



## **IMEC Demonstrates Applied Materials' Black Diamond CVD Low k Technology Extendible to k**

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SANTA CLARA, Calif.--(BUSINESS WIRE)--July 10, 2000--Applied Materials, Inc., the leading supplier of low dielectric constant (k) process solutions to the semiconductor industry, announced today that its ongoing collaboration with Belgium's IMEC microelectronics research center has achieved breakthrough results in demonstrating the extendibility of Black Diamond(TM) CVD (chemical vapor deposition) technology to k

"We are very excited about our recent results on Applied Materials' next-generation Black Diamond low k film which proves that CVD films are extendible beyond the 2.7-3.0 range," said Dr. Luc Van den Hove, vice president, Silicon Process Technology of IMEC. "We look forward to continuing our work with Applied Materials on further developing this film and enhancing its overall process."

Introduced in 1998, Black Diamond is a line of CVD low k dielectric films designed to enable the continued miniaturization of chips with increasing speed and performance. The product line's first generation film, targeting 0.13-0.10 micron devices, demonstrates excellent thermal-mechanical properties and is easily integrated with existing lithography, etch and CMP (chemical mechanical polishing) processes. Black Diamond can also be used in combination with Applied Materials' BLOk barrier low k film to provide an effective k

Both Black Diamond and BLOk films can be deposited using Applied Materials' high-productivity Producer(R) CVD system. By using conventional CVD equipment, customers can extend existing systems and avoid costly proprietary chemicals typically needed by spin-on technologies. IMEC's results show that this CVD product line can be extended well below current requirements.

Dr. Shang-Yi Chiang, vice president of Research and Development at Taiwan Semiconductor Manufacturing Company (TSMC), the world's largest foundry, said, "We are very pleased with the results demonstrated by IMEC using Applied Materials' low k CVD technology and plan to evaluate this film for our future chip generations."

"Our customers want a low k film that can be integrated over six levels of copper interconnects, is easy to implement in manufacturing, yet has sufficient extendibility to enable further reduction in k-value over several device generations," said Ashok Sinha, president of Applied Materials' Interconnect Systems and Modules Business Group. "Thanks to the close cooperation among our dielectric deposition, etch and lithography support groups within our Equipment and Process Integration (EPIC) facility, we are able to integrate and test dual damascene process modules in parallel with our customers and speed up our learning cycles."

"Ongoing work with facilities such as IMEC through our Applied Materials Europe organization, as well as with key customers in our EPIC facility, have allowed us to make exceptional progress in low k technology," said Farhad Moghadam, vice president and general manager of the Dielectric Systems and Modules Product Group of Applied Materials.

Applied Materials (NASDAQ: AMAT) is a leader of the Information Age and the world's largest supplier of products and services to the global semiconductor and flat panel display industries. Applied Materials' web site is <http://www.appliedmaterials.com>.

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