

SEMPrep2 Compact

High-quality and site-specific sample preparation for SEM application



- Cross-sectional sample preparation by slope cutting in 90° and 30° angles using dedicated sample holders
- Final polishing and cleaning of traditional SEM and EBSD samples
- Load-lock system for faster, easier and safer sample exchange
- High-energy ion gun for rapid milling
- Optional ultra-high-energy ion gun, recommended for ion milling of extra hard materials and for extreme fast milling
- Automated parameter settings and operation
- Sample rotation and oscillation
- Real-time monitoring of the milling process by high-resolution CMOS camera and TFT monitor

DESCRIPTION

The SC-2100 Compact model is equipped with a high-energy ion source. Rapid slope cutting with the high-energy ion gun provides cross-sectional SEM samples for semiconductor industry, material sciences, geology and other scientific and industrial purposes. The system also delivers a solution to improve and clean mechanically polished SEM samples and to prepare damage-free surfaces for EBSD measurements. The new 16 keV ultra-high-energy ion source is more powerful and has a higher sputtering rate than before.

SPECIFICATIONS

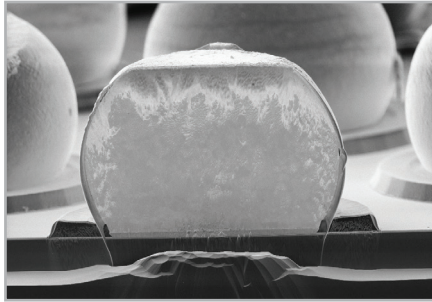
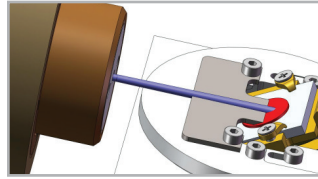
- Ion source
 - high-energy ion gun operating up to 10 keV or
 - ultra-high-energy ion gun operating up to 16 keV (optional)
- Sample stage

Sample size:	slope cutting sample holder (available with 30° and 90° tilted platforms) for 30° holder: max. 42 mm (l) x 16 mm (w) x 5.5 mm (th) for 90° holder: max. 20 mm (l) x 16 mm (w) x 7.0 mm (th) sample holder for surface cleaning using 3 different head types: flat head type: max. Ø33,5 mm x 8 mm standard type: max. Ø33,5 mm x 9 mm hollow type 1: max. Ø26 mm x 21 mm hollow type 2: max. Ø32 mm x 19,5 mm
Sample tilting:	0° to 30° in 0.1° increments
Sample rotation:	in-plane rotation, 360°
Sample oscillation:	in-plane oscillation from ±10° to ±120° in 5° steps
- Sample cooling
 - LN₂ cooling to prepare heat-sensitive samples (optional)
 - Peltier cooling to protect the samples from thermal overrun (optional)
- Vacuum system
 - Oil-free diaphragm and turbomolecular pumps with combined (Pirani/Penning) vacuum gauge
- Gas supply system
 - 99.999% purity argon
 - High-precision working gas flow control
- Imaging system
 - High-resolution CMOS camera with fix zoom
- Computer control
 - Easy-to-use graphical interface, automated ion source setup, milling parameter setting and operation control

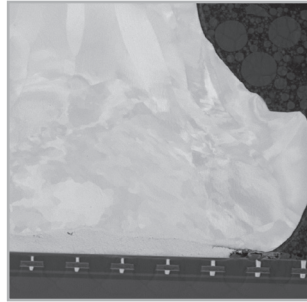
APPLICATIONS

ION BEAM SLOPE CUTTING

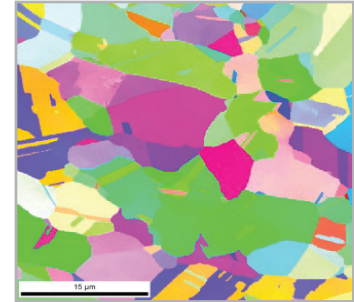
To produce excellent quality planar cross-sections of different solid state materials for SEM/EBSD imaging and microanalysis.



Sn-Ag solder ball grid array (BGA)



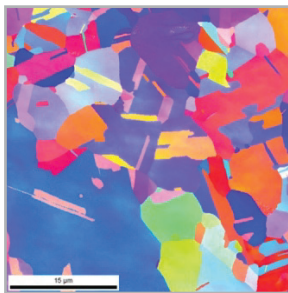
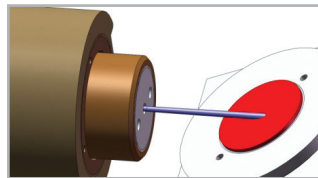
Metal wire bonding



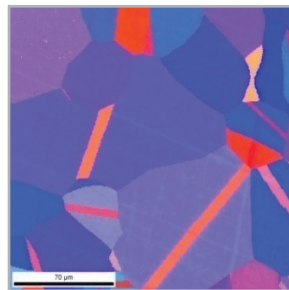
EBSD image (OIM) made on an as-cut surface of copper

FINAL POLISHING

To produce samples for Electron Backscatter Diffraction (EBSD) study and Orientation Imaging Microscopy (OIM).



Copper



Nickel



Martensitic steel



Limestone

