

NEWS RELEASE

Hitachi High-Tech

HITACHI

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Hitachi High-Technologies Launches the SU8040 Smooth Operating even at high magnification observation

Hitachi High-Technologies Corporation (TOKYO:8036) has developed the SU8040, a new type of Field Emission Scanning Electron Microscope (FE-SEM) that features a newly developed Regulus (REGULated Ultra Stable) Stage. The SU8040 will be introduced on August 1.

Now FE-SEM becomes an indispensable tool for semiconductor industry and cutting-edge nanotechnology material analysis. These samples often have nm(*1) order level structure, therefore it is necessary to use ultra high magnification such as hundreds of thousand times magnification. We have obtained great demands to operate the sample stage as the user likes even at the ultra high magnification because the capability can contribute to reduce the user's burdens and to improve the throughput.

To meet the needs, we have developed the SU8040 that features a newly developed Regulus Stage. The Regulus stage has the capability that can be operated smoothly even at ultra high resolution. The Regulus stage has adopted a high reliable conventional motor drive, but the capability has been greatly improved thanks to the newly developed motor drivetrain. Now the Regulus stage can achieve seamless stage operation and high throughput observation without any stress.

Taking advantage of the great stage performance, the cell count assist software is now available as an option. The cell count assist software recognizes the repeat patterns of DRAM/SRAM samples, and more, this allows automated identification of patterns for measurement and defect analysis, eliminating tedious manual searching.

Moreover, there is no compromise on the basic performance as a FE-SEM. The SU8040 has taken over all supreme performance that we had developed for the conventional FE-SEM model SU8000. And by optimizing innovative electron optics design, the resolution at ultra low landing voltages has been improved to 1.3nm at landing voltage 1.0kV. Along with increased resolution, practical imaging can now be achieved with the elimination of sample charging, and optimum contrast by using Hitachi original SE/BSE signal mixing function .

Hitachi High-Tech plans to exhibit the SU8040 at the Microscopy and Microanalysis 2010 to be held in Portland, Oregon USA from August 1, 2010. The company also plans to introduce the product at the JAIMA Show 2010 (Japan's Exposition of Analytical Instruments and Solutions) to be held at the Makuhari Messe International Convention Complex from September 1, 2010. Hitachi High-Tech will begin to ship the product in October 2010 and expects to achieve sales of 100 units per year.

*1:nm=1/1,000,000,000m

■ Ultra High resolution FE-SEM model SU8040

【Specification】

Secondary Electron Resolution	1.0nm (accelerating voltage 15kV, WD=4mm)*3
	1.3nm (landing voltage 1kV, WD=1.5mm)*3
Landing voltage	0.1~30kV
Magnification	100x~2,000,000x*4
Stage control	5-axis motor drive stage
Stage traverse range	X:0~110mm
	Y:0~80mm
	Z:-1.5~40mm
	T:-5~70°
	R:360°
Maximum specimen size	150mm dia. (maximum)
Stage repeatability	Less than +/-0.5um

*3:Based on the gap method by using Hitachi standard sample for resolution measurement.

*4: Based on the image size 345mm x 259mm @ 1,280 x 960pixels

【Features】

- 1)Smooth stage operability with newly developed Regulus stage
- 2)Ultra high resolution observation at ultra low landing voltage(1.3nm/1kV)
- 3)Variety of signal detection system from the combination of triple detectors and beam deceleration.
- 4)Cell count assist software (option)
- 5)Energy filtering function for low energy signal for charge-up reduction.



SU8040, a new type of Field Emission Scanning Electron Microscope

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