NANO
Research Infrastructure

Field Emission Gun-Scanning Electron Microscope	**Category:** **C. Particle Characterisation in and ex-situ** **Institute: VITO** **Location: Boeretang 200, 2400 Mol, Belgium** **Contact Details of Technology Expert:** **Rosita Persoons** **Phone: +32 (0)14 335730** **Fax: +32 (0)14 321186** **E-mail: rosita.persoons@vito.be**

Short technology description

The JEOL JSM-6340F field emission gun-scanning electron microscope (FEG-SEM) has a good lateral resolution, because it has a field emission electron source and a so-called semi in-lens configuration. The device is also highly suitable for so-called low voltage SEM. This makes it far easier to observe details on the outer surface of the material, and moreover it renders the application of metallic layers onto non-conductive samples unnecessary.
By expanding the SEM with a Bruker Quantax 200 Micro Analysis System system for energy-dispersive spectrometry of the characteristic X-rays (EDS or EDXA), the imaging can be linked to element analyses at sub-micron scale in a point, along a line or across a surface.

Main Features (Equipment Capabilities):

- 2.5 nm resolution at 1 keV; 1.2 nm resolution at 15 keV
- semi-in-lens detector for secondary electrons (SE)
- conventional detector for secondary electrons (SE)
- Centaurus detector for back-scattered electrons (BSE)
- automated sample platform
- LN_2 free SDD detector (30 mm² active are) for EDXA
- energy resolution < 129 eV
- detection of all elements from B(5) to Am (95)
- qualitative and standardless quantitative spectra analysis
- multiple point analyses and element maps
- image processing and image analysis

Typical Samples & Images:

Any further Information: