

# A Smarter Way

This small box is more capable than you imagine

# The Best Tabletop SEM CUBE II

## Product Highlights

Faster  
Easier  
Operation

Compact  
&  
Light

Hi Res.  
x20K Image  
@30kV

More  
Accessories

5 Year  
Limited  
Warranty



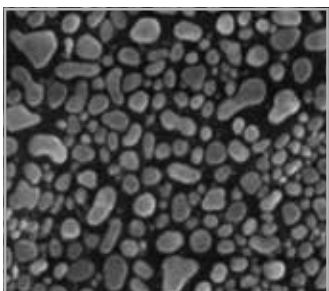
**Electron Optics Instruments**  
Exclusive US Distributor of EmCrafts SEMs  
[www.electronopticsinstruments.com](http://www.electronopticsinstruments.com)



“Awesome, Amazing, Fantastic”  
“すごい, すばらしい”

Global applauses from all round the world

### ● Faster, smaller and high performance



High-Res (x20K @30kV) as good as conventional SEM



High space efficiency and portability

Easy to port. Installable anywhere



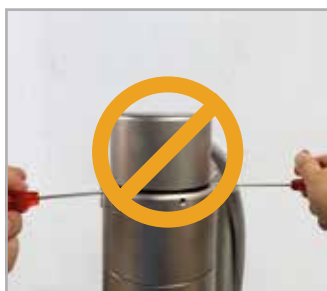
No more waiting

Pumping: 90 sec / Venting: 10 sec



Highly reliable HV component

High reliability and safety by adapting world best HV component from Spellman HV



No gun alignment required

3 minutes required for filament replacement  
(US patent pending 16/287,820)



5 year Limited warranty

### ● Specifications

CUBE II	
<b>I . Electron</b>	
Resolution	5nm (SE Image at 30kV)
Electron Gun	Tungsten(W) Filament
Accelerating Voltage	1 to 30kV
Magnifications	10x to 200,000x
Detector	secondary electron detector(SE) / Backscattered electron detector(BSE)
<b>II . Stage</b>	
Navigation mode	Sample holder Map
Stage System	X,Y(42mm), Z (5~43mm): T: -90 ~ 90° (manual), R: 360° X,Y,Z motorized
Working Distance	5 to 53mm
Maximum Sample Size	80mm(D) x 53mm(H)
<b>III . Image</b>	
Operation PC	Windows 10-based All-in-One 24" Workstation
Display mode	Focus mode: 320x240 pixel, Resizable Preview mode: 800x600 pixel Slow mode: Applicable to both preview and focus mode Photo mode: Up to 3200x2400 pixel
Beam Shift	100 $\mu$ m
Format	BMP,JPEG,PNG,TIFF
<b>IV . Vacuum</b>	
Vacuum times	Vacuum : 90sec, Vent : 10sec
Vacuum mode	High Vacuum Mode (<math>9 \times 10^{-3}</math> Pa) Low Vacuum Mode (Charge-up reduction)
Vacuum System	Full Automated Evacuation System - Turbo molecular & Rotary vane pump
<b>V . Dimensions &amp; Power</b>	
SEM	410(W) x 440(D) x 520(H)mm / 65kg
Power supply	Single Phase : 100 ~ 240VAC, 50/60Hz, 1kVA

# Control Pad? Joystick? Only Mouse!

20 minutes is enough to train beginners. Request a Webinar.

Virtuoso: SEM operation software from EmCrafts

Most straightforward and convenient SEM software in the world.

