

SCANNING ELECTRON MICROSCOPE (SEM) With EDS



Make	Model
Philips, Netherlands	ESEM EDAX XL-30

Brief Description:

Scanning Electron Microscope XL 30 ESEM with EDAX: Resolution : upto 2 0A; Acc. voltage: 30 kV; Magnification: upto 2,50,000x

- ❖ A versatile electron microscope that combines high vacuum, low vacuum and Environmental modes into one instrument
- ❖ Highly flexible
- ❖ Capability of operation at higher gas pressure in the chamber, pure secondary electron detection and full compatibility with water vapor, to prevent hydrated samples from drying out
- ❖ Important for study of surface topography
- ❖ EDS system is important for chemical analysis at micro level and has better resolution for qualitative and quantitative analysis

Specifications:

- ❖ Electron optical system:
 - Emission current: 0 to 200 μ A
 - Accelerating Voltage: 0.2 to 30 kv
 - Resolution: With LaB₆ filament 2nm at 30 kv, With W filament 3.5nm at 30 kv

- ❖ Scanning system:
 - Magnification: 10x to 400000x or higher
 - Automatic scaled micron marker

- ❖ Specimen handling:
 - Eucentric goniometer stage
 - Specimen movement: X=50mm, Y=50mm
 - Rotation: n x 360 degrees
 - Z movement: 25mm internal & external

- ❖ Electron Detectors:
 - Secondary and back scattered electron detectors

Applications:

- ❖ ESEM + EDS is useful for R & D work on structural as well chemical studies of various alloys, carbon fibers, semiconductor compounds and cell structures of different biological samples, etc.

Surface and Structural Materials Analysis:

Microstructural characterization includes the analysis of materials, polymers, films, coatings, pharmaceuticals, raw materials, metals, plastics, ceramics, glass, food, dust, contaminants and other products. The SEM labs provide elemental analysis of solid samples, impurities, and the identification of physical and chemical defects. The laboratories provide analytical expertise to support research, failure analysis, troubleshooting, quality control and other requirements.

Energy Dispersive X-ray Analysis:

SEM/EDXA analysis of small particles by scanning electron microscopy and energy dispersive X-ray analysis (EDXA) is possible without destruction or injury to the sample. SEM/EDXA provides qualitative elemental analysis and element localization on samples being analyzed