Applied Materials Announces Revolutionary New Swift System, Completes Company's Total Solutions Approach for Ion Implantation

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SANTA CLARA, Calif.--(BUSINESS WIRE)--Nov. 29, 2000--

Swift and Quantum(TM) Two-System Solution Supports All Implant

Applications to 0.1 Micron and Below Logic and Memory
Devices, Improves Fab Wafer Flow Management

Applied Materials, Inc. today introduced its revolutionary new Swift(TM) ion implanter, the first and only system in the industry to provide the doping accuracy and extended operating range required for medium current and high energy applications. Combined with the company's market-leading low-energy, high current Quantum(TM) product, the Swift system completes Applied Materials' simplified, two-system Total Solutions(TM) approach to ion implantation for fabricating 0.1 micron and below logic and memory device designs.

David Wang, senior vice president, office of the president, Applied Materials, said, "Our Total Solutions approach addresses a new industry paradigm, combining innovative technology and high productivity with world-class total service and support solutions aimed at improving our customers' profitability."

"The Swift system marks Applied Materials' entry into a new market segment," said Sass Somekh, senior vice president, office of the president, Applied Materials. "Featuring major advancements in beamline design and scanning technology, the Swift system, with its medium current and high energy capability, takes chipmaking forward into the 100 nanometer generation. Together with our award-winning Quantum product, these two systems address both the technology and productivity demands of next-generation 200mm and 300mm processing."

Until today, chipmakers have required at least three different types of ion implant tools (high current/low energy, medium current, high energy) dedicated to perform specific functions and operating with mixed utilization rates. Such application-specific equipment can require high levels of capital investment and ongoing support, as well as extending a fab's wafer cycle time.

Applied Materials' simplified two-system approach is based on the device's two distinct doping applications: "conductive" implants which are used to form the basic transistor, and "parametric" implants which adjust the transistor's operating characteristics. Quantum's low energy, high current capabilities address all conductive implant applications, while Swift addresses all parametric implant applications by supporting high energy and medium current capabilities.

"Chipmakers' sub-0.18 micron designs are already becoming limited by the marginal ability of conventional medium current and high energy implanters to provide the required energy accuracy, dose and angle control in the critical parametric implant steps," said Craig Lowrie, vice president and general manager of Applied Materials' Parametric and Conductive Implantation Group. "The Swift system's revolutionary design overcomes these limitations by enormously increasing the precision of the implant process, especially in the areas of energy purity, tilt angle accuracy, and beam parallelism and control.

"The Swift system also offers significant economic benefits to our customers, potentially saving fabs up to 45 percent in overall capital and operating costs -- as well as enabling higher yields. We have demonstrated that this single system approach to parametric implantation can significantly improve equipment capacity usage and wafer flow management to eliminate what traditionally has been a major work in progress (WIP) bottleneck in semiconductor fabs."

One key to the new Swift system's advanced capabilities is its WhisperScan(TM) technology developed with Orion Equipment Inc., a strategic partner of Applied Materials. "The WhisperScan's superior implant angle control uses a reliable air-bearing mechanism that allows a smooth non-contact scanning motion and precise repositioning, with total angle variation within less than 0.5 degrees," said Dr. Peter Rose, ion implant pioneer and vice president of Orion. "This advance in wafer positioning improves doping accuracy and device performance by leading to greater control of leakage current and threshold voltage within the transistor."

According to the market researcher Dataquest, the total market for implant systems in 1999 was $649 million and is forecast to be $1.4 billion in 2004. The combined market for medium current and high-energy implant systems was estimated at $362 million in 1999 and is projected to grow to $821 million by 2004.

Applied Materials will be discussing the Swift ion implanter and its two-tool ion implant solution during an analyst meeting held today at 6:30 p.m. PST. A webcast of the meeting will be available live to all interested parties on Applied Materials' website at www.appliedmaterials.com under the "Investor Relations" section. A replay of the web cast will be made available on Thursday, November 30, and will be posted for 30 days.

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 industry. Applied Materials' web site is http://www.appliedmaterials.com.

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