The Materials Metrology™ Company

Press Release

ReVera Launches New High K Capacitor Metrology Solution for 65nm ALD Materials

In-Line Compositional Metrology Tool Expands Portfolio of Atomic-Scale Applications to ALD-deposited High K Capacitor Films

SUNNYVALE, Calif., July 7, 2004 – ReVera, Inc. announces a new capacitor dielectric application for its RVX 1000 metrology system that simultaneously measures atomic-scale thickness and provides composition analysis of ultra-thin High K films, such as hafnium oxide and other films being developed for the most advanced capacitor designs. Ultra-thin material analysis and measurement has emerged as a critical requirement to guarantee speed and yield in ALD-based 65nm-generation and beyond designs.

This new application joins ReVera's popular gate dielectric metrology/analysis process in the company's fast-expanding application portfolio. ReVera will be describing its advanced compositional metrology technology at a SEMICON/West press conference Monday, July 12, at 2:00 P.M. at Moscone Center in San Francisco.

"Transistors are in a revolution, where scaling new materials to atomic-level thickness makes traditional processes low-yielding and uncontrollable. ReVera is pushing atomic-scale metrology's merger with material analysis because chipmakers critically need to know thickness, composition and purity levels to assure process quality in the fab, not the lab," noted Dave Ring, President and CEO of ReVera. "Starting with 65nm devices, the purity and thickness uniformity of even one atomic layer can make a huge difference in transistor and capacitor performance and yield. Our RVX 1000 uniquely combines rapid dimensional measurement and composition analysis of a wide range of emerging high k films as thin as 5Å, equating to only one or two molecular layers."

ReVera's fully automated RVX 1000 uses a technique that simultaneously determines thickness and film composition of an ultra-thin material with the throughput, extreme accuracy and precision required for production process control. The company's proprietary algorithms quantify elemental concentration and layer thickness with high precision. Unlike traditional optical methods, the RVX 1000 counts only the atoms of interest (Si, O, N, Hf, Al, etc.), making it exceptionally useful for process control. Surface contaminants, such as hydrocarbons and airborne molecular contaminants do not influence the measurement results, contributing to the excellent measurement repeatability of the tool.

Ring continued, "Major fabs in the U.S., Europe and Asia are already using the RVX 1000 for critical gate metrology and the system is also being intensively used by some of the largest chip equipment makers to characterize their latest ALD and advanced material processes. We are working closely with customers on many new applications and we anticipate having a number of additional critical applications available over the next year."

Formerly an operating division of Physical Electronics (PHI), a worldwide leading supplier of surface analytical instrumentation, ReVera, Inc. was formed in order to focus its proprietary technology on the critical emerging need for ultra-thin film and compositional metrology in nanometer-generation chip manufacturing and process development.