



STMicroelectronics Achieves Exceptional Results on Applied Materials' Copper CMP System with Integrated Nova Metrology

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SANTA CLARA, Calif.--(BUSINESS WIRE)--Dec. 22, 2003--

The 200mm Applied Mirra(R) Mesa(TM) CMP System with NovaScan
2020 Copper Metrology Elevates Productivity, Improves Process
Control for Copper Chips

Applied Materials, Inc. (Nasdaq:AMAT) has completed a comprehensive evaluation program with STMicroelectronics (ST), Crolles, France, that demonstrated superior results using the 200mm Applied Mirra Mesa CMP(1) system configured with the NovaScan 2020 Copper integrated metrology unit from Nova Measuring Instruments. ST found that this integrated system is highly accurate in the measurement of erosion and the detection of copper residue. These demonstrated capabilities are key to enabling the reduction of scrap and the improvement of cycle time at the Crolles 1 facility.

Dominique Labrunye, Director of Process and Equipment Engineering at STMicroelectronics, Crolles, said, "The exceptional performance of the Applied Mirra Mesa system with Nova integrated metrology has shown capability to increase the productivity of our dual damascene copper CMP process. Our joint work with Applied Materials and Nova has helped identify a key enabler to cycle time reduction as well as improvements in both equipment and fab efficiency."

The evaluation of Nova's in-line Copper metrology system on an Applied Mirra Mesa polisher was conducted for six months at ST's Crolles site using its copper production process and production wafers. ST found that the integrated technology demonstrated the capability to eliminate the need for off-line, stand-alone monitoring by collecting and analyzing process data from every wafer immediately after polishing. Its ability to monitor process excursions can help shorten ramp time and improve yield.

Russell Ellwanger, Vice President and General Manager of Applied Materials' Planarization and Plating Product Business Group, said, "Our joint copper CMP program with ST and Nova is extremely beneficial and has helped us develop the advanced capabilities of the Applied Mirra Mesa system for copper technology. The combination of enhanced polishing precision, higher device yield and improved system operating performance is a powerful advantage for our customers who want to minimize the difficulties of moving to a new chip generation."

The non-contact, non-intrusive optical measurement technology of the NovaScan 2020 Copper unit on the Applied Mirra Mesa CMP system uses spectrophotometric technology to measure and detect copper and barrier metal residues as well as erosion of the copper arrays, enabling improved control of the polish process and the elimination of time-consuming off-line measurements. The NovaScan 2020 Copper technology is used in combination with Applied Materials' existing on-board monitoring tools, the iScan(TM) and FullScan(TM) systems, which precisely control overpolishing and measure copper film thickness, to provide the tightest possible wafer-to-wafer control. The Nova unit is available on the Applied Mirra(R) and Applied Reflexion(R) CMP systems.

Dr. Giora Dishon, CEO of Nova Measuring Instruments, said, "Our success at ST with the Nova 2020 Copper demonstrates the tremendous potential of this technology for 90nm volume manufacturing. Besides being a key step in the strategic effort between Applied Materials and Nova to develop advanced process control for copper CMP, it also validates our approach to combining multi-channel spectrophotometry and image processing in one tool."

Nova Measuring Instruments Ltd. develops, designs and produces integrated process control systems for the semiconductor manufacturing industry. Nova provides a broad range of integrated process control solutions that link different semiconductor processes and process equipment. The Company's website is www.nova.co.il.

Applied Materials (Nasdaq:AMAT) is the largest supplier of products and services to the global semiconductor industry. Applied Materials' web site is www.appliedmaterials.com.

(1) CMP: chemical mechanical polishing

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