



Applied Materials Delivers Advanced Metal Hardmask Technology for Patterning Ultralow k Dielectrics

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SANTA CLARA, Calif.--(BUSINESS WIRE)--Feb. 27, 2007--Applied Materials, Inc. introduces the Applied Endura(R) Metal Hardmask system with new Versa(TM) TTN PVD technology that delivers the industry's most advanced TiN(1) hardmask film for patterning copper/low k interconnects and high aspect ratio contact structures. An integral component of a leading-edge patterning stack, this metal hardmask film enables superior CD(2) and profile control while preserving the k-value of ultralow k dielectric materials for increased chip speed and yield. The system is designed for high volume manufacturing at the 45nm and 32nm nodes and provides a throughput of up to 85 wafers per hour, with 50% lower cost of consumables than competitive systems.

"New patterning materials and processes have become increasingly vital to fabricating high performance logic and memory devices," said Dr. Farhad Moghadam, senior vice president and general manager of Applied Materials' Thin Films Group. "For dielectric films with k-values less than or equal to 2.5, the metal hardmask patterning sequence enables customers to realize lower effective k-values by minimizing physical damage to the dielectric and reducing the thickness requirement for the underlying barrier film. The high etch selectivity of the TiN film allows for a 5x thinner patterning film stack compared to traditional photoresists, with thickness uniformity and defectivity levels compatible with 32nm manufacturing."

Integrating this metal hardmask technology with the Applied Centura Enabler(R) Etch and Applied Opus(TM) AdvantEdge(TM) Metal Etch systems provides a comprehensive deposition and etch solution for damascene structures with excellent CD uniformity, line edge and vertical feature profiles with minimal low k damage, and high productivity.

Leading manufacturers have already qualified Applied's TTN hardmask technology for 65nm manufacturing. The uniformity and productivity advancements of the Applied Versa TTN ensure this technology will be extendible to the 32nm node and to double-patterning sequences. Applied's portfolio of advanced patterning films also includes the APF/DARC film stack, which combines the APF amorphous carbon hardmask film with a dielectric anti-reflective layer for advanced STI, gate and contact applications. With over 100 Applied Producer APF systems installed worldwide, APF films enable improved CD control and line edge roughness for the 45nm node and beyond. Visit http://www.appliedmaterials.com/products/hardmask_4.html.

Applied Materials, Inc. (Nasdaq:AMAT) is the global leader in Nanomanufacturing Technology(TM) solutions with a broad portfolio of innovative equipment, service and software products for the fabrication of semiconductor chips, flat panels, solar photovoltaic cells, flexible electronics and energy efficient glass. At Applied Materials, we apply Nanomanufacturing Technology to improve the way people live. Learn more at www.appliedmaterials.com.

(1) TiN: titanium nitride

(2) CD: critical dimension

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CONTACT: Applied Materials, Inc.

Betty Newboe, 408-563-0647 (Editorial/Media)

Randy Bane, 408-986-7977 (Financial Community)

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