High Resolution Field Emission Scanning Electron Microscope & EDS Spectrum

HR FESEM at Center for Nanoscience & Nanotechnology JMI

High resolution field emission scanning electron microscope is used for imaging nanostructures with spatial resolution (1.4nm). It provides high magnification, large depth of focus, great resolution and ease of sample preparation and observation. Electrons generated from an electron gun enter the surface of a sample and generate many low energy secondary electrons. The intensity of these secondary electrons is governed by the surface topography of the sample. An image of the sample surface is therefore constructed by measuring secondary electron intensity as a function of the position of the scanning primary electron beam. In addition to secondary electrons imaging, backscattered electrons imaging and Energy Dispersive X-ray (EDX) Analysis are also useful tools widely used for qualitative and quantitative (i.e. spatial distribution of elements) elemental information respectively.

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