ADVANTEST®

MASK MVM-SEM®

E3640

Multi-Vision Metrology SEM Tool Supporting 1Xnm Node Photomask Patterning

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Advantest's new E3640 Multi Vision Metrology Scanning Electron Microscope (MVM-SEM) tool supports high-precision pattern measurement and 3D mapping of photomasks for nodes down to 1Xnm. A new entry in Advantest's widely adopted E3600 Series of SEM systems, the E3640 delivers significantly improved measurement accuracy and higher throughput. Its industry-best pattern measurement capability supports the coming shift to the 1Xnm node for semiconductor volume production. In addition to photomasks for standard semiconductor lithography, the E3640 also offers enhanced metrology performance for EUV masks, NIL templates and patterned media.

*:Multi Vision Metrology Scanning Electron Microscope

The following can be measured:

- Advanced photomasks
- EUV masks
- Nanoimprint templates

1Xnm Process Coverage

The E3640 utilizes a new electro-optical lens and upgraded signal processing hardware to deliver significantly improved measurement replication performance, compared to the previous system. 1Xnm node mask process development and production evaluation are now enabled. Meanwhile, the new system maintains software compatibility with other E3600 Series products, allowing users to effectively utilize existing software assets.

Support for Lithography Simulation

The E3640 can be linked with lithography simulation tools that assist developers to design mask patterns by simulating how photomask patterns will print onto wafers. The system feeds back essential pattern information through its link with the simulation tool.

Links with EDA Tools

The E3640 can also be linked with EDA tools to receive information about the coordinates and topography of areas to be measured. This enables more accurate measurement of "hot spots" (complex or extremely small patterns that are difficult to correct on-mask), contributing to improved mask development throughput.

3D Measurement

The E3640 inherits the proprietary algorithms and multi-detector configuration developed by Advantest for the E3630, facilitating real-time 3D observation and measurement of pattern widths, heights, and side wall angles.

MVM-SEM is either a registered trademark or a trademark of Advantest Corporation in Japan, the United States and other countries.

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https://www.advantest.com/

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