Measurement of: Surface microstructural analysis of solid state materials

Equipment: Field Emission Scanning Electron Microscope

(Make: Zeiss; Model: Supra 40VP)

Property Measured: Surface Morphology and Elemental Analysis

Photograph (small size)

Basic Principle:

Electrons are coming out from a field emission source and are focussed by electromagnetic lenses. The produced narrow beam impinges the object. The impingement results the generation of secondary electrons, back scattered electrons, characteristic X-rays etc. The angle and velocity of these electrons can be detected by suitable detectors and give information about the surface structure and morphology of the specimens. A field-emission electron gun provides narrow beams at low and high electron energy which gives improved spatial resolution and minimized sample charging.

Capabilities: Surface morphology & Elemental analysis (EDS)

Sample Requirement: Solid samples 10 × 10 mm square/ Dia 10 mm