## ✓ 100% motorized stage

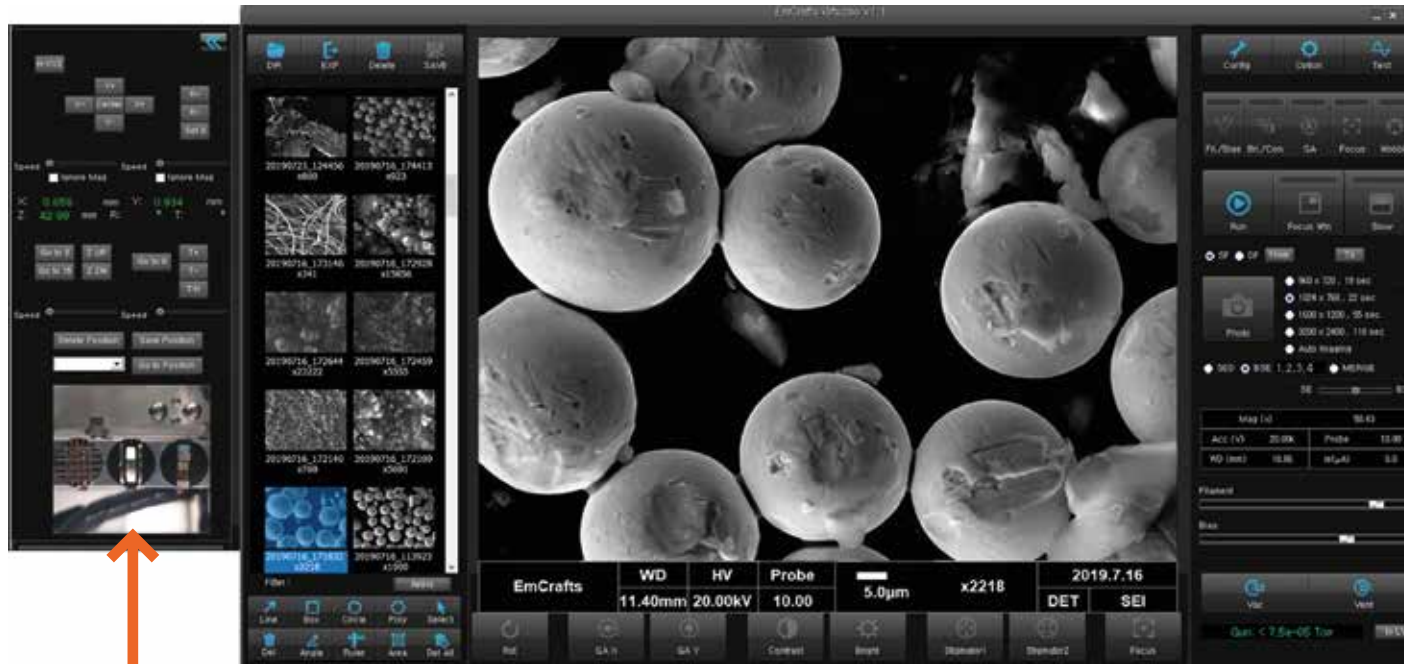
All you need for basic operation is the mouse

## ✓ Click and Go

Move the stage by double click. Navigate inside samples like a Google map

## ✓ Position saving

Save up to 100 analysis positions and restore one of them immediately



## ✓ No jig is required to mount your specimens

Just place your sample on one of three positions



## ✓ Drawing tools

- Length, area, angle measurement
- Circle, line, polygon annotation



## ✓ Remote Control

Remote operation through Teamviewer sessions enables remote research and diagnostics

## ✓ Map(Navigation) Mode

Multiple stub is provided as a standard Easy illustration about the sample position. Optical image can be overlaid(optional)

## ✓ Start/Stop just like a camcorder

- Convenient switching among imaging modes (TV, Focus, Slow, Photo)
- Easy resolution selection from radio buttons

## ✓ SE / BSE / Merge

- SE-BSE selection from radio buttons
- 4CH BSE imaging is provided as a standard.
- Both compositional and topographical imaging are possible
- SE+BSE Mergible

## ✓ Auto Imaging function

- Automated operation for wanted magnifications listed in a file or edit boxes
- high-resolution images can be acquired from N x N automated tile images.

