COXEM

Ankersmid M&C

www.sem-system.com

Window For Nano World

Ankersmid M&C

Scanning Electron Microscopy

EM-30 PLUS

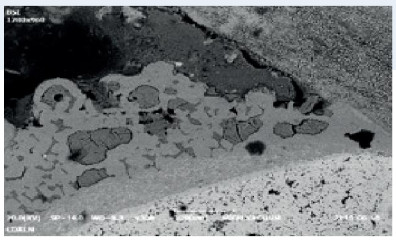
- High quality images (5nm resolution)
- Magnification up to 150,000x
- Easy navigation with the "Navigation Mode"
- Precise control with a joystick at "Driving Mode"
- Combined SE and BSE images
- Low voltage energy consumption
- Intuitive user interface

Specifications

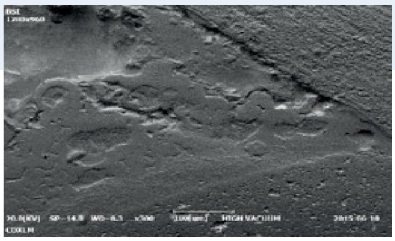
Magnification Range : 20-150,000x
Acc Voltage : 1-30 kV (adjustable)
Electron Gun : Tungsten Filament (W)
Detector : SE Detector
BSE Detector (4 Channel solid type)
Sample Stage : Auto Stage (X: 35mm, Y: 35mm, T: 0-45°)
Manual Stage (Z: 5-50mm)
Image Shift : X, Y, Rotation
Operating System : Microsoft Windows® 7
Dimensions : 400(W)x600(L)x550(H) mm
Weight (Main Unit) : 85Kg

• Removable BSE Detector

By applying 4-channel BSE detector, composition and topography functions are available. These functions are optional and can be removed



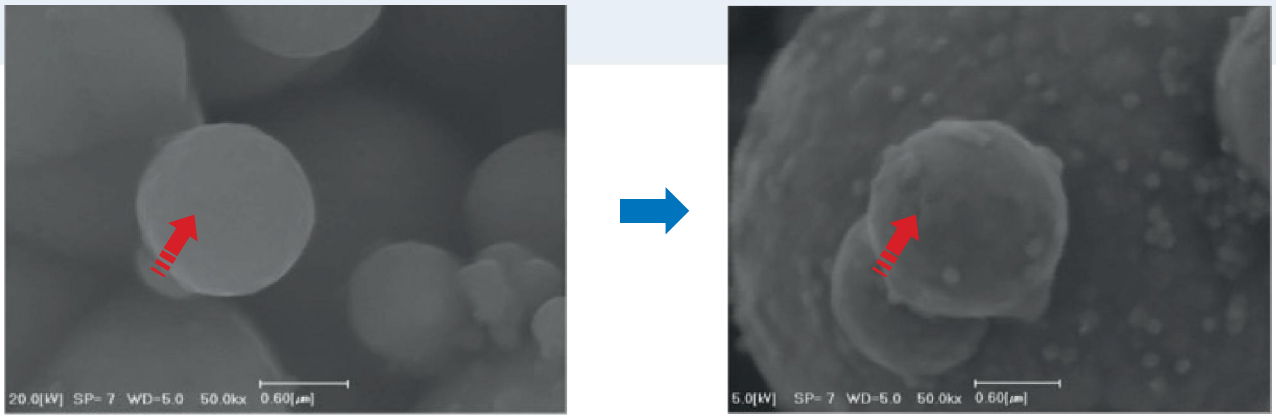
BSE : Composition
Materials: Alloy Metal



BSE : Topography
Materials: Alloy Metal

• Low Voltage Analysis

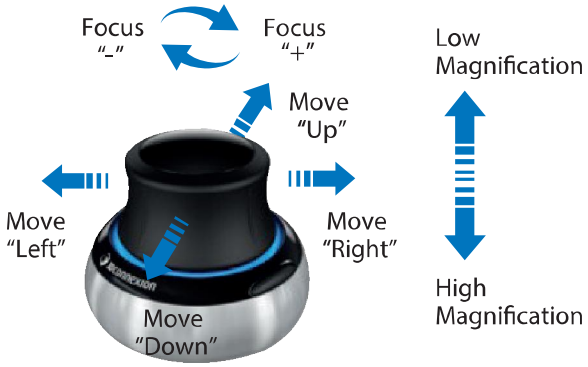
Information on the morphology of a sample can be obtained with low voltage ranging from 1 to 30kV.



