



Applied Materials Launches Silicon Etch System for Sub-0.15 Micron Chip Generations

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SANTA CLARA, Calif.--(BUSINESS WIRE)--June 24, 1999 --

Silicon Etch DPS Plus(TM) Centura(R) Targets
Leading Edge Chip Designs With Technology,
Productivity Advancements

Applied Materials, Inc., the leading supplier of etch systems to the worldwide semiconductor industry, announces the new Silicon Etch DPS Plus Centura for very advanced chip manufacturing. Significantly extending the capabilities of the company's market-leading Silicon Etch DPS Centura system, the DPS Plus features extensive technical advancements, increased system productivity with higher uptime, reliability and throughput, as well as lower cost of consumables.

"The Silicon Etch DPS Plus system incorporates critical technology advancements to our DPS product that extend its performance for 0.15 micron and beyond device generations," said Brad Hansen, general manager of the Silicon Etch Division at Applied Materials. "Many of these enhancements were developed to give customers critical dimension control to less than 10 nanometers, with reduced defect levels and damage-free performance for thin gate oxides. At the same time, the system eliminates productivity-limiting dry cleans for most applications, allowing 15-25 percent higher net throughput and uptime."

One key advancement available with the Silicon Etch DPS Plus is its proprietary Predictive Endpoint(TM) feature. This technology enables a precisely controlled, automated "soft-landing" approach that signals the etch process to switch to a high selectivity overetch prior to contacting the gate oxide. This can be a key capability for extending gate etch performance to the 0.1 micron node and beyond, where gate oxide thickness is expected to be less than 20 angstroms. Predictive Endpoint is the only technology of its kind to be proven in volume production; it is already being used for "etch to depth" applications in more than 80 Silicon Etch DPS process chambers. Several customers are also now using it to perform critical gate etching of their most advanced device designs.

"For next-generation gate structures, even small variations in dimensional control are unacceptable in a production environment. Our DPS Plus Centura's proprietary source design provides the industry's leading CD performance, as well as superior wafer-to-wafer and chamber-to-chamber matching," said Hansen.

To extend the DPS technology to 0.13 micron and beyond, Applied Materials has added features such as new RF (radio frequency) generators with solid-state matching for faster tuning, wider operating capability, and greater reliability. Several enhancements have been made to the DPS source design that improve deposition control, defect performance, and uniformity of results on the wafer. A new dome temperature control design increases heat transfer and improves temperature accuracy and reliability. A dual cooling zone ceramic electrostatic chuck is available that offers an additional process tuning knob for sub-0.13 micron etching, and virtually eliminates consumable parts inside the chamber.

Introduced in 1997, the Silicon Etch DPS Centura is the global market leading system for silicon etching and one of the industry's most successful etch products. More than 350 silicon etch DPS chambers are installed around the world; greater than 80 percent of them are operating at 0.25 micron or below design rules. In gate etch for advanced logic, which is one of the industry's most critical silicon etch applications, the system has demonstrated clear technology and market leadership. It is being used in production or in advanced development for logic, ASIC and memory devices at 15 of the top 20 semiconductor manufacturers worldwide.

The DPS Plus chamber is integrated on Applied Materials' next-generation etch platform, the new Etch Centura II, that responds to customers' continuing requirements for more cost efficient, high productivity systems. The Etch Centura II features fewer overall parts, increased component commonality, greater modularity for improved system reliability and a dual-blade Centura VHP+ robot that enables up to 15 percent higher throughput. For faster system installation time and increased serviceability, the enhanced platform offers a new facilities interface; a new system controller and a/c distribution system provide reduced footprint.

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>.

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