



Applied Materials Extends Epi Leadership with Innovative Critical Pre-Clean Technology

March 29, 2010

SANTA CLARA, Calif., Mar 29, 2010 (BUSINESS WIRE) --Applied Materials, Inc. today announced the semiconductor industry's first integrated low temperature pre-clean for epitaxial (epi) applications which is available on its market-leading Applied Centura(R) RP Epi system. The new pre-clean chamber, which features Applied's proven Siconi(TM) technology, delivers the critical process performance needed for scaling sensitive, strain-engineered features in sub-32nm logic devices. In addition, since the pre-clean and epi processes are integrated on the same vacuum platform, queue time is eliminated and interfacial contamination is reduced by more than an order of magnitude over stand-alone systems, creating pristine silicon surfaces for defect-free epi crystal growth.

Conventional pre-clean technology requires a wet clean followed by an 800°C bake. In advanced 32nm and below devices, the aggressive wet clean can erode circuit structures, while the high-temperature bake can significantly weaken existing strain levels. In contrast, the Siconi technology's patented plasma-based cleaning chemistry provides gentle, yet highly effective, oxide removal at less than 130°C, maintaining optimal strain and preserving delicate features.

"Applied has built its longstanding leadership in epi deposition by continuously extending the technology with new, innovative capabilities," said Steve Ghanayem, vice president and general manager of Applied's Front End Products business unit. "Until now, leading-edge chipmakers have been unable to fully realize the transistor speed gains provided by multiple epi layers. The integrated Siconi pre-clean solves this problem, enabling customers to derive the full benefit of strain engineering for fabricating their highest performance devices."

Designed for energy efficiency, the integrated Siconi process significantly reduces electricity and water consumption. By eliminating the need for a high-temperature bake, the Siconi pre-clean can save the equivalent of over 36,000kWh of energy or 40,000 pounds of CO₂ emissions annually.*

The integrated Siconi pre-clean technology has been enthusiastically received by chipmakers and is in use at multiple device manufacturers worldwide. The installed base of Centura RP Epi systems can be upgraded with the Siconi technology through a cost-effective upgrade package. For more information on Applied's epi solutions, visit http://www.appliedmaterials.com/products/strain_engineering_4.html.

Applied Materials, Inc. (Nasdaq:AMAT) is the global leader in Nanomanufacturing Technology(TM) solutions with a broad portfolio of innovative equipment, service and software products for the fabrication of semiconductor chips, flat panel displays, solar photovoltaic cells, flexible electronics and energy efficient glass. At Applied Materials, we apply Nanomanufacturing Technology to improve the way people live. Learn more at <http://www.appliedmaterials.com>.

* Calculated using SEMI S23 methodology for an Applied Centura^(R) RP Epi system configured with two epi chambers and one pre-clean chamber.

Photos/Multimedia Gallery Available: <http://www.businesswire.com/cgi-bin/mmg.cgi?eid=6230025&=en>

SOURCE: Applied Materials, Inc.

Applied Materials, Inc.

Betty Newboe, 408-563-0647 (editorial/media)

Michael Sullivan, 408-986-7977 (financial community)