- ACC. Voltage: 20kV/ SE Image/ Mag: x50,000
- ACC. Voltage: 5kV/ SE Image/ Mag: x50,000

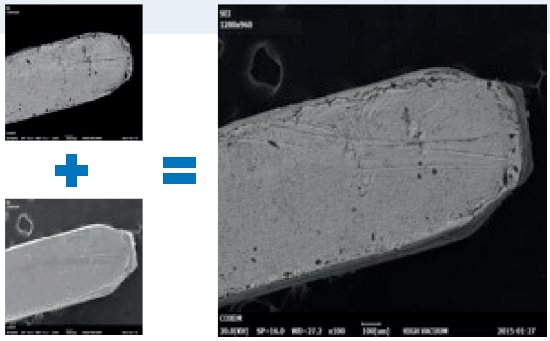
• Driving Mode

2-axis stage motion, magnification, and focus can be easily motorized and controlled with a joystick



• Combined Signaling

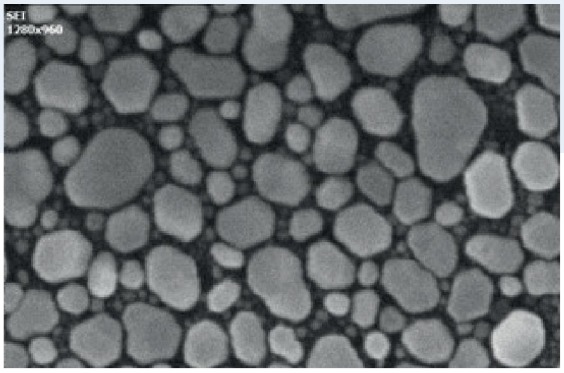
SE and BSE can be detected separately and together



- ACC. Voltage: 20kV
- SE + BSE Image
- Materials: Alloy Metal

• Highest Resolution

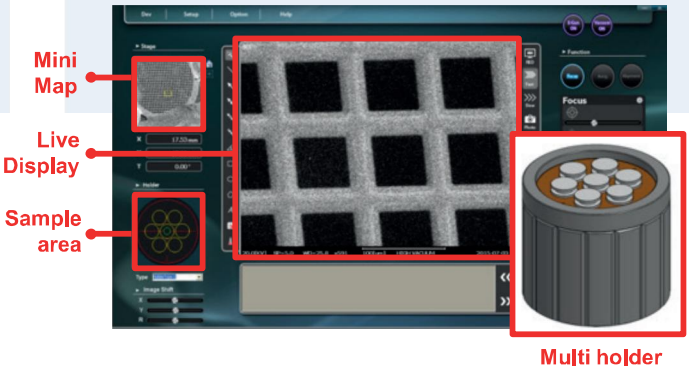
Provides high quality images(5nm resolution, Max accelerating voltage 30kV)



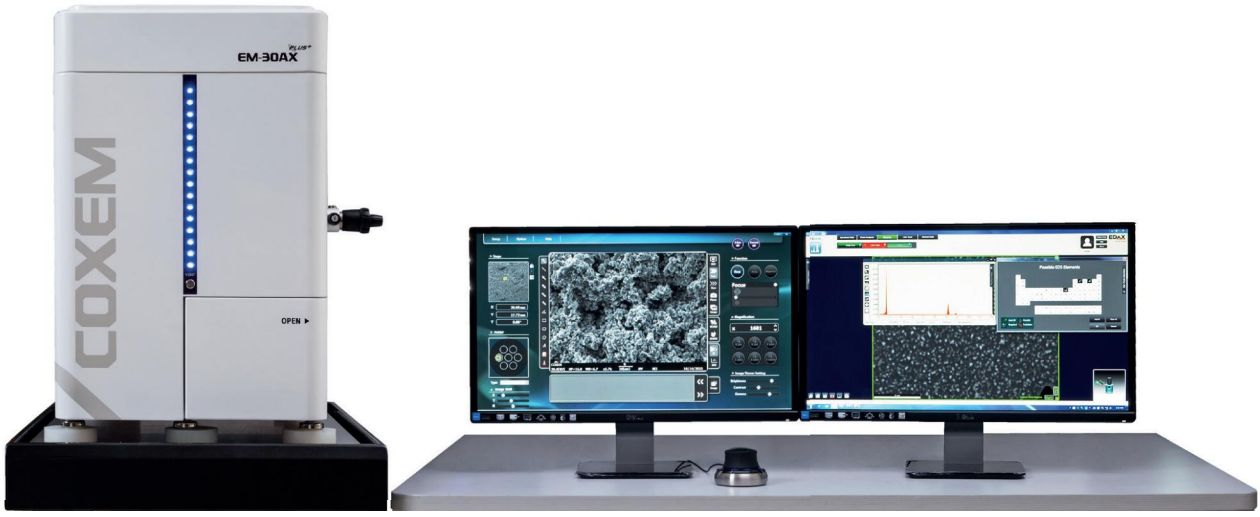
- ACC. Voltage: 30kV/ SE Image/ Mag: 100,000x

• Navigation Mode

By loading seven samples at once into a multi holder, samples can be easily found with the help of a mini map, sample area, and a live display.



