



VLSI Technology Orders Applied Materials's Ultima HDP-CVD Centura for Low k FSG Applications

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Ultima's Low k FSG Process to be Used on VLSI's Next-Generation
VSC11 0.15-Micron Chip Designs

VLSI Technology, Inc., a leading designer and manufacturer of custom integrated circuits, expands its number of Applied Materials' Ultima HDP-CVD(TM) Centura(R) systems with an order targeted specifically for depositing FSG (fluorinated silicate glass) low k (reduced dielectric constant) film in its newly announced VSC11 0.15-micron chip designs. The order is expected to be delivered to VLSI's San Antonio, Texas, fab in March 1999.

Hunter Brugge, manager of New Technology at VLSI Technology, said, "We have been extremely pleased with the Ultima's performance in shallow trench isolation, premetal dielectrics, intermetal dielectrics and passivation applications and are eager to expand its role in our most advanced designs. We believe the Ultima's FSG low k process will provide us with a high productivity solution to the interconnect-dominated delays associated with deep-submicron geometries and enable increased device speed and circuit densities."

As the industry's leading system for HDP-CVD (High-Density Plasma Chemical Vapor Deposition), the Ultima is being used by semiconductor manufacturers worldwide for a wide variety of dielectric CVD gap-fill applications, including intermetal dielectrics and shallow trench isolation (STI) for sub-0.25 micron generation devices. The Ultima is currently the only system being used by semiconductor manufacturers in high-volume production for FSG low k films.

"VLSI Technology has worked with us to optimize the Ultima for FSG films and other critical dielectric applications," noted Dr. Farhad Moghadam, vice president and general manager of Applied Materials' Dielectric Deposition Division. "VLSI has shown exceptional leadership in providing advanced manufacturing technology for custom ICs and we are delighted by their selection of our system for use in the production of their groundbreaking VSC11 chip technology."

In addition to its advanced film deposition capability, the Ultima features Applied Materials' revolutionary Remote Plasma Clean(TM) technology which cuts operating costs by eliminating chamber consumables and significantly extends system uptime. Using this "green" technology, the Ultima system also emits virtually no global warming gases, eliminating the need for exhaust scrubbers.

According to Dataquest, a market research firm, the HDP-CVD market was \$376 million in 1998 and is expected to grow at a compound annual growth rate of 16.3 percent over the next five years. With 17 out of the top 20 semiconductor manufacturers using the Ultima HDP-CVD Centura, it is the industry's leading system for FSG, shallow trench isolation and intermetal dielectric applications.

VLSI Technology (Nasdaq:VLSI), based in San Jose, California, designs and manufactures custom and semicustom integrated circuits for leading firms in the wireless communications, networking, consumer digital entertainment and computing markets. VLSI's homepage is at www.vlsi.com.

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 www.appliedmaterials.com.

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