Scanning Electron Microscopes

acst
Advanced Creative Solutions Technology

EM-30 (Part # E-A1035) & EM-30AX (Part # E-A1017)

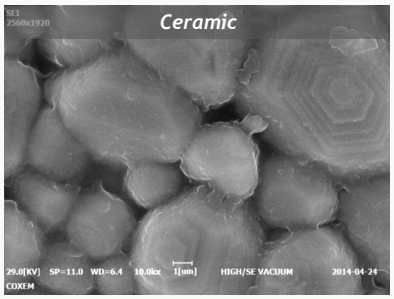
Why COXEM SEM?

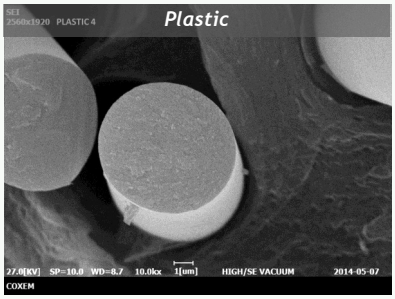
- *High Resolution < 14 nm*
- *Magnification up to 100,000*
- *Auto stage click and move: X, Y, T*
- *High Def. images 5120x3840 pixel*
- *Affordable & Best Value*
- *Robust modular design*
- *Powerful and intuitive interface*
- *1 Year full warranty*
- *24x7 Technical Support*

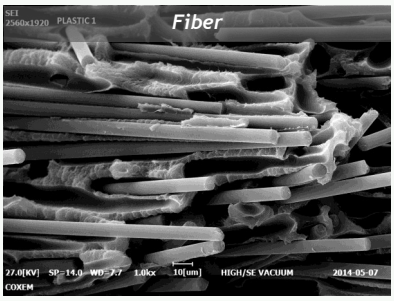
Affordable. Compact. High Resolution. Robust.

Scanning Electron Microscope (SEM) is a precision instrument that can be used for analyzing the shapes or constituents of microstructure materials in quantitative and qualitative at the nm scale. It is an essential tool for visualization and accurate measurements of nanostructures. COXEM SEM offers a perfect balance between affordability and performance, especially when sub nanometer imaging is becoming a standard. This instrument is designed to maintain robustness, affordability and ease-of-use. The SEM is a truly multidisciplinary metrology and industry standard tool in countless engineering and research fields and used in chemistry, biology, material science as well as nano-materials and nano-biology.

- Precise & high quality images <14 nm resolution or better
- Accurate depiction of materials at the nanoscale
- Auto focus and fine focus
- High magnification
- Stage position
- Filament memory
- Auto stage, click and move
- Portable, designed to fit even in small lab space
- Modular design - easy to service and maintain. None to little downtime







Technical Features:

- Back Scattered Electron Detector
- Secondary Electron Detector
- Accelerating voltage: 1~30kV variable
- Spatial Resolution: <14 nm
- Magnification 20,000 to 100,000x
- Auto stage: X 35 mm, Y 35 mm, T 0 to 45° axis
- Tungsten filament
- Click & Move Stage Control

CONTACT INFORMATION:

Need additional information and pricing, email clientservices@acs-t.com or simply visit our website www.acs-t.com or call our direct line 1-847-813-5042.

Scanning Electron Microscope

OPTIONAL ACCESSORIES

COXEM SEM provides a high level of flexibility for conducting a wide array of tests and experiments. Additional accessories can further expand the capabilities of this SEM.

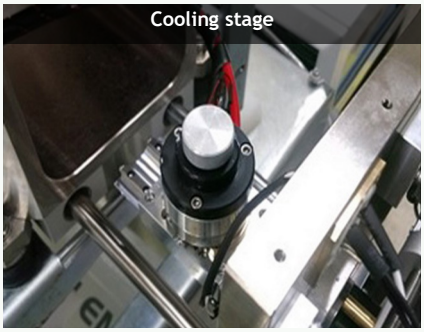
Cool Stage: Cool Stage is used for liquid or biological sample. With rapid cooling under -25 degree, the sample can be observed without any external damage or alteration. The cooling stage temperature is from—25°C to 45°C, with sample size up to 8 mm and the specimen holder is designed with dual Peltier device

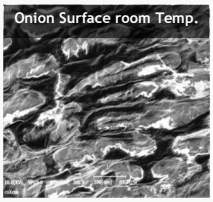
Back Scattered Electron (BES) Detector: BES Detector is applied with 4 Channel Solid state type. It provides excellent composition and photography functions. When is used with secondary electron (SE) detector, the combined information of SE+BES image can be provided.

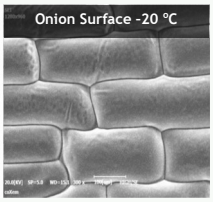
Low Vacuum System: Using the Low Vacuum function, non-conductive sample can be observed without coating because of the difference of the vacuuming degree between the column site and the chamber site. For this function, BSE detector needs to be chosen. This system is useful for any specimen that is not coated and is very effective in low magnification at a vacuum conditions between 100pa to 1pa. (Duration of use is limited)

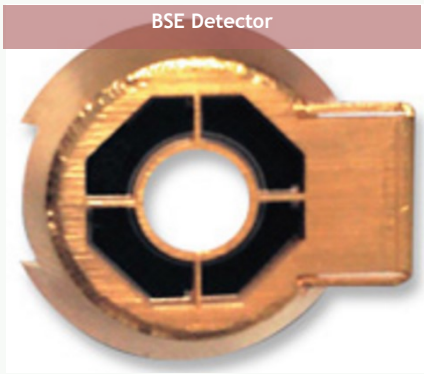
Ion Coater: This apparatus is used for TEM/SEM specimen preparation with ease of operation. By generating a glow discharge in a vacuum chamber as low as 1.33Pa and ionizing the residual gas, this ion coater can sputter metals on a specimen, clean, and etch a specimen with the energy of the ionized gas. Simple to operate and suitable for the following metals (Au, Pt, Pd, Cr, Pt-Pd, Cu, Ni).