EM-30AX PLUS



Specifications

Magnification : x20 ~ x150,000 (Effective: ~x80,000)
Acc Voltage : 1 ~ 30Kv
Electron Gun : Tungsten Filament(W)
Detector : SE Detector. BSE Detector(4 Channel solid type)
EDS : Oxford: 130eV at MnK, C(6) ~ U(92)
EDAX :133eV at MnK, Be(4) ~ U(92)

Stage : Auto Stage (X: 35mm, Y: 35mm, T: 0 to 45°)
Manual Stage (Z: 5 to 50mm)
Image Shift : X, Y, Rotation
Operating System : Microsoft Windows® 7
Dimension : 400(W) X 600(L) X 550(H) mm
Weight : 95Kg

EDS

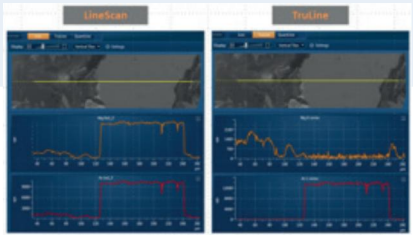
- **Brand : Oxford**
  - Tru-Q Analysis Engine : Accurate Result By Multi Algorithm
  - Multilingual Operation
  - Fast & Easy Analysis With Flow Chart Style Menu
  - Diverse Element Analysis Functions: Point& ID, Line Scan, Mapping, Line Overlap & Background Correction (TruLine, TruMap)
  - Quantitative Mapping (QuantLineScan, QuantMap)

- **Brand : EDAX**
  - Highest Performance SDD
  - 25mm² Chip, 17mm² Windows
  - High Quality Light Element Analysis: Be(4) ~ U(92)
  - Diverse Element Analysis Functions: Point & ID, Line Scan, Mapping

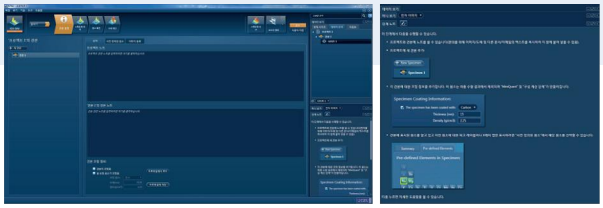
• Oxford

- Report & Data Save
Various report templates are provided. Users can generate a report with the Report Generate function. Data can be saved, copied, printed, and e-mailed directly

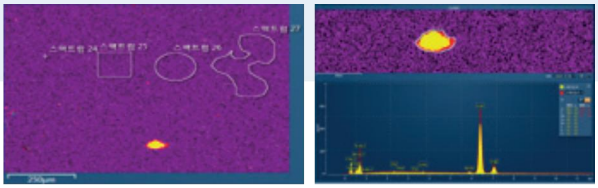
- LineScan-TruLine
Linescan determines elemental concentration variations along a line defined by the users. With TruLine, Linescans are corrected for peak overlaps and any false variations due to X-ray background



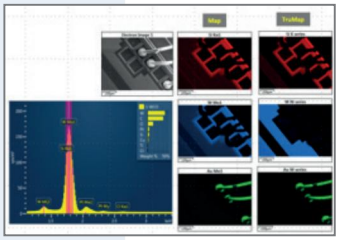
- Available in Various languages
The program is offered in various languages including Korean, English, Japanese, Chinese simplified, Russian, French, and Portugese.



- Point & ID
Spectrum that shows elemental composition can be acquired from multiple points and areas.

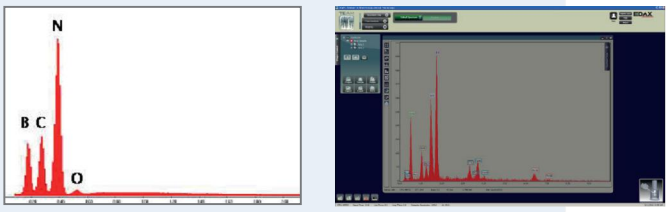


- Map-TruMap
Data can be processed as X-ray Maps from the full frame or selected regions of the sample. TruMaps are used to correct for peak overlaps and any false variations due to X-ray background.