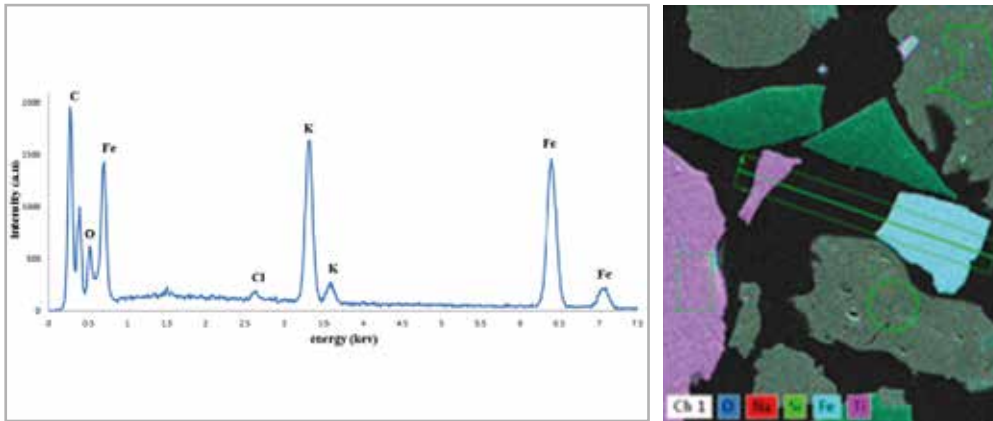


## Elemental Analysis (Any EDS)

### Every EDS from every maker

Select your preferred EDS.

One of all EDS brands (BRUKER, OXFORD, EDAX, THERMO, IXRF) can be installed inside the chassis and its interface was 100% proven already.



**Thermo**  
SCIENTIFIC

**BRUKER**

**OXFORD**  
INSTRUMENTS

**EDAX**  
Smart Insight

**AMETEK**  
MATERIALS ANALYSIS DIVISION

**IXRF** SYSTEMS

## Ion Sputtering Coater (EGCI01)

### Coat Gold and Platinum fast on your sample

Enhance your image contrast and brightness by increasing conductivity.

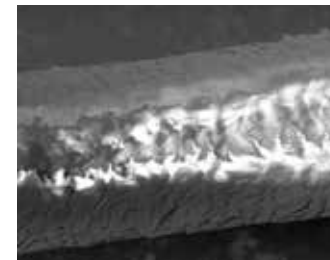
Ion sputter coater creates thin metal coat on a specimen for better conductivity

- ✓ Modern metallic design that fits every place
- ✓ Wide 7" screen
- ✓ Easy and hassle-free touch screen operation



Model	EGC101
Degree of Vacuum	$2.0 \times 10^{-1}$ Tor
Ion Current	1 to 10mA (1mA/step)
Target Material	Au or Pt
Chamber Size	$\phi 140\text{mm(D)} \times 100\text{mm(H)}$
Sample Stage	$\phi 50\text{mm(D)} \times 30\text{mm(H)}$
Target Size	$\phi 50\text{mm(D)}$
Sputter Time	1 to 600sec (1sec/step)
Vacuum Pump	100L/min, Rotary Pump

