



TSMC Places Additional Production Orders for Applied Materials's Ultima HDP-CVD Systems; Ultima HDP-CVD Centura Provides Shallow Trench Isolation Capability at TSMC

November 4, 1998

SANTA CLARA, Calif.--(BUSINESS WIRE)--Nov. 4, 1998--Taiwan Semiconductor Manufacturing Corp. (TSMC) placed a repeat order for Ultima HDP-CVD(TM) (high-density plasma chemical vapor deposition) Centura(R) systems for shallow trench isolation (STI) applications. TSMC, the world's largest semiconductor foundry company, has been using Ultima HDP-CVD technology in its R&D facility to qualify its STI process for advanced logic devices. The new Ultima systems are scheduled for immediate installation at two different TSMC production fabs.

"Foundries have the most stringent requirements for equipment technology, productivity, economics and flexibility," noted Tzu-Yin Chiu, director of TSMC's Fab 4. "We have chosen the Ultima system as our 0.25-micron production tool. We are confident that with the support of Applied Materials' extensive service organization in Taiwan, the Ultima's technology will extend our current 0.25-micron shallow trench isolation CVD technology to 0.18-micron designs."

The Ultima HDP-CVD Centura system is the semiconductor industry's most advanced high-density plasma system for dielectric CVD. As the market leader in HDP-CVD, the Ultima system is being used for virtually all types of semiconductor devices for applications as diverse as low (κ) intermetal dielectrics in multi-level logic chips, and shallow trench isolation in the transistor structures of both logic and memory devices.

"We have worked closely with TSMC to qualify the Ultima system for high-volume foundry production, where extendibility through multiple device generations, flexibility to run different applications and high productivity were important factors in the selection of this system," said Dr. Farhad Moghadam, vice president and general manager of the HDP-CVD Product Unit and Emerging Dielectric CVD Products at Applied Materials. "We are very pleased with TSMC's decision to use the Ultima HDP-CVD systems in its current and future manufacturing."

The Ultima has been qualified by major semiconductor manufacturers for doped and undoped dielectric films as well as reduced dielectric constant FSG (fluorinated silicate glass). This versatility enables chipmakers to cross multiple device generations without the need for a new chamber design, allowing a high degree of extendibility to meet rapidly changing industry requirements.

Remote Plasma Clean technology is standard on the Ultima HDP-CVD Centura, which uses a remote microwave source to create a "soft" chamber clean. The clean process emits virtually no global-warming PFC (perfluorocompound) gases and essentially eliminates consumables.

Applied Materials, Inc. is a Fortune 500 global growth company and the world's largest supplier of wafer fabrication systems and services to the global semiconductor industry. Applied Materials is traded on the Nasdaq National Market System under the symbol "AMAT." Applied Materials' web site is <http://www.AppliedMaterials.com>.