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Scanning Electron Microscopy (SEM)

Scanning Electron Microscopy (SEM) is an electron microscopy technique based on the principle of electron-matter interactions, capable of producing high-resolution images of the surface of a sample.

The SEM is composed of an electron gun creating an electron beam, a column of electromagnetic lenses, backscattered electron detectors nd secondary electron sensors.

The electron beam sweeps the surface of the sample and the image reconstituted point by point, because of the emission of secondary electrons.

Since its appearance, the scanning electron microscope (SEM) has proven to be a powerful tool for characterizing materials, in particular for the surface shap, topography, grain size of metals, observation of defects (cracks, damage, fractures, etc...) porosity, shapes and distribution of charges in polymers, observation of nanomaterials or biological cells.

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