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# KLA-Tencor Drives Semiconductor Profiling Technology to 45nm with New HRP-350 System

SAN JOSE, Calif.--(BUSINESS WIRE)--

KLA-Tencor Corporation (NASDAQ:KLAC) today introduced the industry's most advanced, high-resolution surface topography profiling system, extending critical measurement capability to the 45nm semiconductor device generation. Featuring diamond styli down to 20nm radius and a lower-noise platform for enhanced measurement sensitivity, the HRP-350 system offers chipmakers the ability to monitor significantly smaller lateral and vertical dimensions. These breakthroughs are matched by higher scan speeds that elevate the system's production worthiness across a wide range of critical transistor and interconnect applications.

"With profile control requirements for critical etch and CMP(1) processes becoming much tighter with every device generation, our customers require a single-system solution that can support yield critical nano-scale applications as well as control macro-scale topography on the wafer," noted Jeff Donnelly, group vice president of Growth and Emerging Markets (GEM) at KLA-Tencor. "Our new HRP-350 system's nanometer-scale stylus technology matches AFM(1) resolution capabilities, and since the HRP measurement technique is independent of any modeling requirements, it provides users with reliable data and faster time to results in both development and volume production environments."

The HRP-350 system's high-resolution mode enables accurate control of nano-scale features for applications that directly impact device performance, such as Shallow Trench Isolation, CMP in the interconnect, metal film roughness and tungsten plug recess. For larger scale features, the system's long-scan mode operates at high throughput to measure copper CMP dishing and erosion, copper plating, die planarity, and C4 bump height in packaging.

The system's broad portfolio of styli, including a new, proprietary 20nm UltraSharp(TM) stylus, are based on diamond materials to offer the longest operating lifetimes, typically up to 100 times longer than AFM tips. New stylus developments further advance the technology by not only shrinking the stylus dimensions, but also enhancing their robustness to enable scanning up to five times faster than the previous HRP-340 system. Other system productivity enhancements contribute up to 40% higher system throughput while profiling critical structures in advanced 65nm and 45nm devices.

The new HRP-350 platform includes multiple enhancements that reduce noise, enabling much higher profile measurement precision, sensitivity and repeatability. A new isolation table, advanced acoustic barrier and damping materials, and a new probe sensor assembly all contribute to improved noise floor performance compared to the previous HRP-340

system. In addition to 300mm capability on the HRP-350 system, an HRP-250 is also available with similar feature characteristics for 200mm and smaller wafers for IC manufacturing, as well as for disk drive manufacturing applications.

The HRP-350 is the latest system in KLA-Tencor's line of industry-leading profile metrology solutions. The company has installed over 500 HRP-series automated profile systems at chipmakers around the world, as well as more than 4,000 desktop tools, which are extensively used by fabs, universities, and research facilities. The HRP-350 is already being used for 65nm production and 45nm development.

About KLA-Tencor: KLA-Tencor is the world leader in yield management and process control solutions for semiconductor manufacturing and related industries. Headquartered in San Jose, California, the company has sales and service offices around the world. An S&P 500 company, KLA-Tencor is traded on the NASDAQ Global Select Market under the symbol KLAC. Additional information about the company is available at <http://www.kla-tencor.com>.

(1) CMP = Chemical Mechanical Planarization; AFM = Atomic Force Microscope

Source: KLA-Tencor Corporation