MICROSCOPY

Scanning Electron Microscope

ZEISS
EVO MA10

The ZEISS EVO MA10 is a high-resolution scanning electron microscope (SEM). It is used in different fields of application especially in materials science.

This instrument allows to analyse samples of massive material or with coatings, fractures on small components (failure analysis).

Moreover, it provides the study of engineered materials, such as alloys, coatings and multi-layer nanostructures.

It is possible to obtain topographic information from the samples thanks to the high-vacuum secondary electron detector, as well as compositional information thanks to the high- and low-vacuum backscattered electron detector.

The ZEISS EVO MA10 is able to work both at high vacuum and at variable pressure, thus allowing the analysis of all conductive or non-conductive materials.

It also features a Bruker QUANTAX 200, a microanalysis system based on energy dispersion spectroscopy (EDS) that provides the qualitative and semi-quantitative compositional data of the samples to be studied.

It is also possible to perform chemical analysis on profiles to determine compositional gradients, or mapping elements on two-dimensional images, useful for associating phases and composition.

Materials

- Metals
- Polymers
- Ceramics
- Composites
- Coatings
- Multilayers
- Conductive and non-conductive specimens

Applications

- Morphological analysis
- Microstructural analysis
- Chemical composition analysis (qualitative and semi-quantitative)
- Failure analysis
- Structural analysis
- Analysis of coatings and multilayers
- Image analysis
- Identification of material defects
- Measure of particles size

Specifications

- Electron source
  Tungsten filament
- Accelerating voltage of
  0.2 – 30kV
- Current beam
  0.5pA-5µA, continuous
- Detectors
  SE and BSE
- Vacuum condition
  High and low vacuum
- Sample size
  230x100mm
  (diameter x height)

Shuttle for correlative microscopy

Shuttle & Find from ZEISS is a correlative microscopy interface for light and electron microscopes, designed specifically for use in materials analysis.
A combined hardware and software solution, it allows to transfer specimen from one microscope system to another in just minutes.
Shuttle & Find is an extremely flexible two-way system that allows to combine any number of ZEISS systems for correlative microscopy. It also supports intermediate preparation steps, ensuring the sample is optimally prepared for use when you switch from one system to the other.
Importantly for materials analysis, Shuttle & Find speeds up workflow by automating the process of searching the same region of interest. This reduces cycle times, allowing to process a considerable larger number of samples in a shorter period.