



## **New Fab Efficiency Technologies Provide Breakthrough Capabilities for Applied Materials Systems**

July 10, 2000

SANTA CLARA, Calif.--(BUSINESS WIRE)--July 10, 2000--

New Fab Automation and Advanced Process Control Innovations Optimize

Fab Productivity and Yield for Company's 300mm and 200mm Systems

Applied Materials, Inc. today announced major innovations in process control and automation that will be available for more than 80 of its systems and applications. These Factory Efficiency Technologies (FET) leverage the company's strengths in process equipment, defect detection and process control software to enable higher yields and significantly greater fab efficiencies with its systems.

"We have implemented several strategies to increase the manufacturing availability of our systems that can offer a significant potential payoff to our customers in terms of improving factory economics," said Dr. Jaim Nulman, vice president of Applied Materials' Factory Efficiency Technologies Group. "These innovations take advantage of the synergy gained from our diverse family of technologies, ranging from chipmaking processes and wafer inspection to systems automation. We believe that this vision of fab operation efficiency will ultimately change the way fabs are run, allowing higher productivity and yield, faster time to market and greater profitability for chipmakers. Customers have already shown strong interest in this strategy by placing repeat orders for several of these new options."

Applied Materials is bringing a new line of integrated automation applications to its process systems and stand-alone metrology and inspection tools that perform defect identification and corrective action, continuous process and system health monitoring, and on-board maintenance scheduling. These innovative technologies are aimed at improving equipment uptime and availability.

The new SmartSys(TM) software application collects data from the tool's multiple sensors to continuously monitor the system's health and its process. Powered by a unique integration of multivariate equipment health monitoring technology developed by Triant Technologies, Inc., SmartSys software can automatically schedule maintenance and provide service personnel with detailed information about a fault or pre-fault condition. Using this novel technology, chipmakers can improve equipment utilization by running equipment beyond normally scheduled maintenance when process conditions remain within a defined window, and recover faster from scheduled and unscheduled downtimes.

The Defect Source Identification(TM) (DSI) package operates in conjunction with particle and other defect inspection tools to correlate defects found on a wafer with their process tool source and suggest corrective action. Using an extensive Defect Knowledge Library(TM) (DKL) and image analysis capability, the DSI enables operators to quickly find the root cause of defects and indicates corrective action. DSI technology assists chipmakers in rapid recovery from defect-related downs and yield limitations, and increases equipment productivity.

Applied Materials has offered integrated metrology for thickness measurement of dielectric films on its Mirra Mesa(TM) CMP and Producer(R) systems. The company now expands its in-line inspection capabilities for several of its systems with its Integrated Particle Monitor(TM) (IPM). These metrology and inspection options dramatically reduce or even eliminate the need for costly, non-value-added monitor and test wafers and enable higher equipment uptime. Operating from positions within the factory interface module, these inspection tools monitor product wafers as they exit the process tool loadlocks. In most applications, non-value-added operating time may be reduced 15 to 60 percent.

Applied Materials' 300mm product line features the company's factory interface (FI) module which receives cassettes from the factory distribution system and sends wafers to the processing system. In addition to metrology and inspection units, the FI is able to host automation software that links the systems to the factory. The FI can also operate in conjunction with the fully automated Bay Distributed Stocker(TM) (BDS) module. This module, which requires no added footprint, receives and sends up to seven 300mm wafer cassettes from a fab's automated intrabay overhead cassette delivery system. Its large storage capacity buffers WIP (work in process), reducing a wafer's cycle time through the fab and maximizing equipment productivity.

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, Santa Clara

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

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