



Applied Materials Extends Lithography-Enabling Solutions with New Advanced Patterning Film

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SANTA CLARA, Calif.--(BUSINESS WIRE)--July 10, 2006--Applied Materials, Inc. today announced its Applied Producer(R) APF(TM)-e(1) system for depositing advanced patterning films in less than or equal to 70nm Flash and DRAM memory devices and less than or equal to 45nm Logic applications. This key enhancement to Applied's first-generation APF film meets customers' critical need for greater optical transparency to deliver precise lithographic alignment in thicker (greater than 2,000Å) hardmask layers. The APF-e film's cost-effective hardmask technology features high selectivity to polysilicon and oxide to enable the key etch patterning steps required for continued geometric scaling.

"Today's tough patterning challenges require innovative pattern transfer solutions that maximize the lithography process window and improve overall fab economics, especially in high-density chips like Flash and DRAM," said Dr. Farhad Moghadam, senior vice president and general manager of Applied Materials' Thin Films Product Business Group. "Our first-generation APF film is one of the industry's most successful CVD(1) applications and has had a major impact on customers' ability to move to 90nm and below dimensions. The new APF-e film enables customers to cost-effectively pattern nano-scale features without additional integration complexity, while reducing their reliance on next-generation lithography solutions."

Applied's APF-e film is highly selective to polysilicon (6:1) and oxide etching (15:1) and eliminates the line edge roughness associated with photoresist-only schemes, providing customers with much tighter critical dimensional control for improved device performance and yield. APF-e technology also eliminates the expensive wet cleaning steps needed by multi-layer resist processes.

The APF optically engineered patterning film stack combines the CVD-based amorphous carbon APF or APF-e hardmask films with Applied's DARC(R)(1) films to enable advanced lithography and etching using standard lithography tools. Applied's APF films are already being used in up to seven layers in 70nm Flash memory chips, including shallow trench isolation and sub-40nm gate definition, plus other key applications. Even more layers are likely to be implemented in next-generation devices. More information on these technologies can be found at www.appliedmaterials.com/products/litho_enabling_solutions.

Applied Materials, Inc. (Nasdaq:AMAT) is the global leader in nanomanufacturing technology(TM) solutions for the electronics industry with a broad portfolio of innovative equipment, service and software products. At Applied Materials, we apply nanomanufacturing technology to improve the way people live. Learn more at www.appliedmaterials.com.

(1) APF-e = advanced patterning film-enhanced; CVD = chemical vapor deposition; DARC = dielectric anti-reflective coating

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