# Field Emission Scanning Electron Microscope

## SEM5000Pro


**SEM5000Pro** is a field emission scanning electron microscope with high-resolution imaging and analysis ability, supported by abundant functions, benefits from advanced electron optics column design, with high-pressure electron beam tunnel technology “SuperTunnel”, providing low aberration and magnetic free objective lens, achieves low voltage high-resolution imaging experience, the magnetic specimen can also be analyzed. With optical navigation, automated functionalities, carefully designed human-computer interaction user interface, and optimized operation and use process, no matter if you are an expert or not, you can quickly get started and finish off high-resolution imaging and analysis work.

### Electron Gun

High brightness Schottky Field emission electron gun

### Resolution

0.8 nm @15 kV
1.2 nm @1 kV

### Magnification

1 ~ 2,500,000 x

### Accelerating Voltage

0.2kV~30kV

### Sample Stage

5-axis automatic

## Features

01 High-resolution imaging at low accelerating voltage

02 High-pressure tunneling technology “SuperTunnel” ensures low voltage resolution

03 Electromagnetic & electrostatic combo objective lens improves low-voltage resolution and enables magnetic samples observation

04 The electron optics path without crossover reduces system aberration and improves resolution

05 Water-cooled constant temperature controlled objective lens ensures the stability, reliability, and repeatability

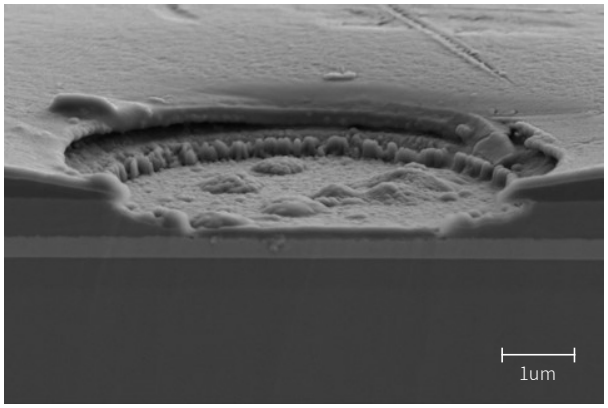
06 Electromagnetically deflected multi-hole aperture exchange system, facilitates automatically switchable apertures system, no mechanical adjustment needed, achieves high-resolution imaging or large beam analysis mode through a click-away fast switching.

## Applications

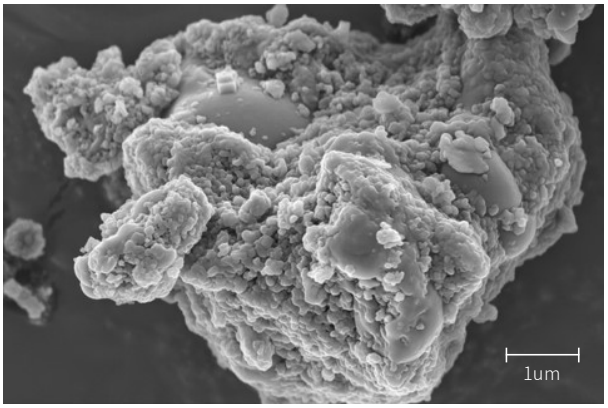
# Specifications

| | | |
|---|---|---|
| **Electron Optics** | High Vacuum Resolution | 0.8 nm @15 kV, SE |
| | | 1.2 nm @ 1.0 kV, SE |
| | Accelerating voltage | 20 V ~ 30 kV |
| | Magnification | 1 ~ 2,500,000 x |
| | Type of electron gun | High brightness schottky field emission electron gun |
| **Specimen Chamber** | Vacuum system | Fully automatic control, oil free vacuum system |
| | Camera | Dual cameras<br>(Optical navigation + chanmber monitoring) |
| | Distance | X=110 mm |
| | | Y=110 mm |
| | | Z=50 mm |
| | | T: -10° ~+70° |
| | | R: 360° |
| **Detector & Accessories** | Standard | In-lens Detector |
| | | Everhart-Thornley Detector(ETD) |
| | Optional | Retractable Backscattered Electron Detector (BSED) |
| | | Retractable Scanning Transmission Electron Microscope(STEM) |
| | | Energy Dispersive X-ray Spectroscopy (EDS) |
| | | Electron Backscatter Diffraction (EBSD) |
| | | Specimen Exchange Loadlock |
| | | Trackball & Knob Control Panel |
| **User Interface** | Language | Chinese/English |
| | OS | Windows |
| | Navigation | Optical navigation, gesture navigation |
| | Automatic function | Auto Brightness & Contrast, Auto Focus, Auto Stigmator |

