NOVELLUS SYSTEMS LAUNCHES SABRE® EXCEL™ FOR 22nm COPPER ELECTROPLATING

Hardware Enhancements Including IRISCell™ and Multiwave™ Entry Improve Plating Performance on Thin seeds; Reduce Defectivity

San Jose, California – October 20, 2009 – Novellus Systems (NASDAQ: NVLS) today introduced the SABRE Excel, an advanced copper electroplating system designed to provide industry-leading fill and defect density performance for the 22nm technology node and beyond. SABRE Excel builds upon the production-proven SABRE, a platform already employed in the manufacture of more than 80 percent of the world's copper interconnect devices. The SABRE Excel platform features a new deposition module incorporating Novellus' patented IRISCell technology, as well as new hardware, software and communications upgrades to the process tool's mainframe. Additionally, an advanced plating process has been developed for SABRE Excel to take advantage of these new, innovative features.

The new feature set addresses the key challenges associated with scaling copper electroplating to the 22nm technology node. In order to address device reliability concerns at these advanced geometries, the industry is trending towards the use of very thin alloy PVD seed layers. While thicker PVD seed layers can cause copper voiding, thinner seed layers result in increased seed resistance, making it difficult to achieve the uniform current density required for consistent feature fill during the initial stages of electrochemical deposition (ECD). Novellus' IRISCell technology eliminates this issue by employing patented field shaping elements that enable dynamic current modulation during the deposition process. Thin PVD seeds also create a challenge for uniform nucleation of the copper film. To address this problem, SABRE Excel's new plating process, called Multiwave entry, provides millisecond control of the voltage profile during the initial stages of copper deposition.

In addition to the hardware advances designed to address thin seed challenges, the SABRE Excel platform introduces a number of innovative new features targeted at meeting the defect and yield requirements for 22nm. The propensity for "killer" defects has been dramatically reduced using a proprietary, low-corrosion electrolyte. The number of chips per wafer has also been improved by increasing the usable die area through a reduction of the process edge exclusion to only 1mm.

"We are confident that the SABRE Excel system will serve as the new benchmark of copper ECD for advanced technology nodes," said Sesha Varadarajan, vice president and general manager of Novellus' Electrofill business unit. "The results we have achieved with the new IRISCell and Multiwave entry technologies have driven several of the industry's leading manufacturers to place orders for the system with shipments beginning in Q4 of this year."

About SABRE:
For advanced, high-volume manufacturing applications, Novellus' copper electrochemical deposition hardware, processes, and chemistries combine industry-leading throughput with bottoms-up, void-free filling of the industry's most state-of-the-art device structures. Eight out of 10 copper wafers in the world are manufactured on Novellus SABRE Electrofill® systems.

About Novellus:
Novellus Systems, Inc. (Nasdaq: NVLS) is a leading provider of advanced process equipment for the global semiconductor industry. The company's products deliver value to customers by providing innovative technology backed by trusted productivity. An S&P 500 company, Novellus is headquartered in San Jose, Calif. with subsidiary offices across the globe. For more information, please visit www.novellus.com

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