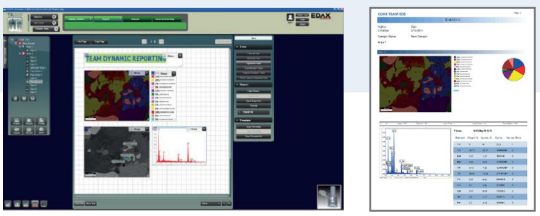


• EDAX

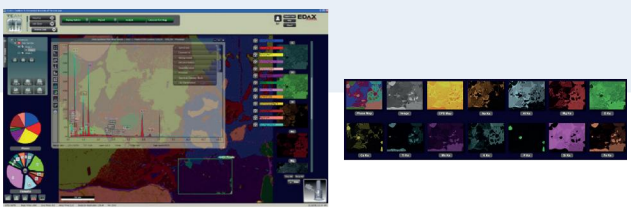
- Outstanding light element performance
Silicon nitride window improves performance for light elements and low energies



- EDS Reporting
The TEAM™ EDS Smart Data Management system for SEM achieves new levels of ease and flexibility with simplified file management and dynamic reporting



- Fast, efficient results for industrial needs
All results can be reviewed anytime. Spectrum, microelement detection, quantitative mapping are construed accurately



EM-30

- Magnification Up To x 100,000
- Auto Stage : X, Y, T Axis
- Click & Move Stage Control
- Auto Function : Filament Memory, Focus, Contrast, Brightness
- High Definition Image : 5120 X 3840 Pixel

Specifications

Magnification : x20 ~ x100,000 (Effective: ~x50,000)
Acc Voltage : 1 ~ 30Kv
Electron Gun : Tungsten Filament(W)
Detector : SE Detector. BSE, EDS Detector(Optional)
Stage : Auto Stage (X: 35mm, Y: 35mm, T: 0 to 45°)
Manual Stage (Z: 5 to 50mm)
Image Shift : X, Y, Rotation
Operating System : Microsoft Windows® 7
Dimension : 400(W) X 600(L) X 550(H) mm
Weight : 85Kg

Stage Position

Users can easily locate the sample on the stage

Auto Focus & Fine Focus

Auto focus function makes the operation easier and clear images can be obtained even at the high magnification

Click & Move

By applying auto stage, the stage is controlled simply with a mouse click

Filament Memory:

Filament's saturation point is automatically stored and activated

EM-30AX

EDS: Thermo

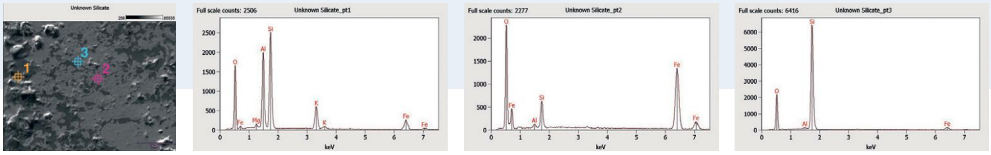
- Accurate & Fast Data Process
- High Resolution : 133eV at Mn, B(5)~U(92)
- Peltier Cooling Stage (LN2 & Water & Fan Free)
- Outstanding quantitative, qualitative analysis

Specifications

Magnification : x20 ~ x100,000 (Effective: ~x50,000)
Acc Voltage : 1 ~ 30Kv
Electron Gun : Tungsten Filament(W)
Detector : SE Detector. BSE Detector.(Optional)
Stage : Auto Stage (X: 35mm, Y: 35mm, T: 0 to 45°)
Manual Stage (Z: 5 to 50mm)
Image Shift : X, Y, Rotation
Operating System : Microsoft Windows® 7
Dimension : 400(W) X 600(L) X 550(H) mm
Weight : 95Kg

• Rapid EDS Analysis

Point and shoot analysis with NORAN System 7 software uses standards-free quantitative analysis to enable rapid identification of the various regions within a material.



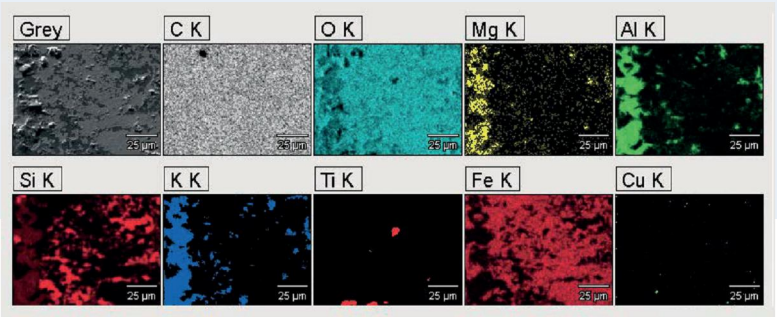
	Point #1	Point #2	Point #3
C-K	2.1	2.2	1.9
O-K	58.3	61.8	61.3
Mg-K	0.7		
Al-K	12.6	1.1	0.5
Si-K	18.3	6.7	33.9
K-K	4.2	0.1	0.1
Co-K		0.1	
Fe-K	3.7	27.0	2.3
Cu-K		0.9	

