



Applied Materials' Breakthrough 300mm Copper Electroplating System Drives Interconnect Technology Beyond the 90nm Barrier

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SlimCell(TM) ECP System's Individual-Cell Chemistry Enables Industry's First Multi-Step Copper Plating Capability for 65nm and Beyond Copper Chips

Applied Materials, Inc. introduces its 300mm SlimCell(TM) electrochemical plating (ECP) system that overcomes the limitations of existing plating technology to deliver a cost-effective, production-worthy tool for current generation manufacturing and groundbreaking capability for 65nm and beyond copper chip development. Key to the SlimCell system is its unique individual-cell chemistry that enables multi-step ECP processing while setting benchmarks in gapfill and defect performance, and cost of ownership.

"Much like the 1980s' revolutionary shift from batch to single-wafer processing, the SlimCell system breaks away from the limitations of the batch chemistry approach to electroplating to set new standards in performance and tool extendibility," said Russell Ellwanger, vice president and general manager of Applied Materials' PPC Product Group. "This new system redefines economics and operating performance for current production, and its innovative individual-cell chemistry provides the key to multi-step, multiple-chemistry electroplating that will drive ECP technology far into the nanometer era."

As the semiconductor industry rapidly implements copper chip designs in 300mm wafer fabs, the demand for copper deposition systems increases significantly. According to Dataquest, a market research firm, the market for copper electroplating systems totaled \$161 million in 2002 and is projected to grow to over \$565 million by 2006.

Rather than employing a common chemical bath for multiple plating cells, the SlimCell system's advanced design provides individual chemical baths to each small-volume plating cell. As a result, chipmakers can use different chemicals in each plating cell to perform multi-step processing. This multi-step capability optimizes the gap-fill and planarization performance of the plating sequence and is critical to achieving the yield required beyond the 90nm device generation.

The SlimCell system's individual-cell chemistry approach reduces chemical cost per wafer by more than 2x over competing systems, regardless of system utilization, and reduces the floor space needed for remote components significantly compared to conventional systems.

The SlimCell system also features new post-plating technologies for the integrated bevel clean (IBC), Spin-Rinse-Dry (SRD) and annealing components. Complementing the advanced plating cell and system architecture, these enhancements contribute to the SlimCell system's remarkably low defect levels, including backside contamination.

Commitments for the SlimCell system have been received from customers in the U.S., Europe, Japan and Taiwan. The SlimCell technology has been qualified as best-of-breed technology with lowest cost and defectivity for pilot 300mm production and is already being used for 90nm and 65nm process development.

Applied Materials (Nasdaq:AMAT), the largest supplier of products and services to the global semiconductor industry, is one of the world's leading information infrastructure providers. Applied Materials enables Information for Everyone(TM) by helping semiconductor manufacturers produce more powerful, portable and affordable chips. Applied Materials' web site is www.appliedmaterials.com.

Note: A photo is available at URL:

<http://www.businesswire.com/cgi-bin/photo.cgi?pw.061803/bb5>.

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