

**Measurement of:** Surface Morphology and elemental identification

**Equipment:** Focused Ion beam (FIB) Microscope (FESEM -FIB crossbeam system)

**Property Measured:** High resolution imaging (FESEM)  
Elemental analysis (EDS)

**Photograph (small size)**



**A combined focused ion beam microscope**

**Basic Principle:** Field emission scanning electron microscope (FESEM) is a type of electron microscope that produces high resolution images of a sample by scanning it with a focused beam of electrons. The electrons interact with atoms in the sample, producing various signals that contain information about the sample's surface topography and composition.

**Capabilities:**

**Imaging:** The imaging method used in FIB combines microscope is similar to that in the scanning electron microscope. In the most common detection mode, the secondary electrons emitted from very close to the specimen surface are captures to produce high resolution images of sample surface.

**EDS:** This technique detects X-rays emitted from the sample during bombardment by an electron beam to characterize the elemental composition of the analyzed volume.

**Sample Requirement:** Semiconducting / Conducting (Application dependent)