Weight percentages

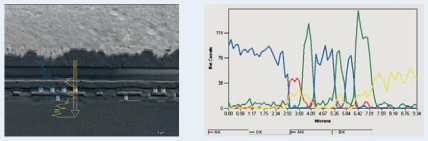
• EDS Analysis with NORAN System 7 Spectral Imaging

The UltraDry Compact EDS detector provides outstanding element mapping in minutes. With Spectral Imaging, where a full EDS spectrum is stored at every pixel, samples can be analyzed after they have been removed from the microscope. NORAN System 7 tools provide several analytical methods for the best results.

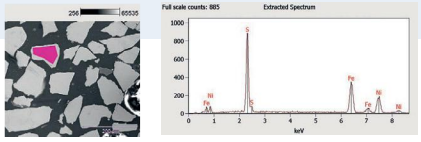
- Elemental Mapping



- Extracted Linescans



- Extracted Area Analysis



CX-200TM

- Magnification up to 300,000x
- Auto Functions : Filament, Focus, Contrast, Brightness
  * High Definition Image : 5120 X 3840 Pixel

Specifications

Magnification : x15 ~ x300,000 (Effective: ~x100,000)
Acc Voltage : 1 ~ 30Kv
Electron Gun : Tungsten Filament(W)
Detector : SE Detector. BSE Detector.(Optional)
Stage : Auto Stage (Z: 5 to 60mm)
Manual Stage (X: 40mm, Y: 40mm, T: -20° to 90°, R: 360°)
Image Shift : X, Y, Rotation
Operating System : Microsoft Windows® 7
Dimension : 800(W) X 900(L) X 1500(H) mm
Weight : 400Kg

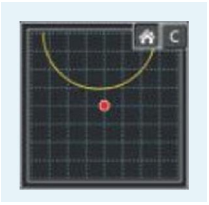
CX-200TA

- Magnification up to 300,000x
- Full Auto Stage (X,Y,R,T,Z Axis)
- Panorama Shot
- Click & Move stage Control
  *Auto Functions : Filament, Focus, Contrast, Brightness
  * Higher Image Pixel : 5120 X 3840 Pixel

Specifications

Magnification : x15 ~ x300,000 (Effective: ~x100,000)
Acc Voltage : 1 ~ 30Kv
Electron Gun : Tungsten Filament(W)
Detector : SE Detector. BSE, EDS Detector(Optional)
Stage : Auto Stage (X: 40mm, Y: 40mm, T: -20° to 90°, R: 360°, Z: 5 to 60mm)
Image Shift : X, Y, Rotation
Operating System : Microsoft Windows® 7
Dimension : 800(W) X 900(L) X 1500(H) mm
Weight : 400Kg

CX-200TA



Stage Position

Users can easily locate the sample on the stage

Filament Memory:

Filament's saturation point is automatically stored and activated

Click & Move Stage Control

By applying auto stage, the stage is controlled simply with a mouse click

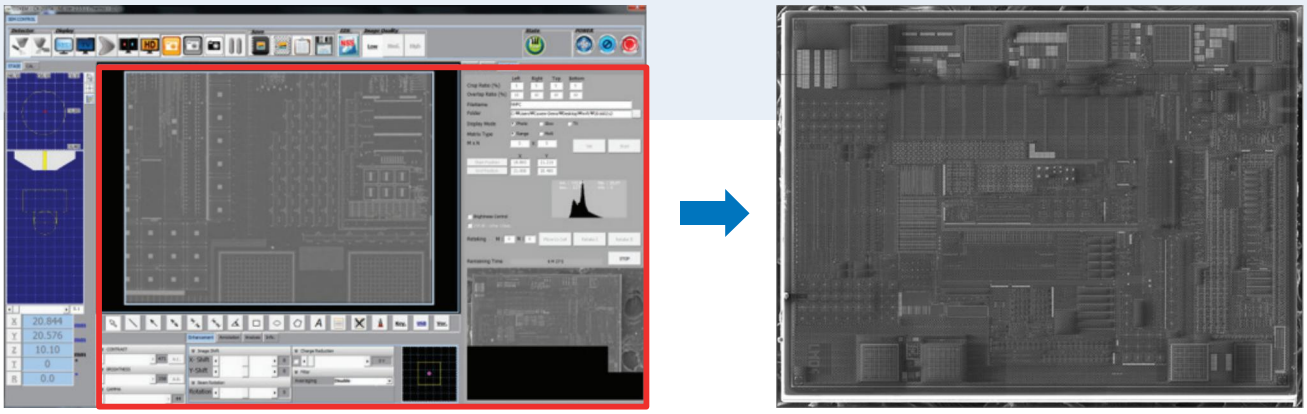
Auto Focus & Fine Focus

Auto focus function makes the operation easier and clear images can be obtained even at the high magnification

(Only Available with CX-200TA)

Panorama Shot

After proper setting, panorama shot captures images automatically on the selected area. Optimized for measuring large areas such as semiconductor surface, biological samples and metals.

