



Applied Materials Leads the Industry with Innovative Transistor Gate Stack Technology

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SANTA CLARA, Calif.--(BUSINESS WIRE)--July 11, 2005--Applied Materials, Inc. led the industry in advanced transistor gate fabrication technology in 2004 with its Applied Centura(R) DPN Gate Stack system, achieving 71% market share, according to market researcher Gartner Dataquest.(1) Introduced in 2001, Applied's single-wafer Gate Stack tool revolutionized gate technology, becoming the first plasma nitridation system on the market. The system replaced batch furnaces at many customer fabs for 90nm and below device manufacturing by enabling significantly improved transistor performance.

Historically, chipmakers have used thermally-grown oxides or oxynitrides to form the gate dielectric, but as devices became smaller and gate dielectrics thinner, leakage currents increased. Applied's DPN technology, a key chamber in its integrated Gate Stack system, uses a decoupled plasma to introduce nitrogen near the top surface of the gate dielectric, significantly reducing transistor leakage currents.

"Applied Materials worked closely with customers to develop plasma nitrided gate stack technology to address their critical 90nm scaling issues and to provide a viable path to sub-65nm chip generations," noted Dr. Randhir Thakur, group vice president and general manager of Applied Materials' Front End Products group. "As a result, our DPN Gate Stack technology has enabled customers to realize up to 10x reduction in gate leakage in their devices. This success has led to the rapid proliferation of our system throughout the industry."

In addition to its innovative DPN chamber, the Applied Centura Gate Stack system includes a RadOx(TM) chamber for gate oxide formation, a Radiance(R)Plus chamber for post nitridation anneal and a POLYgen(TM) chamber for polysilicon deposition. Integrating these processes on one platform provides optimal interface control for increased device speed and improves the manufacturability of the entire gate stack.

The Applied Centura DPN Gate Stack system is part of Applied Materials' suite of RunFastStayCool(TM) solutions enabling advanced transistor performance. For more information on this system, please visit http://www.appliedmaterials.com/products/fep_centura_dpn.

Applied Materials, Inc. (Nasdaq:AMAT), headquartered in Santa Clara, California, is the largest supplier of equipment and services to the global semiconductor industry. Applied Materials' web site is www.appliedmaterials.com.

(1) "Market Focus: Wafer Fab Processing Equipment Trends, Worldwide, 2000-2004," Dean Freeman; Gartner Dataquest Report, June 17, 2005.

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