



International SEMATECH Validates Manufacturing Capability of Applied Materials' Low Solution for Copper Interconnects

February 28, 2000

SANTA CLARA, Calif.--(BUSINESS WIRE)--Feb. 28, 2000--

--Successful Results Achieved with Black Diamond for Production of

Sub-0.18 Micron Chips--

Applied Materials, Inc. (Nasdaq:AMAT) today announced that industry consortium International SEMATECH has validated its Black Diamond(TM) low (kappa) dielectric film for production of advanced interconnect structures in sub-0.18 micron devices.

SEMATECH successfully fabricated level 1 copper damascene test structures with Black Diamond. These structures were built using existing etch and CMP processes and tools, a key issue for successful copper-based interconnect fabrication.

Paul Winebarger, director of interconnect at International SEMATECH noted, "SEMATECH's goal in evaluating Black Diamond is to provide member chipmakers with information that will enable them to more rapidly integrate low (kappa) dielectrics into their advanced manufacturing processes. The program focused on critical issues, including extensive material characterization, process integration, electrical performance and manufacturability. Our successful evaluation of Black Diamond, performed in conjunction with one of our member companies, will provide the consortium with valuable data to expedite the use of this advanced dielectric material in their next-generation products."

Introduced in 1998, Black Diamond is a family of low (kappa) dielectric films that can be extended beyond a dielectric constant of (kappa) = 2.7 for sub-0.1 micron chip technologies. Low (kappa) dielectrics rather than conventional oxides will be required to allow continued miniaturization of integrated circuits while still providing higher speed and performance. International SEMATECH's results provide techniques and knowledge that can accelerate the fabrication of chips using copper and low (kappa) materials. International SEMATECH's assessment of Black Diamond's manufacturing capability was based on multiple "IRONMAN" tests that involved 2,000 wafers run on Applied Materials' Centura(R) system and 5,000 wafers processed on the Producer(TM) CVD system.

"A key challenge for the industry is successfully integrating many of the new low (kappa) materials into next-generation multi-level copper damascene device structures," said Dr. Farhad Moghadam, corporate vice president and general manager of Applied Materials' Dielectric Systems and Modules Product Group. "Not only has Black Diamond demonstrated manufacturing capability, it is also a cost-effective, long-term solution that is extendible for multiple generations."

To further lower the overall (kappa) value of chip interconnect structures, Black Diamond can be used with Applied Materials' BLO(kappa)(TM) (Barrier LOw (kappa)) dielectric CVD barrier and etch stop film. Like Black Diamond, the BLO(kappa) process uses Applied Materials' industry-leading Centura and Producer CVD platforms, allowing chipmakers to rapidly integrate the process into their production lines using proven, well-known hardware. International SEMATECH will be evaluating this and other Applied Materials' advanced low (kappa) films in the near future.

International SEMATECH is a non-profit research and development consortium of semiconductor manufacturing companies, including AMD, Conexant, Hewlett-Packard, Hyundai, Infineon Technologies, Intel, IBM, Lucent Technologies, Motorola, Philips, STMicroelectronics, TSMC, and Texas Instruments. Additional information is available at www.sematech.org.

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>.

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