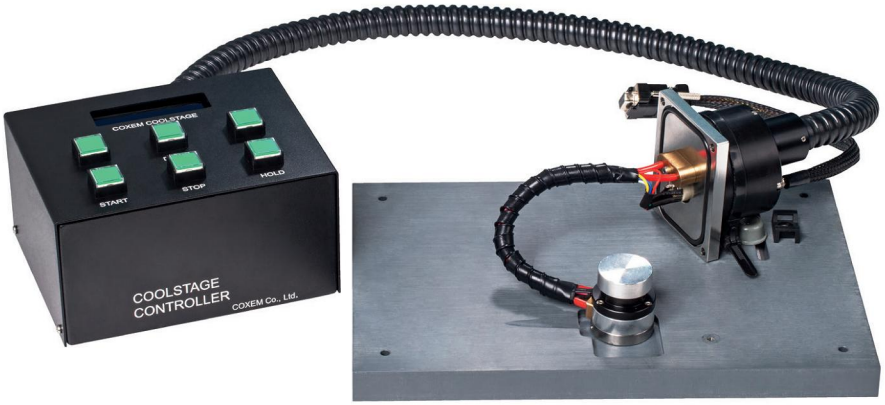


Ion Coater

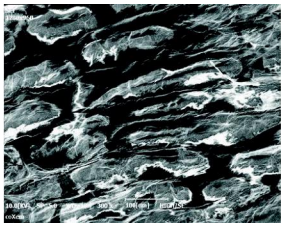
- Model : SPT-20
  - -Simple operation
  - -Compact rotary pump
  - -Suitable for metal targets (Au,Pt,Pd,Cr,Pt-Pd,Cu,Ni)

Taget	Au & Pt
Target Size	50mm
Power	220V/60Hz,500W
Lonization Current	0~9mA
Chamber Size	100mm[Dia]
Dimension	380(W)x250(L)x330(H)mm

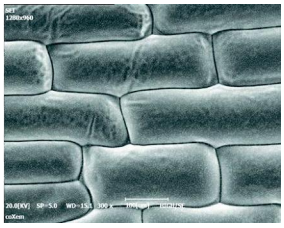
Cool Stage



- Model : CSU-1
  - -Suitable for liquid or biological samples
  - -Rapid cooling under -25°C
  - -Prevents external damage & maintains original structure of sample
  - -Specimen holder with a dual peltier device
  - -Vacuum feed through flange



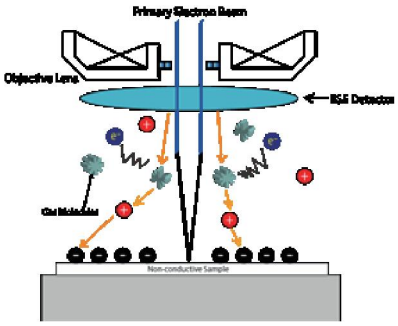
-Onion surface without cool stage



-Onion surface with cool stage

Low Vacuum System

- Suitable for non-conductive sample
- BSE required
- Non Coating System
- Vacuum condition : 100pa to 1pa

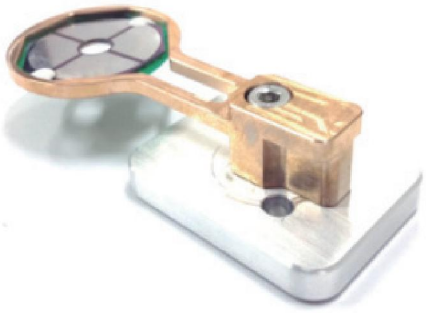


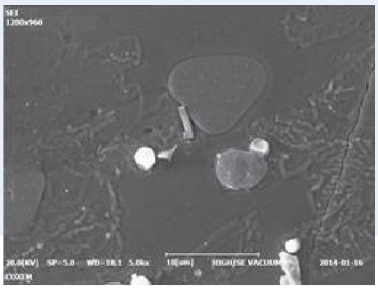
-High Vacuum SE Image

-Low Vacuum BSE Image

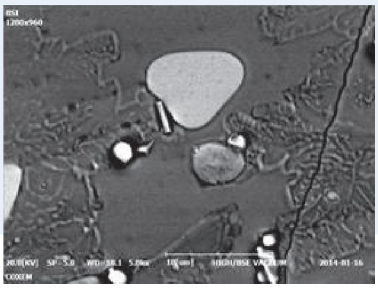
BSE Detector

- 4 channel solid state type : 4 segment silicon PIN diode
- Excellent composition and photography functions
- Combined SE and BSE images
- Synergistic use of BSE detector and LV mode



