IBEC

Institute for Bioengineering of Catalonia

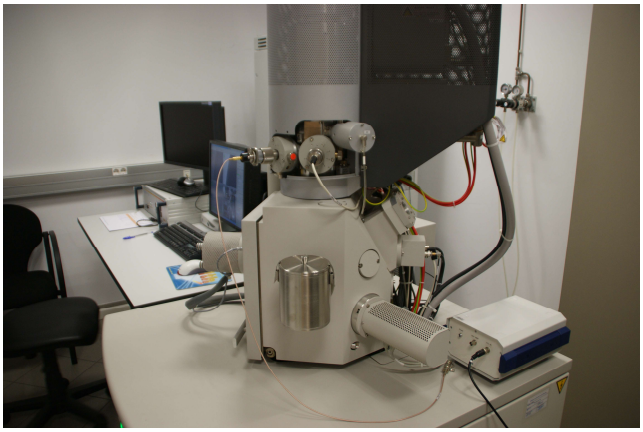
Microscopy

Core Facilities

Manufacturer
FEI Company

Model
NOVA NanoSEM 230

Scanning Electron Microscope



High resolution imaging

This equipment allows operating in two vacuum modes (high vacuum and low vacuum), to inspect conducting and also insulating samples.

It can:

- Observe conductive, semiconducting and insulating samples.
- Collection of:
    - Secondary electrons, for surface morphology and topography.
    - Backscattered electrons, for imaging with contrast according to elemental composition.

Technical specifications

Detectors

- Everhart-Thornley detector (ETD) used in combination with HiVac mode allows the detection of secondary electrons.
- Through-the-lens detector (TLD) used in combination with HiVac mode allows the detection of secondary electrons (TLD-SE) to obtain images of Ultra High-Resolution.
- Backscattered electron detector (vCD) for high contrast images at low potentials in both HiVac and LoVac. Used for imaging the sample topography and composition.
- Low vacuum detector (LVD) used in combination with LoVac mode allows the detection of secondary electrons for use with semi-conductive and non-conductive samples without metal coating**.**

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Optics

- High stability Schottky field emission gun.
- Beam deceleration mode with sub-100 V and high surface sensitivity imaging.
- Beam landing energy: 500 V - 30 kV
- Resolution at optimum working distance in HiVac:
  - 1.0 nm at 15 kV (TLD-SE)
  - 1.6 nm at 1 kV (TLD-SE)
- Probe current: 0.6 pA to 100 nA

Vacuum

- Chamber vacuum:
  - HiVac < 1e – 4mbar
  - 0.10 mbar < LoVac < 1.30 mbar
- Evacuation time (HiVac) < 2.5 minutes.