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Advanced Metrology Systems Releases New SurfaceWave™ Tool for Multi-Parameter Online Measurements of ECD Copper and Low-k Interconnects

*SW3300A Delivers Non-destructive, Online Measurements of multi-layer,
Copper/Low-k interconnects with Improved Accuracy*

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Advanced Metrology Systems (AMS), a leader in online measurement tools for semiconductor manufacturing, today announced the SW3300A Advanced SurfaceWave™ System for online multi-layer measurements of copper/low-k film stacks. The SW3300A is the latest development in AMS' successful line of highly automated opto-acoustic metrology products. The tool uses patented SurfaceWave™ technology, an easy to use, non-contact, laser-based technology, to measure layer thickness and mechanical properties on both blanket and patterned product wafers. The SW3300A provides fabs with critical information for the control of interconnect copper plating processes. Separately today, AMS announced the release of the IR3100N and IR3100S (See "Advanced Metrology Systems Launches IR3100N" and "Advanced Metrology Systems Launches IR3100S").

"With the widespread use of copper/low-k interconnects, a need was identified to measure the thickness and mechanical properties of more than just the ECD copper layer and with better measurement accuracy," said Tony Bonanno, director of product development at AMS. "Past solutions to this problem used only a single acoustic wavelength measurement or required manual intervention to acquire and process multiple wavelength data. Now, with the multiple wavelength measurement capability of the SW3300A, we can provide

our customers with online measurements of both ECD copper thickness and low-k film properties with high accuracy.”

The SW3300A has been enhanced in both software and hardware to allow the collection of multiple acoustic wavelength data. In addition, fourth generation modeling techniques have been implemented to allow multiple parameters, such as layer thicknesses and/or mechanical properties, to be uniquely determined by analyzing waveforms measured using multiple acoustic wavelengths. When combined with pattern recognition software, the SW3300A is well suited for online, highly automated measurements of ECD product wafers at all current and future production nodes.

The SW3300A uses the same AMS Series 3000 platform as the award-winning IR3000 and AMS 3300. It uses a highly automated dual loadport system that can be configured for 200/300 mm or 150/200 mm mixed wafer size operation as well as standard dual 300 mm FOUP, 200 mm SMIF or open cassette systems. The platform can be changed in the field to allow reconfiguration of the wafer handling systems as customers change wafer sizes or automation needs. The automation backbone software is based on Peer Group’s new advanced PTO3 automation solution and has been tested in fabs worldwide. The SW3300A is available now.

About AMS

AMS offers an extendable, scalable metrology platform that maximizes return on investment (ROI) by supporting multiple applications and processes. The platform offers fast and detailed results to characterize wafers, unique and comprehensive information on deep trench structures and thorough data analysis options. The AMS proprietary SurfaceWave™ technology provides rapid metal film thickness metrology for interconnect layers in advanced copper/low-k processes, while our unique Model-Based Infrared Reflectometry (MBIR) technology provides structural information on trench features of advanced DRAM devices. AMS has become the metrology solution of choice for DRAM etched structure metrology using the IR3000. In addition, the company’s AMS 3300 is the preferred tool for copper metrology solutions to measure patterned ECD copper.

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