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Advanced Metrology Systems Launches IR3100N

Uses Near Infrared Technology Providing DRAM Manufacturers with Accurate Recess Measurements for 70 Nanometers and Below

NATICK, Mass. and SAN FRANCISCO, SEMICON WEST, July 16, 2007 – Advanced Metrology Systems (AMS), a leader in online measurement tools for semiconductor manufacturing, today announced the release of the IR3100N, a model-based infrared (MBIR) reflectance metrology solution for measuring 3D structures. The new IR3100N includes proprietary optics and an extended near infrared (NIR) measurement making it well suited for online, highly automated measurements of product wafers at the 70 nm node and below. The new tool broadens AMS' product portfolio to handle the high volume measurements of next generation shallow silicon structures and interconnect layers used in integrated circuit (IC) manufacturing. Separately today, AMS also announced the debut of the IR3100S (See "Advanced Metrology Systems Announces the IR3100S for Small Spot on Product Measurements").

"As process nodes advance and devices shrink in size, there is an increasing need to measure shallower structures and traditional technology solutions are unsuitable for online use in the fabs due to degraded sensitivity, measurement speed or they required cumbersome manual intervention, or frequent system realignment," said Michael Gostein, director of technology at AMS.

Tony Bonanno, director of product development at AMS, added "the new product is a result of customer collaboration to address these changing metrology requirements. The IR3100N combines a powerful measurement technology with a high throughput production proven platform designed

specifically to run in shorter wavelengths to meet the emerging materials and process challenges driven by demanding industry requirements."

The IR3100N uses a new proprietary optical source and detection system to extend the range of the tool to include the mid-infrared and near infrared spectral ranges 600 to 11,000 cm^{-1} (17 to 0.9 µm) in a single measurement without sacrificing sensitivity, reproducibility or data acquisition time. This extended range enables more accurate and repeatable measurements of shallow structures such as Recess 2 or Recess 3 in DT DRAM applications, as well as significantly improved accuracy and repeatability for thin (20 nm) epitaxial film measurements.

The IR3100N uses the same AMS Series 3000 platform as the award winning IR3000. 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 IR3100N 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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