



Applied Materials' Inspection Systems Unlock the Potential of 300mm

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VeraSEM(TM) 3D -- SEMVision(TM) -- Compass(TM) -- Excite(TM) --

300mm Systems Enable Quick Ramp to High Yields

Applied Materials, Inc. announces its full line of leading-edge 300mm process diagnostics and control products for rapid, high-sensitivity, in-line wafer inspection and metrology. Unlocking the potential for greater economy with larger wafers, the VeraSEM 3D, SEMVision, Compass and Excite systems enable customers to achieve faster time to high yields and profitability through advanced process control.

"The transition to 300mm provides a tremendous opportunity for our metrology and inspection technologies. Customers are facing greater challenges in lowering defect density since each wafer contains many more die, and die size is increasing," said Gino Addiego, president of Applied Materials' Process Diagnostics and Control Group. "Applied Materials was the first company in the industry to ship 300mm wafer inspection and CD-SEM systems. Our 300mm metrology and inspection systems couple Applied Materials' expertise in 300mm process technology with our extensive diagnostics knowledge to maximize equipment efficiency and minimize costs. With our new Defect Source Identifier software, 300mm customers can fully utilize the information they get from our new generation of monitoring technologies to identify defects and take corrective action to eliminate them immediately."

Applied Materials' new Compass(TM) 300mm system inspects patterned wafers using the industry's highest levels of sensitivity and productivity. Designed for 0.10 micron and below technology, the system's OMNIView multi-perspective laser scanning technology ensures detection of the most critical yield-limiting defects while maintaining exceptional throughput. Used in high-volume production, the Compass system's On-The-Fly (OTF) automatic defect grouping separates critical from nuisance defects for early correction and minimal yield loss.

The Excite(TM) 300mm system is the industry's first production-level process tool monitoring system designed for detecting particles on both blanket (monitor) wafers and patterned (product) wafers. The system delivers rapid excursion detection at throughputs equivalent to most process tools, enabling its use as an in-line particle detection system for one or more tools in high-volume production. Its ability to process patterned product wafers can dramatically reduce the need for monitor wafers, a very costly item in 300mm fabs, resulting in increased process tool operating efficiency.

The industry leading SEMVision(TM) 300mm defect review scanning electron microscope (SEM) features Multiple-Perspective SEM Imaging (MPSI) to enable rapid re-detection of all defect types with accurate automatic defect classification (ADC). The system can review both unpatterned and patterned wafers with automatic energy-dispersive x-ray (EDX) for rapid root cause identification of process tool problems. An additional application, Automatic Process Inspection (API), enables the rapid review of process variations. Applied Materials has already begun shipping SEMVision to customers' 300mm fabs, where its ability to identify the source of process-induced defects is expected to be critical for early production ramp.

The VeraSEM 3D(TM) 300 mm critical dimension SEM (CD-SEM) system enables IC manufacturers to achieve higher yields and reduced production costs through early detection of process excursions at sub-0.10 micron geometries. The system features breakthrough sidewall imaging technology for controlling slope profiles, reducing the need for destructive cross-section testing. The system utilizes electronic beam tilt to achieve the required speed for in-line monitoring and accuracy.

Applied Materials (NASDAQ: AMAT) is a leader of the Information Age and the world's largest supplier of products and services to the global semiconductor and flat panel display industries. Applied Materials' web site is <http://www.appliedmaterials.com>.

CONTACT: Applied Materials

Betty Newboe, 408/563-0647 (editorial/media)

Carolyn Schwartz, 408/748-5227 (financial community)