



## Motorola Successfully Demonstrates Applied Materials' Copper Equipment Set for 300mm Wafers

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SANTA CLARA, Calif.--(BUSINESS WIRE)--Dec. 6, 2000--

Company's 300mm Copper Technologies Showed "Remarkable Electrical

Performance on Wafers Processed...at the Same or  
Better Performance Levels as 200mm"

Motorola Semiconductor Products Sector, an industry leader in copper chip technology, has successfully completed a demonstration of Applied Materials' 300mm copper equipment set. The work was performed using Applied Materials' Endura Electra Cu(TM) Barrier/Seed 300 system, Electra Cu(TM) iECP 300 (Integrated ElectroChemical Plating) system, and Reflexion(TM) CMP (chemical mechanical polishing) system.

Doug Keenan of DigitalDNA(TM) Laboratories of Motorola said, "We have been working closely with Applied Materials to demonstrate results from a 300mm tool set for multilevel copper interconnects. This work has shown remarkable electrical performance on wafers processed on our copper interconnects at the same or better performance levels as compared to interconnect results on 200mm."

This work is in line with Motorola's 300mm strategy of continuing to evaluate the readiness of 300mm equipment. Motorola recently completed a joint venture, begun in 1998, with Infineon that successfully produced the first saleable DRAM devices utilizing 300mm equipment and is actively working with key industry partners on tool sets that will provide 300mm manufacturing capabilities for Motorola products.

"Working with Motorola on advanced process development and product validation projects is always extremely valuable for us," noted Dr. Fusen Chen, vice president and general manager of Applied Materials' Al, Cu and Liner/Barrier Systems & Modules Group. "Motorola's successful evaluation of 300mm copper systems in our EPIC (Equipment & Process Integration Center) facility demonstrates that these systems can produce chips having the same baseline electrical characteristics as those manufactured on 200mm tools. Test manufacturing in EPIC is one of the ways we're working with our customers to help reduce the risk and costs of customers' transition to 300mm wafer processing."

"This project also exhibits Applied Materials' experience in 300mm and the maturity of our copper processes. This is verified by the number of 300mm systems configured for Cu processes that have already been shipped to multiple customers worldwide," continued Dr. Chen.

Applied Materials' Endura Electra Cu Barrier/Seed technology, which is used by virtually every chipmaker engaged in copper device development, deposits tantalum and tantalum nitride barrier films and copper seed layers. Applied Materials' Electra Cu iECP technology, introduced in 1999, features advanced electroplating technology integrated with bevel clean and post-anneal processing steps for optimized throughput and reduced WIP (work in progress). The Reflexion CMP is the industry's leading 300mm CMP system and offers advanced copper polishing solutions for customers.

The Endura Electra Cu Barrier/Seed 300, Electra Cu iECP 300, and Reflexion CMP systems form the basis of Applied Materials' 300mm Copper Equipment Set. The systems' separate processes have been carefully integrated by Applied Materials to provide customers with a baseline process flow that can be easily customized for specific device designs, without the time- and resource-intensive process engineering typically required in the fab before production. To further advance this concept, Applied Materials is currently developing a diverse array of inspection and metrology, software and advanced process control (APC) technologies that are expected to ultimately link the systems together in a fully automated process flow.

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 industry. Applied Materials' web site is <http://www.appliedmaterials.com>.

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