Summary of the Talk:

Scanning Electron Microscope (SEM) is used to scan the surface of the sample with a focused beam of electron to produce sample images. The electrons are emitted by the electron gun to interact with atoms in the sample, creating various signals that comprises of information of the surface topography of the sample. In the most common SEM mode, secondary electrons (SE) emitted by atoms excited by the electron beam are detected using a secondary electron detector. Another type of signal is reflected or back-scattered electrons (BSE). With the narrow electron beam, SEM micrographs have a large depth of field providing clear image with 3D appearance useful for identifying the surface structure of a sample. With current SEM at ITC (Model JEOL IT-500), a wide range of magnifications is possible from 30 times to 300,000 times. This model is also equipped with Energy Dispersive Spectroscopy (EDS), which is able to identify the different inorganic elements present in the sample.