



## **Applied Materials Introduces New CD-SEM System for Sub-0.15 Micron Metrology**

February 1, 1999

**SANTA CLARA, Calif.--(BUSINESS WIRE)--Feb. 1, 1999--**

High-Throughput VeraSEM(TM) System Is First Metrology SEM to Provide Process Variation Monitoring (PVM(TM)) Technology for Rapid Detection of Process Excursions

Applied Materials, Inc. announces its new VeraSEM system for the automated measurement and imaging of sub-0.15 micron semiconductor device features. The VeraSEM is the industry's first metrology SEM that extends the capabilities of a conventional CD-SEM system well beyond critical dimensional (CD) measurement to provide monitoring of a variety of challenging process parameters.

VeraSEM's dramatic advances in metrology are made possible by its unique Process Variation Monitoring (PVM) technology that can speed customers' process development time and ensure better process control. Based on a completely new, extendible platform, the system is designed to handle both 200mm and 300mm wafer sizes, and is upgradable to measure sub-0.13 micron geometries for future technology requirements.

"The VeraSEM system moves the industry toward a new era of automated metrology with a winning combination of the highest available throughput, superb imaging and exceptional measurement precision," said Dr. Gino Addiego, president of Applied Materials' Process Diagnostics and Control Product Business Group.

As critical dimensions shrink, device manufacturers need additional functionality in their metrology tools to provide more information about their processes. "Traditional CD-SEM systems lack the sensitivity to measure small variations in line and contact hole profiles. Previously, these profiles had to be determined by off-line destructive testing. Our new PVM technology dramatically increases the process information our customers can obtain from a metrology SEM, allowing them to easily and quickly evaluate lithography as well as process excursions," added Dr. Addiego.

Using a unique column design and innovative new algorithms, PVM technology enables increasingly vital measurements to be made on the device, including line edge roughness, line edge width variation, and distinguishing open/closed contact holes. These PVM features, when used in conjunction with CD measurement, can shorten the time for development and provide tighter control of lithography and etch processes.

VeraSEM operates with the industry's highest throughput of any CD-SEM system, which is achieved through the integration of a new high-speed stage, fast wafer handling and highly accurate measurement algorithms. The VeraSEM offers excellent system matching, with shared library and database capabilities. Advances in electronics and software also contribute to elevated levels of precision in all aspects of the system's metrology.

"This system enables a new level of precision capability, with several device generations of built-in extendibility," Addiego noted. "We designed the VeraSEM's platform for extendibility in terms of both device geometry and wafer size. We expect several generations of Applied Materials' metrology-SEM technology to use this platform."

Commitments for VeraSEM systems have already been received from customers in North America and Europe. Shipments of VeraSEM systems are planned for the first calendar quarter of 1999.

Dataquest, a market research firm, estimates the market for CD-SEM systems at \$290 million in 1998, and projects it to grow to \$637 million by 2003.

Applied Materials, Inc. is a Fortune 500 global growth company and the world's largest supplier of wafer fabrication systems and services to the global semiconductor industry. Applied Materials is traded on the Nasdaq National Market System under the symbol, "AMAT." Applied Materials' web site is <http://www.AppliedMaterials.com>.