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Applied Materials Announces Advanced CVD Aluminum Technology

Applied Materials, Inc. today announced its Applied CVD Al process chamber for building current and next-generation high-density interconnects in Flash and DRAM memory chips. Using aluminum deposition technology, which continues to be the interconnect material of choice for memory applications, Applied's CVD Al chamber enables chipmakers to replace tungsten plugs with aluminum -- which has 50% lower electrical resistance -- while also reducing processing steps and cost.

"As leading DRAM and flash memory chipmakers move to sub-90nm chip generations, our CVD Al technology enables faster chips than conventional tungsten plug-aluminum slab technology and extends cost-effective aluminum interconnects for several more device generations," said Dr. Farhad Moghadam, senior vice president and general manager of Applied Materials' Thin Films Group. "Rapid acceptance by customers during the evaluation of our CVD Al technology has resulted in the shipment of multiple chambers, many of which are being used in today's high volume 90nm manufacturing."

The Applied Endura CVD Al process deposits a thin, highly conformal metal nucleation layer with excellent step coverage in the chip's via structure. Combined with PVD aluminum fill technology on the high-productivity Endura platform, the CVD Al chamber enables unmatched via fill at low thermal budget for improved yield and device reliability.

Applied Materials' CVD aluminum technology enables customers to meet the accelerating demand for Flash memory chips, the fastest-growing segment of the semiconductor industry, by providing the low cost, high-efficiency and extendibility that can be quickly implemented into current production ramps. Capable of meeting flash requirements to at least the 50nm generation, Applied's CVD Al provides chipmakers with greater flexibility in choosing the timing of their future interconnect technologies, allowing simpler and faster node transitions than copper, without the need for additional process technologies.

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