

Schottky FE-SEM  
SU5000

**HITACHI**  
Inspire the Next

# SU5000

SCANNING  
ELECTRON  
MICROSCOPE



HITACHI

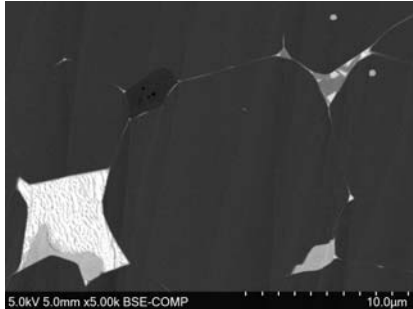


# “ EM Wizard ”

Ease of use and Throughput:

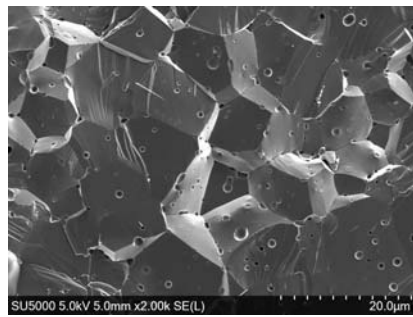
Innovative “ EM Wizard ” GUI offers point-and-click optimized imaging.

Groundbreaking computer-assisted technology offers a new level of SEM operation and control.



Specimen : Neodymium magnet

Specimen : Ferrite core



Visual and interactive guide offers “Observation purpose” to ensure best operating conditions.

Furthermore, automated optical axis alignment and astigmatism correction raise user-friendliness to a new level.

Expert or novice,  
the result is now the same

SEM image	Radar chart	Observation purpose
		Standard observation
		Surface information
		Elemental information
		Elemental + Surface information
		Element analysis+ Observation

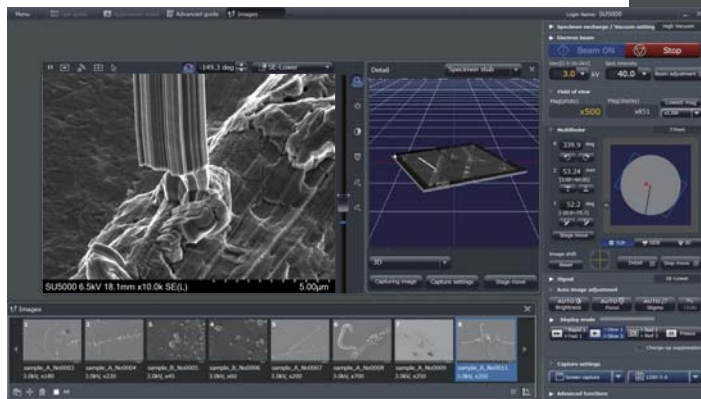
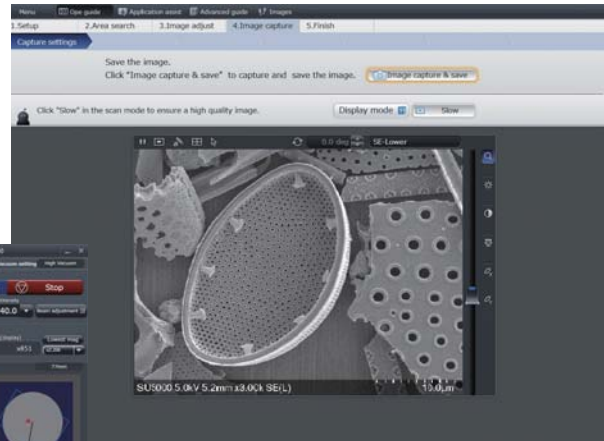
\*above table : BSD fitted configuration. BSD is option.



# Intuitive user interface

Standard mode offers simple and quick operation.

Novice users are guided step by step and learn along the way thanks to the interactive user guide.



Advanced mode has full functionality which displays multiple signals, provides advanced 3D stage navigation using low mag SEM images , and safely executes complex tilt and rotation stage moves with “ 3D Multifinder ”.

3D Multifinder also safely and precisely positions the sample’s FOV for EBSD analysis.

# Hitachi SU5000 FE-SEM

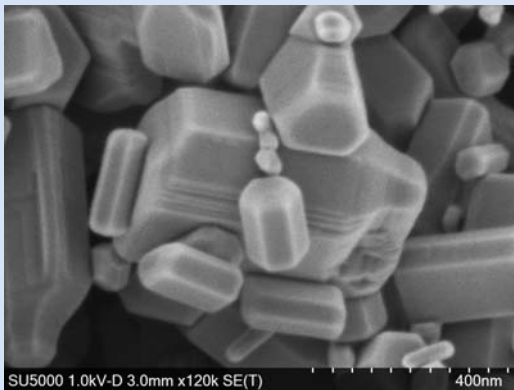
## High performance optics :

- Resolution – In-column Top Detector (2.0 nm at 1 kV).
- Sensitivity – Ultra efficient photodiode BSE Detector, unmatched Low kV imaging to 100 V, and high probe current (>200 nA) for efficient microanalysis.

