



## Applied Materials Extends High Current Implant Leadership with New Applied Quantum III System

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Applied Quantum III System Boosts Low Energy Performance to  
Deliver 20-50% Gain in Productivity

Applied Materials, Inc. further strengthens its technology leadership in high current ion implantation with the new Applied Quantum(TM) III batch implanter which elevates low energy implant performance to levels never before achieved in the industry. The Quantum III system breaks the 50 wafer-per-hour throughput barrier for critical 90nm-generation low energy implants by increasing beam current 15-20 percent for most applications, while significantly reducing scan time, to provide a 20-50 percent gain in system productivity.

"The Applied Quantum III system features a number of proven technology and productivity enhancements that provide customers with increased process control and throughput for traditionally difficult and time-consuming implant applications," said Craig Lowrie, vice president and general manager of Applied Materials' Implant Division. "Design improvements in the Quantum III system's low-energy beamline allow faster and more accurate doping of source/drain and gate structures."

For process control, the Applied Quantum III's high-resolution total energy monitoring system enables closed loop control of implant energy accuracy to +/- 3.5V, allowing users to control the depth of shallow implants to within 1 angstrom. The system's unique In-Situ Particle Monitor (ISPM) detects particle excursions as they occur in real time, minimizing wafer risk, virtually eliminating test wafers and increasing tool uptime and availability. Most of the system's enhancements can be retrofitted to the large base of Quantum systems installed at fabs throughout the world.

"The move to nanometer-generation chips has made shallow junction implant technology extremely critical to device performance," said Dr. Randhir Thakur, vice president and general manager of Applied Materials' Front End Products Business Group. "The Quantum III system provides chipmakers with the extendibility to perform high-accuracy ultra-shallow junction implants for 90nm and below designs. We've already shipped Quantum III systems to customers in the U.S. and Taiwan, with additional systems on order from multiple customers."

Applied Materials (Nasdaq: AMAT), the largest supplier of products and services to the global semiconductor industry, is one of the world's leading information infrastructure providers. Applied Materials enables Information for Everyone(TM) by helping semiconductor manufacturers produce more powerful, portable and affordable chips. Applied Materials' web site is [www.appliedmaterials.com](http://www.appliedmaterials.com).

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