Energy Dispersive Spectroscopy: X-ray microanalysis, EDS technique is mounted on an electron microscope (SEM) to analyze the chemical composition of the solid, thin film, or particle. Measuring element range of EDS (Energy Dispersive X-ray Spectrometer) is from Beryllium (4) to Americium (95). One of the most sensitive X-ray microanalysis method is one of the analysis that contains information about the element component of the area of the micro-region, the relative detection limit is 0.1%. The new EDS system developed by Bruker QUANTAX microanalysis is measured speed is more than 10 times faster than Si (Li) detector, and provides accurate and reliable results. This system does not need Liquid nitrogen. Also, QUANTAX developed a new software analysis ESPRIT, it is user-friendly and powerful. This software has been providing standard less analysis, standard related quantification, or quantitative analysis of standard less standard related analysis method combined with each other, which can be applied appropriately to the application.

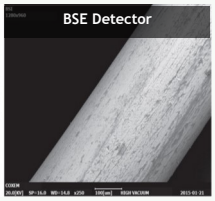

Cooling stage

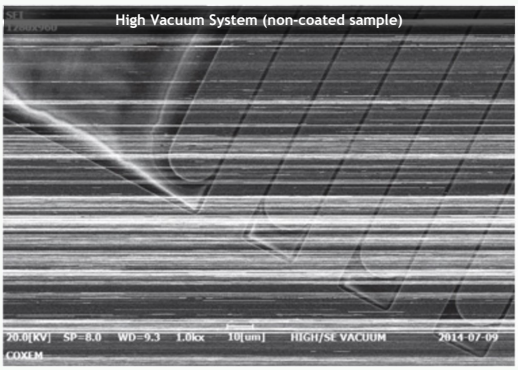

Onion Surface room Temp.

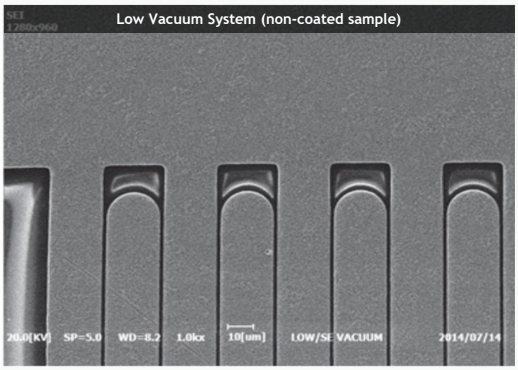

Onion Surface -20 °C


BSE Detector


SE Detector


BSE Detector


High Vacuum System (non-coated sample)


Low Vacuum System (non-coated sample)


Ion Coater

Scanning Electron Microscope

SPECIFICATIONS

SPECIFICATIONS	EM-30	EM-30AX
Magnification	20-100,000X	20-100,000X
Spatial Resolution	<14nm	<14nm
Vacuum System	Roughing: rotary pump High Vac.: Turbo molecular pump	Roughing: rotary pump High Vac.: Turbo molecular pump
Acceleration Voltages	adjustable 1~30KV	adjustable 1~30KV
Electron Source	Tungsten Filament (5 spare)	Tungsten Filament (5 spare)
Detector	Secondary Standard	Secondary Standard EDS Standard
	4 Channel BSE Optional EDS optional	4 Channel BSE Optional
Navigation		YES
Lens System	2 levels reducing system	2 levels reducing system
Objective Iris	4 levels variable aperture	4 levels variable aperture
Standard Sample Stage	Motorized, X: 35mm, Y: 35mm, T: 0 to 45° m, Z: 5 to 50 mm manual R(360°)= Rotation Beam	Motorized, X: 35mm, Y: 35mm, T: 0 to 45° m, Z: 5 to 50 mm manual R(360°)= Rotation Beam
Sample Size	70mm (W) x 45mm (H)	70mm (W) x 45mm (H)
Image Shift ± 50 um	X, Y, Rotation	X, Y, Rotation
X/Y Traverse	35x35mm	35x35mm
Automation	Focus, Filament memory, Brightness, Contrast	Focus, Filament memory, Brightness, Contrast
Scanning Mode	Reduced window (320 x 240 pixel) TV mode (640 x 240 pixels) Slow Screen (800 x 600 pixels) Photo screen (from 1280 x 960 to 5120 x 3840 pixels)	Reduced window (320 x 240 pixel) TV mode (640 x 240 pixels) Slow Screen (800 x 600 pixels) Photo screen (from 1280 x 960 to 5120 x 3840 pixels)
Operation System	Mouse, Keyboard	Mouse, Keyboard
Datat Output Format	jpeg, tiff, BMP	jpeg, tiff, BMP
Dimension	440 x 600 x 550 mm	440 x 600 x 550 mm
Weight	90 Kg	100 Kg