



Applied Materials Enables Advanced Lithography with New DARC 193 Film

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Unique Dielectric Anti-Reflection Coating (DARC) Provides CD Control and Photoresist Compatibility for 90nm and Below Process Integration

Applied Materials, Inc., the leading supplier of CVD systems to the semiconductor industry, announces its new DARC(R) 193 dielectric anti-reflective coating film, designed to enable the fabrication of sub-100nm chips. The DARC 193 film is the industry's first and only production-worthy dielectric anti-reflective coating to overcome the challenges of 193nm lithography by providing the photoresist compatibility and precise CD (critical dimension) control required for integration with customers' advanced devices.

"During the development of this new DARC film we were heavily engaged with lithography suppliers and photoresist manufacturers in order to address the complex challenges of 193nm patterning," said Dr. Farhad Moghadam, vice president and general manager of Applied Materials' Dielectric Systems and Modules Product Business Group. "Since the introduction of our original DARC film in 1996, Applied Materials has led the industry in lithography-enabling CVD coatings. The DARC 193 product is an extension of this key film, providing superior integration with low k dielectrics in dual damascene interconnect schemes, as well as transistor-level applications. We already have customers in the U.S., Europe and Taiwan using this film to qualify their 90nm-generation production processes."

The new DARC 193 film addresses two of the major challenges chipmakers face in implementing 193nm lithography: photoresist poisoning and CD variation. Formulated without nitrogen, the DARC 193 film minimizes photoresist poisoning, enabling compatibility with new 193nm chemistries. Providing tight CD control, the DARC 193 film is optically tuned to achieve less than one percent reflectivity across the wafer. The film's excellent adhesion to advanced low k dielectrics allows easy integration in dual damascene designs.

The DARC 193 film is available on Applied Materials' 200mm Producer(R) system and 300mm Producer SE platform. The systems' single-wafer architecture provides high-quality, homogeneous films with optimum productivity and flexibility.

"One of our key advantages in developing this new film was our full access to Applied Materials' Maydan Process Module Technology Center, which contains the latest 193nm lithography and track technology, plus a variety of test chip designs, in our own facilities. The DARC 193 film has been extensively tested in a variety of integration situations using 193nm lithography and track tools so that it can be rapidly qualified and placed in production with a high degree of confidence," added Dr. Moghadam.

Applied Materials, 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.

Note: A photo is available at URL: <http://www.businesswire.com/cgi-bin/photo.cgi?pw.022503/bb2>

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