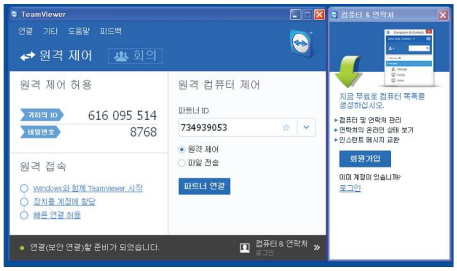


-SE Image of alloy metal surface

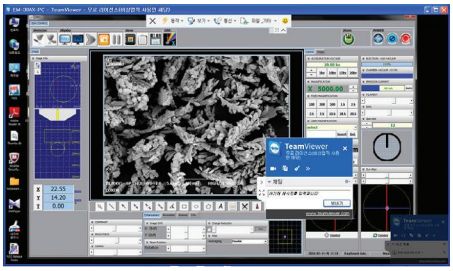


-BSE Image of alloy metal surface

Remote Control Service



- Remote support using Team Viewer Software



- Supported by professional engineers online

Education Video

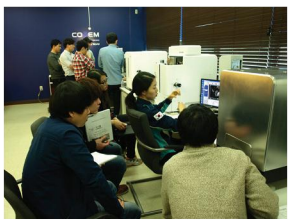
- Ch 1 SEM Principle

- Ch 2 Product Overview

- Ch 3 Preparing samples & operation

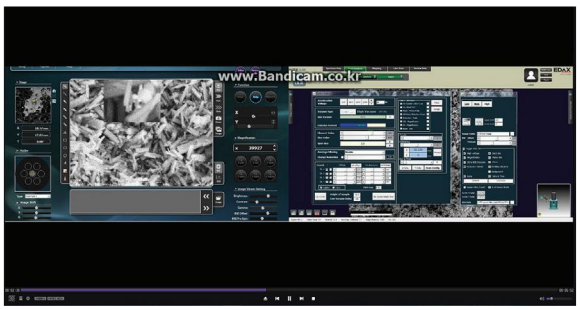
- Ch 4 Maintenance

Academy



- COXEM offers academy for customers, distributors, and professionals regularly

Remote Demo Show



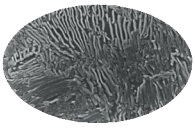
- Live Demo show at 'Coxem Technical center' online

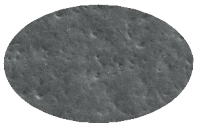
Specification

	EM-30 Plus	EM-30AX Plus	EM-30	EM-30AX	CX-200TA	CX-200TM
Resolution SE	5.0nm at 30kV		20nm at 30kV		3.0nm at 30kV	
Magnification	x20 ~ x150,000		x20 ~ x100,000		x15 ~ x300,000	
Effective Magnification	~ x80,000		~ x50,000		~ x100,000	
Acceleration Voltages	1 ~ 30kV					
Vacuum Mode	High Vacuum					
	Low Vacuum (Optional)		-		Low Vacuum (Optional)	
EDS	External (Optional)	Intergrated (Standard)	External (Optional)	Intergrated (Standard)	External (Optional)	
Maximum Specimen Size	60mm in diameter				160mm in diameter	
Stage	3-Axis Motorized				5-Axis Motorized	4-Axis Manual
X	0~35mm				0~40mm	0~40mm
Y	0~35mm				0~60mm	0~40mm
T	0~45°				-20~90°	-20~90°
Z	5~50mm (Manual)				5~60mm	5~60mm(Motorized)
R	360° (Raster)				360°	360°(Manual)
Observation Area	40mm in Diameter				110mm in diameter	
Maximum Height	45mm				55mm	
Electron Gun	Pre-centered Cartridge					
Source	Tungsten					
Detector	SED					
	BSED(Standard)		BSED(Optional)			
Control	Mouse					
	Keyboard					
	Joystick		-	-	-	-
Auto Image Adjustment	Auto Focus					
	Auto Brightness & Contrast					
	Auto Filament					
	Auto Start					
Special Feature	Navigation View		Measurement Tool		Panorama Shot	
	Special Multi Holder		Remote Control		HD mode	
	Signal Mixing (SE+BSE)		-		Dual Display	
	Dual Display(SE/BSE)				Measurement Tool	
	BSE (Compo,Topo)				Remote Control	
	Line Profile				-	
	Image Process					
	Measurement Tool					
	Remote Control					
Optional	EDS	-	EDS	-	EDS	
	-		BSED			
	Low Vacuum		-		Low Vacuum	
	Cool Stage					

