NOVELLUS' INNOVATIVE 32 NM DIELECTRIC TECHNOLOGIES ENABLE INTERCONNECT RC DELAY SCALING

San Jose, Calif. - March 18, 2009 - In order for device performance to keep pace with Moore's Law, integrated circuit designers have had to drive node-to-node reductions in interconnect-related RC delay. Achieving this performance scaling has become increasingly challenging as interconnect spacing has decreased below 45nm. Over the past several years, researchers have studied alternative materials and more complex integration schemes in order to meet the RC scaling challenge. While effective in a research environment, most of these materials and processes have faced challenges in terms of cost and production control when transferred to high volume manufacturing.

Employing recent breakthroughs in dielectric film deposition and interface control processes, Novellus (NASDAQ: NVLS) has developed a technology package that delivers a 5 percent lower keffective value than alternative approaches, without the need for complex material changes (see Figure 1 for a cross section of a test structure built with Novellus' dielectric films and interfacial control processes).

These innovations in thin film deposition were achieved using the VECTOR® PECVD system's multi-station sequential architecture. The development team optimized the parameters impacting each film and interface in the dielectric stack, enabling Novellus' customers to stay on track with technology scaling requirements (see Figure 2).

"RC scaling is about keffective, not the absolute k value of each layer," said Mandyam Sriram, director of technology for Novellus' PECVD business unit. "Today the fastest and most advanced devices in the industry use Novellus dielectric films. We offer proven, high volume manufacturing-ready solutions to design-in capacitance reduction, with both an ease of integration and a low cost-of-ownership for our customers."

For more information regarding the impact of each back-end dielectric film on keffective and how to scale your RC delay, visit www.novellustechnews.com.

About Novellus' PECVD Technology:
For high-volume manufacturing applications at 45nm and beyond, Novellus' advanced low-k, ILD, IMD, and dielectric diffusion barrier films offer the lowest keffective, superior RC control, and an easily integrated low-cost dielectric solution.

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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