Scanning electron microscopy and chemical analysis

Keywords

Scanning electron microscopy (SEM), electron diffraction spectroscopy (EDS), chemical microanalysis, texture analysis, orientation analysis, electron back-scattering diffraction (EBSD), variable pressure mode.

Function

The various SEM facilities at the DPMC allow high resolution scanning electron microscopy, morphological observations, EDS, chemical microanalysis in the micrometer range, crystallographic orientation contrast and texture analysis by electron backscattering diffraction. Using variable pressure mode allows SEM studies of insulating samples (ceramics, polymers, semiconductors).

Present use

The facilities are dedicated to investigations in materials science, physics, microtechnology, and are available to universities as well as to industrial partners.

Specifications

SEM: Leo 438 VP (1998)

- resolution:
  high vacuum mode:
  SE Resolution 4 nm
  variable pressure mode: BSD
  resolution 6.0 nm
- magnification: 15 to 300'000x
- W-filament
- accelerating voltage:
  300 V to 30 kV
- variable pressure range:
  1 to 400 Pa
- probe current: 1 pA to 500 nA
  adjustment: continuous
- specimen stage:
  type: 5 axis motorised cartesian
  movements:
  x = 100 mm (±50 mm)
  y = 125 mm (+75 mm, .50 mm)
  z = 60 mm (34 mm motorised)
  tilt = 0° to 90°
  rotation: 360° continuous

EDS detector: Noran instruments
EBSD System: Oxford Link OPAL

Contact

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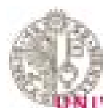

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