

Surface observation

The nano-scale surface observation solution for semiconductor wafer/die, resist, polymer, etc.

High resolution FE-SEM comes on bench-top! **Industry-first**



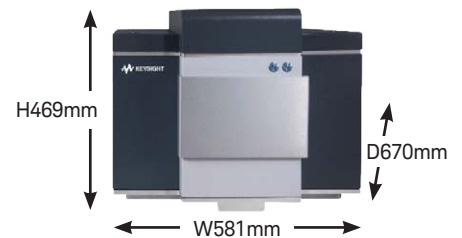
High resolution, small foot print and affordable surface observation system by U9320B FE-SEM (Field-Emission Scanning Electron Microscope)

- “ Limited space but want a high resolution SEM ? ”
- “ Want to image nonconductive or energy sensitive surface ? ”
- “ Want to shorten preparation time before observation ? ”

Yes, we can support for you !

Succeeded to FE-SEM miniaturization !

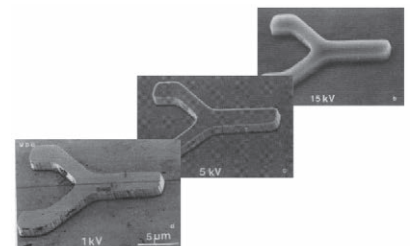
Unique to Keysight, brand new miniature electrostatic beam column including a FE electron source and an electrostatic lens has developed. It's only 85mm width x 38mm height, while a conventional column has 500 – 800mm height. The world's first compact FE-SEM comes on bench-top.



True surface observation with FE performance

“Difficult to observe the true surface morphology because of conductive layer coating on nonconductive specimens...” “The high energy beam damages specimen surface...”

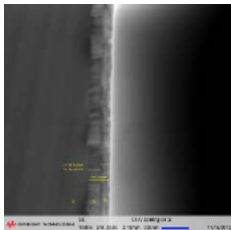
The low-voltage imaging solves those issues. Real-time controllable accelerating voltage can go down to minimum 0.5keV and it reveals the true surface morphology by not having to coat the specimens.



Easy to change samples, start measurement in 5min

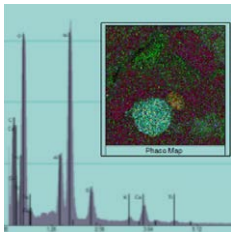
A small chamber allows reducing pump-down time drastically. It contributes to the improvement of work efficiency particularly when the user needs to observe a lot of samples one after another in short time.





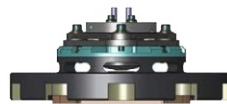
Resolution <10nm @1keV

A few nm thick Cr/W coating on Si can be observed clearly by very low accelerating voltage control.



Elemental analysis also available

The EDS (Energy Dispersive Spectroscopy) option provides qualitative and quantitative element analysis.



Repeatable performance without re-tuning

By innovation, Keysight patented all-electrostatic lens design eliminates any hysteresis effect and ensures repeatable performance without constant re-tuning.



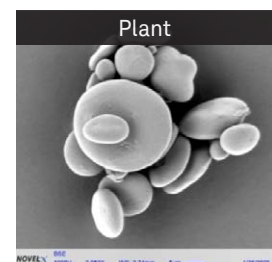
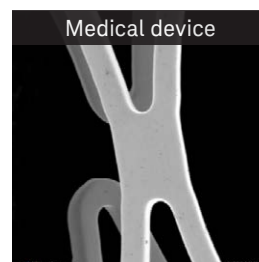
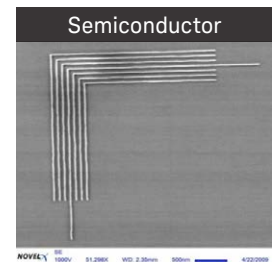
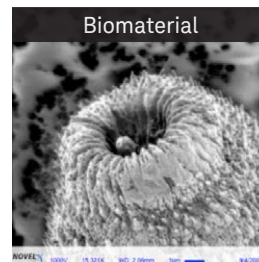
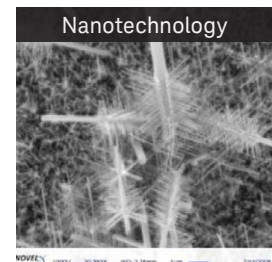
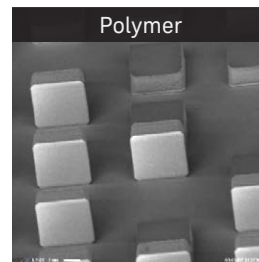
Easy of use operation

Large caliber sample stage allows changing sample easily. Programmable X, Y, Z stage remembers precise coordinates for post analysis.

Major specification

Performance	
Beam voltage	500 to 2,000 V
Beam current	0.2 to 1 nA
Resolution	< 10 nm at 1,000 V
Magnification	250 to 200,000X
Scan field	1 x 1 mm (max)
Electron source	Schottky field emission
Detector modes	SE, BSE, Topo
Sample parameters	
Sample size	100 x 60 mm (max)
Sample thickness	30 mm (max)
Viewable area	50 x 30 mm (max)
Vacuum system	
Chamber vacuum	1 e-4 Torr
Turbo pump	80 liter / second
UHV pump	Ion pump with gettering
Dimensions, weight	
Microscope	581(W) x 670(D) x 469(H)mm, 87kg
Pump unit	203(W) x 254(D) x 203(H)mm, 4kg
Installation/operation requirements	
Power	100 to 240 Vac, 50/60Hz
Operation temperature	15 to 30 degrees Celsius
Operation humidity	20 - 80 % RH
Nitrogen / Cooling water	Unnecessary

Observation example



Contact / Support

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at:

www.keysight.com/find/contactus