = 47.6 μm
Z = 4.74 μm



- ✓ 4-BSE Reconstruction
- ✓ Stereo Pairs Reconstruction
- ✓ Single Image Reconstruction
- ✓ Measures height, slope, angles, and roughness parameters based on ISO, ASME, and many other international standards
- ✓ Available in multiple languages



Height Parameters		
Sq	1.38 μm	Root-mean-square height
Ssk	0.148	Skewness
Sku	2.63	Kurtosis
Sp	4.32 μm	Maximum peak height
Sv	4.07 μm	Maximum pit height
Sz	8.39 μm	Maximum height
Sa	1.12 μm	Arithmetic mean height
Functional Parameters		
Smr	0.642 %	Areal material ratio
Smc	1.88 μm	Inverse areal material ratio
Sxp	2.45 μm	Extreme peak height
ISO 12781		
Flatness Parameters		
FLTt	5.40 μm	Peak-to-valley flatness deviation of the surface
FLTp	2.58 μm	Peak-to-reference flatness deviation

*Digital Surf is a registered trademark of Digital Surf Corporation.

Think Outside the Lab

www.hitachi-hightech.com/us

Hitachi High Technologies America, Inc.
microscopy@hitachi-hita.com
1-800-253-3053



Science for a better tomorrow