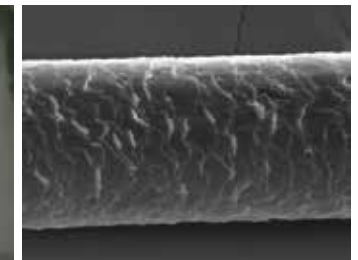
Non Coating



Plasma Sputtering



Au Coating



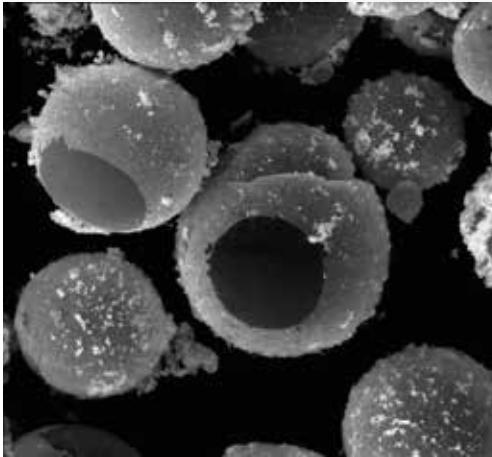


## World Class BSE Detector

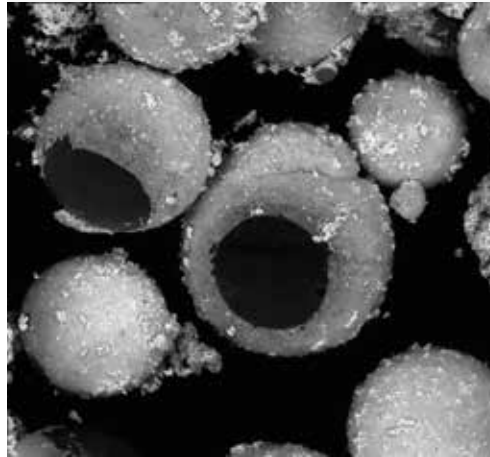
Provided as a standard

EmCrafts' leading signal sensing technology enabled superior low-noise performance and high contrast.

SE

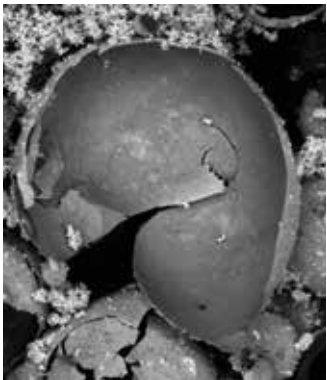


BSE



Each channel works as (+) or (-) to make  $2^4$  imaging combinations for BSE

COMPO



TOPO1



TOPO2



## Best Quality Cooling Stage(IGLOO-I)

Liquid Sample? You can do it with Cube II

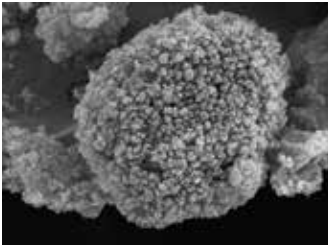
Freeze wet samples up to  $-25^{\circ}\text{C}$  and analyze them in low vacuum mode.

Not only frozen specimen but also normal one can be mounted on a same cooling stage.  
(US patent pending 16/287,770)

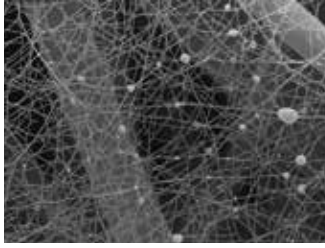
Easy Installation and compact design for space efficiency.



