



Applied Materials Introduces New Polygen Systems for Low-Cost Single-Wafer Polysilicon Deposition

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Polygen(TM) Centura(R) and Polygen Centura 300 Systems Provide

Cycle Time, Process Quality and Cost of Ownership

Advantages Over Batch Technologies

Applied Materials, Inc. introduces the Polygen Centura, its latest 200mm and 300mm systems for the deposition of polysilicon films, combining advanced CVD (chemical vapor deposition) processing technology with high productivity, low consumables cost and easy maintainability. The Polygen systems provide film morphology control and uniform in-situ doping capability required for advanced transistor formation, along with high reliability and low cost of ownership.

"The new Polygen systems extend Applied Materials' technical superiority in polysilicon deposition while reducing operating cost, enabling it to compete directly with batch furnaces for mainstream poly applications," said Paul Meissner, general manager of Thermal Processing and Gate Products at Applied Materials. "Our customers are seeing the advantages of single-wafer poly technology as device geometries shrink. The new Polygen chamber also provides significant benefits in integrated applications where it can be combined with RTP (rapid thermal processing) chambers on a single platform for manufacturing advanced gate structures."

The Polygen systems offer control of polysilicon grain size and orientation, enabling chip manufacturers to tailor dopant distribution according to device requirements. The system's in-situ doping capability and extendibility to the deposition of polycrystalline silicon-germanium (SiGe) films offer customers a potentially significant technical advantage in making high-speed transistors for future devices.

The Polygen systems' robust chamber design, based on Applied Materials' production-proven xZ chamber architecture, enables controllable temperature uniformity for extremely uniform films. Extensive use of ceramic parts and in-situ chamber cleaning technology deliver extended operation with low particle and metal contamination levels.

For chipmakers that want to reduce cycle time in the fab, the Polygen system's short single-wafer processes can overcome the bottlenecks of long furnace process steps. This single-wafer capability can help chipmakers ship products days earlier, which is especially important to foundries and to ASIC suppliers that need to reduce development and production cycles to keep up with today's increasing demand for new generations of chips.

Production shipments for the Polygen Centura system are expected to begin in the third calendar quarter of 2000.

According to Dataquest, a market research firm, the market for polysilicon deposition systems was estimated to be \$258 million in 1999.

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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