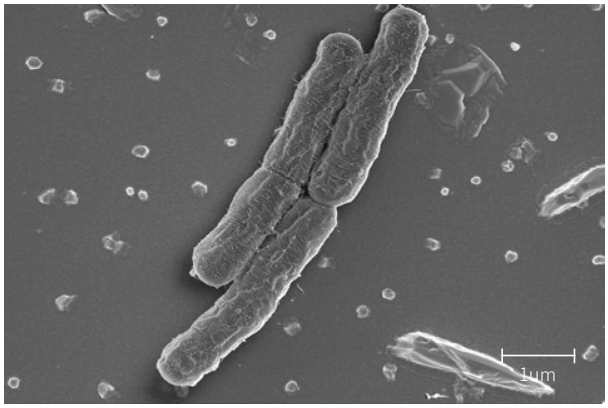
# Image Gallery



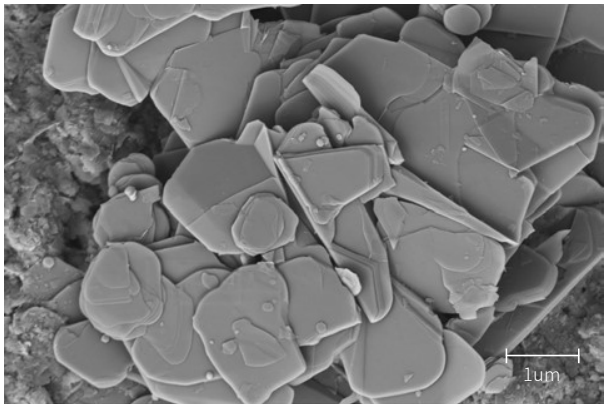

Glass Substrate
Acceleration voltage: 3 kV



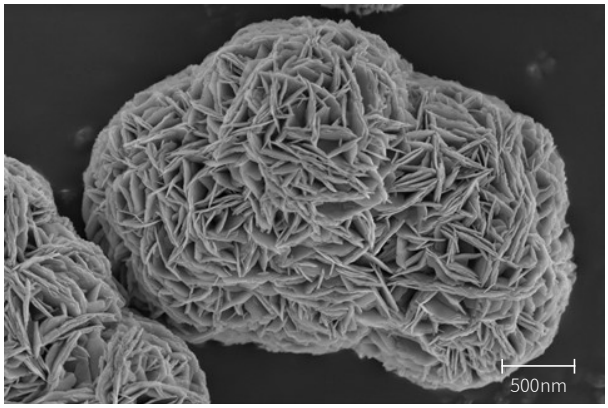

Catalyst
Acceleration voltage: 5 kV



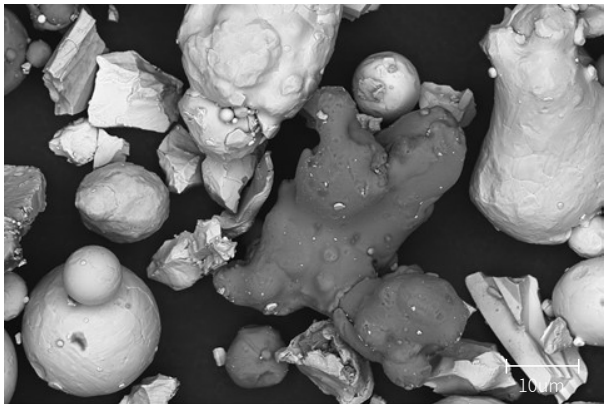

Escherichia Coli
Acceleration voltage: 3 kV




Boron Nitride Nanosheet
Acceleration voltage: 3 kV




Ternary Positive Precursor
Acceleration voltage: 3 kV




High Entropy Alloy Powder
Acceleration voltage: 10 kV