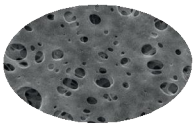
Application

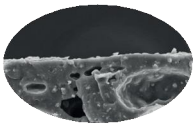
• Automotive

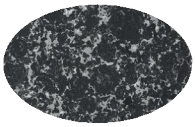

Iron Plate


Glass


LED

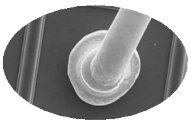

Filter

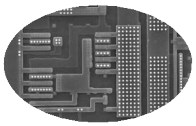

Tire

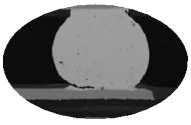

Engine Part

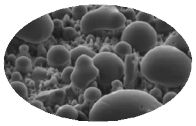

Bearing

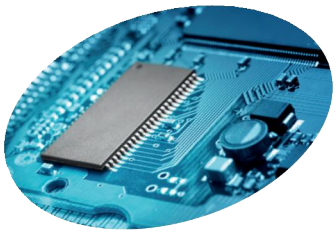
• Semiconductor


Wire bonding


Chip Layer

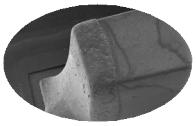

Solder ball


Package Material

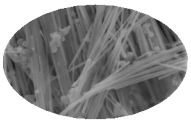


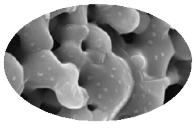

Chip Cross-section

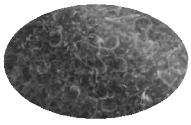

Si Wafer

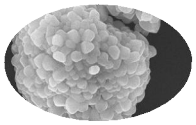

PCB

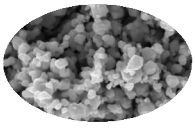
• Chemical

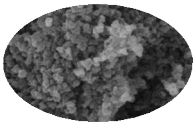

Fiber

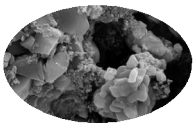

ZrO2

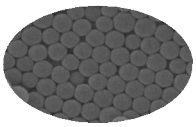

CNT


Lithium


Silver

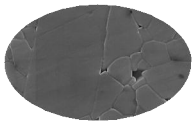

TiO2

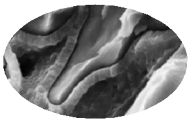

Carbon


Silica

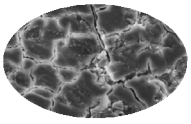
Application

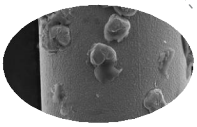
• Materials


Grain Boundary

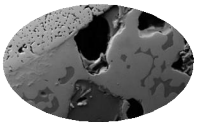

Crack

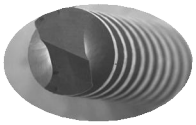

Heater


Al Deposition

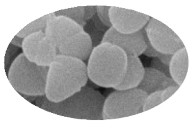

Wire


Implant

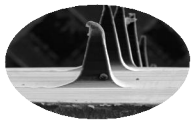

Alloy Metal

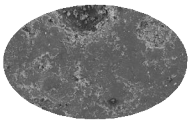

Drill

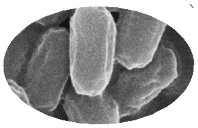
• Bioengineering

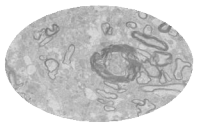

Virus

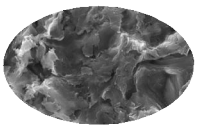

Bacteria

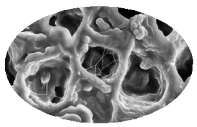

Patch


Tablet

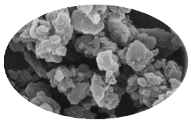

Fungus


Cells

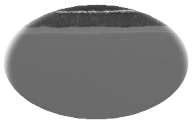

Implant

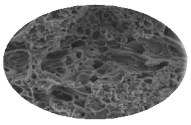

Coffee

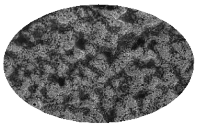
• Construction

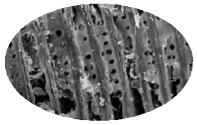

Paint

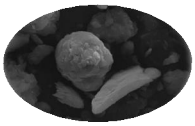

Water Filter


Iron Plate


Stone


Painting


Wood


Sand