



Field emission gun scanning electron microscope

Zeiss Sigma FEGSEM

High-resolution field emission gun scanning electron microscope for chemical, phase and texture analysis.

Features and benefits

- Very high resolution imaging in various imaging modes in order to capture topographic and compositional information (and combinations thereof)
- Clear images beyond 50,000x magnification to characterise materials from micron to nanometre scale
- Rapid mapping of elemental distribution
- Semi-quantitative chemical analysis for identification of elemental composition
- Fast electron backscatter diffraction for phase, grain size, strain and texture analysis

Some applications

- High-magnification identification of fracture morphology to identify causes of specimen failure in different materials, including metals, polymers and ceramics
- Powerful characterisation tool for high-resolution metallography, including quantitative phase distribution analysis
- Faster and more accurate failure analyses
- Examination of etched and unetched cross-sections to identify small-scale microstructural features

Technical specification

- Schottky electron source to support high-resolution imaging in secondary electron, in-lens and backscatter electron modes
- Oxford Instruments X-Max² silicon drift detector for fast energy-dispersive X-ray spectroscopy (EDX) chemical analysis, including chemical distribution mapping
- Oxford Instruments NordlysMax electron backscatter diffraction (EBSD) detector for phase distribution, strain, and crystallographic texture analysis
- Automated EBSD and chemical analysis, including simultaneous EBSD and EDX data acquisition