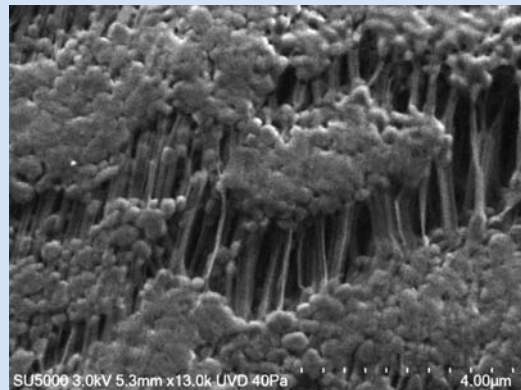
## Robust Performance :

- Variable Pressure – Unparalleled low vacuum (10-300 Pa) imaging with the novel Ultra Variable pressure Detector (UVD).
- Quick and easy specimen exchange via stage drawer ( Max. sample size: 200 mm dia. x 80 mmH).
- Microanalysis – EDS, WDS and EBSD, etc

## Application data



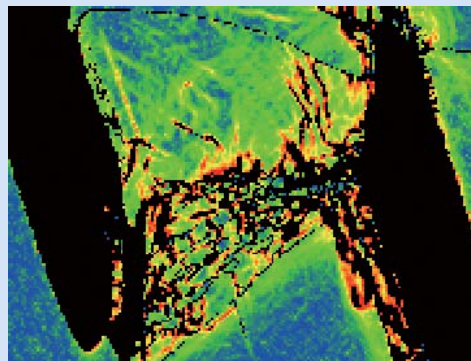
Sample: Zinc Oxide powder  
V-land: 1 kV, Mag.: 120,000x  
High resolution TOP detector image obtained at low kV (1 kV)



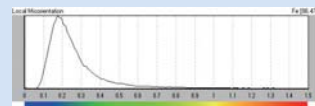
Sample: PTFE  
Vacc: 3 kV, Mag.: 13,000x  
UVD providing high quality image at low kV (3 kV) and low vacuum (40 Pa)



Sample: Heat resistant steel Vacc: 15 kV  
New 5-segment PD-BSE demonstrating high orientation contrast image at low take-off angle (left).  
The correlative grain misorientation map acquired through EBSD (right), showing contrast precision corresponding to 0.5 degree misorientation.



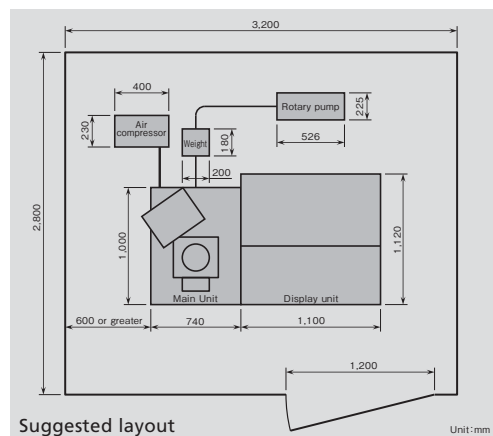
Vacc: 15 kV  
Ip: 8 nA  
Step: 0.1 µm



## Main specifications

Spatial Resolution		1.2 nm @ 30 kV 3.0 nm @ 1 kV 2.0 nm @ 1 kV with deceleration mode*1 3.0 nm @ 15 kV Variable Pressure mode*2	
Magnification		10~600,000x (based on 4 "x 5 " picture), 18~1,000,000x (800x600 pixels on display)/30~1,500,000x (1,280x960 pixels on display)	
Electron Optics	Emitter	ZrO/W Schottky emitter	
	Acceleration Voltage	0.5~30 kV (0.1 kV step)	
	Landing Voltage	0.1~2.0 kV with deceleration mode*1	
	Maximum Probe Current	> 200 nA	
Detector		Evehart Thonley SE detector (Lower detector)	
Variable Pressure Mode*2		Pressure Range: 10~300 Pa	
Specimen Stage	Control		
	Movement	X	0~100 mm
		Y	0~50 mm
		Z	3~65 mm
		T	-20~90 °
		R	360 °
Specimen Size		up to 200 mm φ maximum 80 mm height	
Monitor*3		23 inch LCD(1920x1080)	
Display Mode	Large screen display	1,280x960 pixels	
	Single image display	800x600 pixels	
	Dual image display	640x480 pixels	
	Quad image display	640x480 pixels	
Image Data Saving	Pixel Size	640x480 1,280x960 2,560x1,920 5,120x3,840	
Dimension and Weight	Main Unit	740(W)x 1,000(D) x 1,650(H) mm 550 kg	
	Display	1,100(W) x 1,120(D) x 730(H) mm 290 kg	
	Rotary Pump*3	526(W) x 225(D) x 306(H) mm 28 kg	
	Air Compressor*3	400(W) x 230(D) x 520(H) mm 18 kg	
	Weight	200(W) x 180(D) x 160(H) mm 40 kg	
Optional Detectors	Top detector for high resolution imaging Through-the-Lens*1 Ultra Variable-Pressure Detector (UVD) Retractable five segment Backscatter Electron Detector (PD-BSD)*4 Energy Dispersive X-ray detector (EDS) Wavelength Dispersive X-ray detector (WDS) Electron Backscattered Diffraction Pattern detector (EBSD)		

\* 1: Top detector is option, combined to deceleration function. \* 2: Variable Pressure mode is option. \* 3: option \* 4: PD-BSD is standard detector in Variable Pressure system.



Notice: For correct operation, follow the instruction manual when using the instrument.

Specifications in this catalog are subject to change with or without notice, as Hitachi High-Technologies Corporation continues to develop the latest technologies and products for our customers.

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