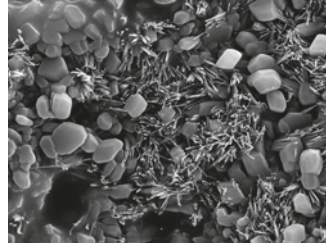
## Materials Science



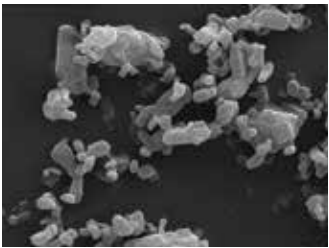
SiC powder



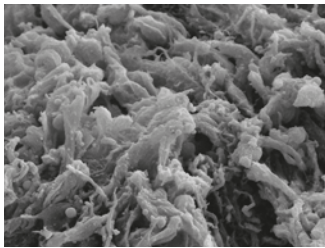
Nano Fiber



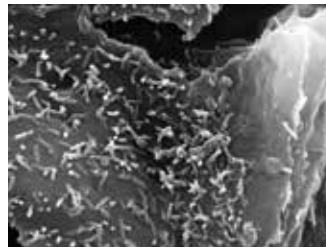
Paper



Pill powder

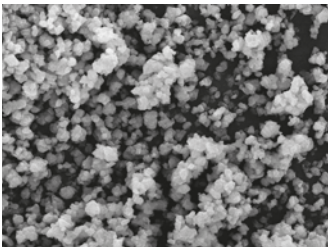


Lymph tissue



Insect skin

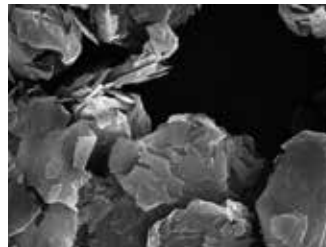
## Energy



ZSM-5 catalyst

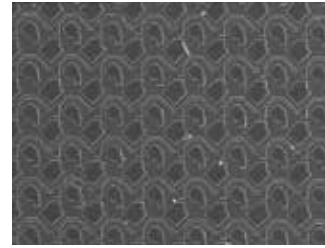


Anode for Secondary cell

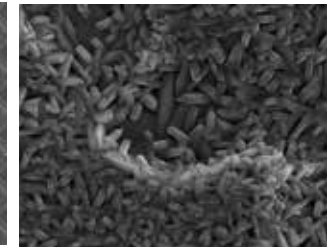


Graphene

## Automotive & Metals



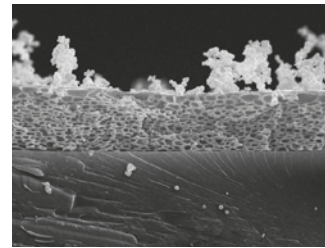
TST on Glass



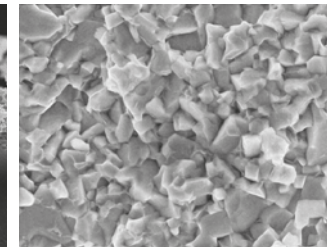
Galvanized Steel Plate



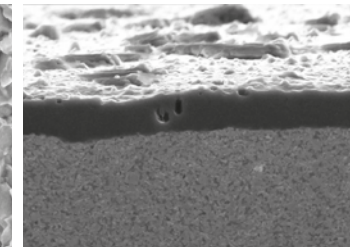
Aluminum Surface



Polymer Coating on Glass

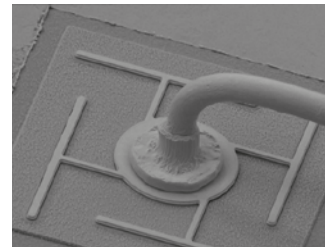


Carbide Surface

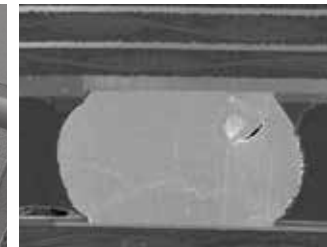


Carbide Intersection

## Semiconductors & Electronics



LED wire bonding



