



Applied Materials' Low k Films Selected by NEC for New 90nm Process Technology; Black Diamond and BLOk Low k Films Chosen for Manufacturability and Ease of Integration

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SANTA CLARA, Calif., Apr 14, 2003 (BUSINESS WIRE) -- Applied Materials, Inc. today announced that NEC Electronics Corp. has selected its Black Diamond(TM) and BLOK(TM) low k dielectric films for manufacturing NEC's most advanced UX6 chips. The Black Diamond and BLOk films are fully qualified for volume production, which is expected to begin in July 2003. NEC's UX6 chips are designed using state-of-the art 90nm process technology and feature 100 million transistors, nine levels of copper interconnects and clock speeds above 1 GHz.

NEC developed UX6 90nm process technology to enable next-generation high-performance, low-power ASIC designs for applications such as broadband communications, high-end computing and storage systems, and mobile computing devices. Integrating Applied Materials' Black Diamond and BLOk low k dielectric films for interconnect applications provides greater than 20 percent reduction in capacitance compared to traditional materials, enabling the production of faster, more power-efficient chips.

Dr. Kunio Nakamura, general manager of Advanced Technology Development Division of NEC Electronics, said, "We chose Applied Materials' low k dielectric solutions for our UX6 process based on their capability to be integrated within the interconnect structure and their production manufacturability, including compatibility with packaging technologies. Using these Applied Materials low k films, we have successfully achieved our target yield at 90nm and we regard the films as the strongest contender for 65nm designs."

Introduced in November 1998, Black Diamond is a family of CVD (chemical vapor deposition) low k dielectric products that have demonstrated excellent thermal-mechanical properties and integration with existing lithography, etch and CMP (chemical mechanical polishing) processes. BLOK film provides a next-generation CVD low k solution for copper barrier, hardmask and etch stop applications, enabling chipmakers to further reduce the dielectric constant of their overall copper damascene structures. Both Black Diamond and BLOk films are deposited using Applied Materials' high-throughput Producer(R) CVD system.

Dr. Farhad Moghadam, vice president and general manager of Applied Materials' Dielectric Systems and Modules Product Business Group, said, "NEC is a world leader in both chip technology and fab operations, and we're pleased that NEC Electronics has selected our Black Diamond and BLOk low k solutions to meet the challenging needs of its advanced 90nm fabrication technology. We're confident our low k products can help NEC maintain its competitive edge by providing extendibility to multiple generations of smaller and higher-performing devices while also using today's industry-standard manufacturing processes to deliver high productivity and low cost of ownership."

Applied Materials (Nasdaq:AMAT), 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 <http://www.appliedmaterials.com>.

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