



Applied Materials Introduces Breakthrough System for Shallow Trench Isolation Etch

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Ultra-High Productivity DPS STI(TM) Centura(R) Delivers Enabling Etch Technology for Next-Generation Shallow Trench Isolation Structures

Applied Materials, Inc., the world's leading supplier of etch equipment to the semiconductor industry, introduces the DPS STI Centura system for etching shallow trench isolation (STI) structures in advanced logic and memory devices.

The DPS STI Centura provides breakthrough enabling technology that significantly increases overall equipment effectiveness to deliver a 20 percent improvement in system throughput and uptime over currently available competitive systems for STI etch applications. Key to the exceptional productivity gains realized by the DPS STI Centura is a unique in situ process that eliminates the need for frequent dry cleaning of the process chamber.

"In addition to delivering excellent on-wafer results for sub-0.25 micron devices, the new DPS STI system dramatically elevates the productivity available from a shallow trench isolation etcher," said Brad Hansen, general manager of the Silicon Etch Division at Applied Materials. "Our unique process methodology results in a non-depositing application, thus eliminating the requirement for time-consuming dry chamber cleans and enabling significant gains in net throughput and system uptime. In addition, this mode of operation eliminates the process drift and dummy wafers that are characteristic of depositing processes and dry cleaning. As a result of this advanced technology, we are able to provide our customers with lower operating costs along with the industry's most advanced STI etch process."

Shallow Trench Isolation is a technique used by semiconductor manufacturers to increase the density of leading-edge logic and memory devices by allowing more closely-spaced transistors. Applied Materials estimates that STI etching currently accounts for more than 20 percent of the silicon etch market and expects this market to increase for sub-0.25 micron device generations.

"The DPS STI Centura system represents the latest extension of the DPS (decoupled plasma source) etch technology, which is in use at nearly all of the top 25 semiconductor manufacturers. By leveraging our world class engineering expertise, we are able to deliver a STI solution to our customers that provides unequaled productivity advantages," noted David Bergeron, president of Applied Materials' Etch Products Business Group. "Customers who are utilizing these advanced systems and techniques in their fabs are extremely excited about their capabilities and continue to rely on the DPS system to help create their most advanced structures in a reliable, repeatable and cost-effective manner."

Shallow Trench Isolation etching is considered to be one of the most technically demanding etch applications. The DPS STI Centura meets the spectrum of diverse customer requirements for top and bottom corner rounding, as well as profile angle and critical dimension control. Profiles from 70 degrees to greater than 87 degrees are achievable with minimal profile microloading, providing etch depth uniformity of less than 3 percent. The system also offers superior chamber-to-chamber matching for all applications, which is a key requirement for manufacturing sub-0.25 micron devices.

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>.