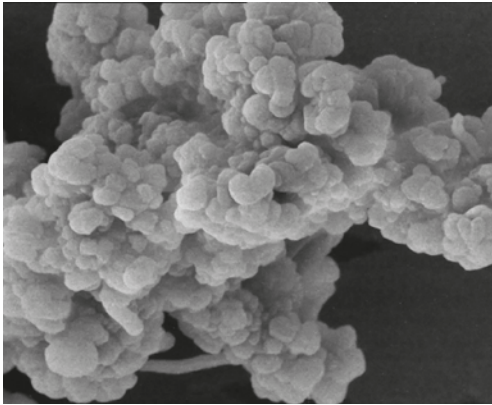
Semiconductor intersection



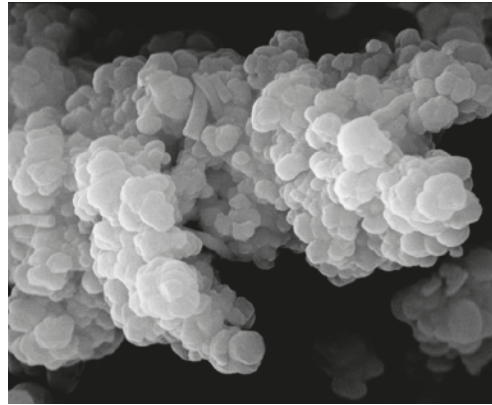
TST on Glass



## Imaging with different Acceleration Voltages

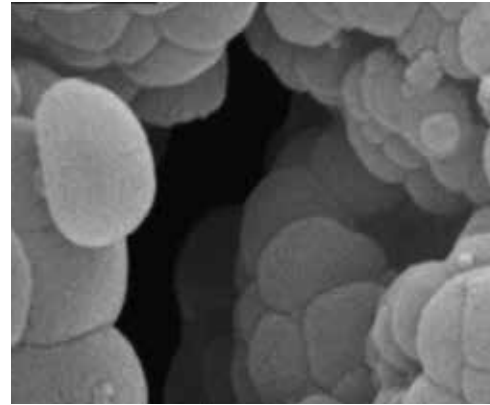


Acc Voltage: 10kV  
Magnification: 10,000x

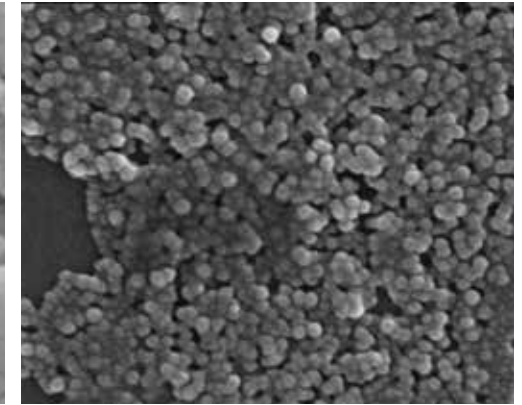


Acc Voltage: 20kV  
Magnification: 10,000x

## High Resolution Images

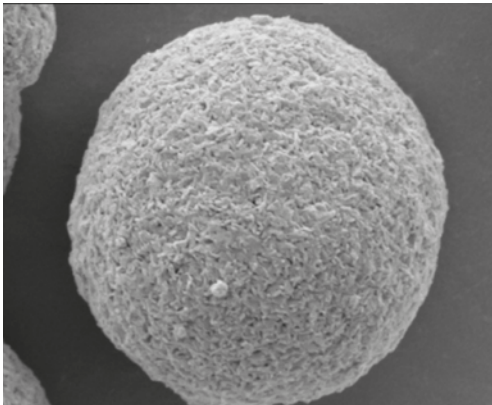


Magnification: 100,000x

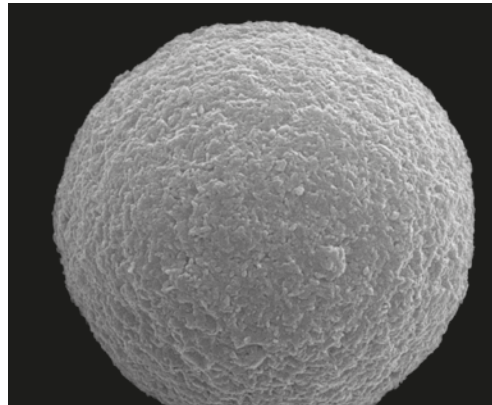


Magnification: 100,000x

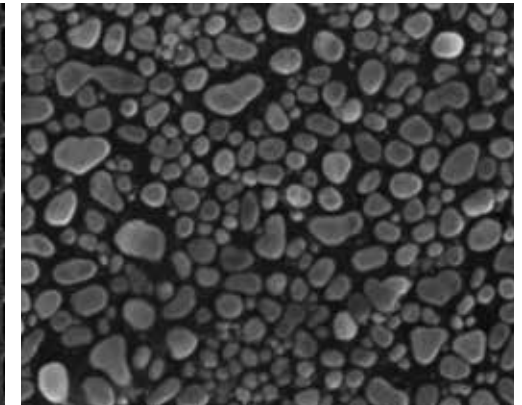
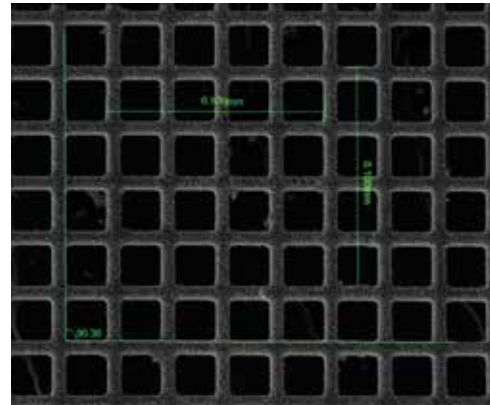
## Calibration & Gold Powder Sample



Acc Voltage: 5kV  
Magnification: 20,000x



Acc Voltage: 20kV  
Magnification: 20,000x





TABLETOP SEM  
CUBE Series



COMPACT SEM  
GENESIS Series



BIG CHAMBER SEM  
VARITAS Series

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