Applied Materials Sets the Standard for 32nm Mask Cleaning with New Tetra Reticle Clean System

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TOKYO, Apr 14, 2008 (BUSINESS WIRE) -- Applied Materials, Inc. today released its Applied Tetra(TM) Reticle Clean, the industry's only wet clean system that delivers damage-free, greater than 99% particle removal efficiency for 32nm-and-beyond photomasks. Enabling customers to exceed 32nm specifications for critical mask cleaning applications, the compact Tetra Reticle Clean system also sets a new standard for productivity, offering up to four times the throughput of any competing system.

"Conventional photomask cleaning systems have not been able to meet the challenge of cleaning leading-edge masks effectively without damaging them," said Ajay Kumar, general manager of Applied Materials' Mask Etch and Cleans product division. "We've overcome this technology barrier with the Tetra Reticle Clean system, enabling mask makers to achieve the rapid cleaning performance they need while maintaining the mask feature integrity and phase control that their customers demand."

The Tetra Reticle Clean system's remarkable performance, which has already been validated in a 45nm production environment, is the result of several innovations in cleaning technology. The system features a unique, flexible design and sulfur-free, advanced ammonia-based cleaning agents that combine to maximize photoresist and particle removal without damaging the mask. Proprietary Uniform Cavitation Megasonics(TM) (UCM) technology distributes energy evenly over the entire mask surface, avoiding the damage-causing spikes generated by traditional point-source megasonic(1) cleans. The Tetra Reticle Clean system also introduces NanoDroplet(TM) technology which utilizes a unique nozzle design to create small, uniform, high-momentum droplets that evenly distribute energy and help deliver 32nm-and-beyond cleaning performance.

The benchmark high throughput of the Tetra Reticle Clean system is enabled by its ability to treat both sides of the mask simultaneously, cutting process time in half compared to other cleaning systems. This feature enables extendibility to future mask generations by allowing different chemistries to be used on each side without mixing. The system can be configured with multiple processing modules, offering mask makers the capacity to eliminate processing bottlenecks and reduce cycle times. For more information on the Applied Tetra Reticle Clean, visit www.appliedmaterials.com/products/reticle_clean_4.html.

The Tetra Reticle Clean system is part of Applied's expanding portfolio of photomask manufacturing and inspection solutions. The Applied Tetra Reticle Etch system is used by virtually every advanced mask shop in the world for 45nm photomask development and production. The Applied Aera2(TM) Mask Inspection system, just announced today, enables customers to immediately see what pattern will be printed on the wafer. These solutons will be showcased at the Applied Materials Technical Forum in Yokohama, Japan, on April 15 during SPIE Photomask Japan 2008. Visit www.appliedmaterials.com/2008_PMJ.

Applied Materials, Inc. (Nasdaq:AMAT) is the global leader in Nanomanufacturing Technology(TM) solutions with a broad portfolio of innovative equipment, service and software products for the fabrication of semiconductor chips, flat panel displays, solar photovoltaic cells, flexible electronics and energy efficient glass. At Applied Materials, we apply Nanomanufacturing Technology to improve the way people live. Learn more at www.appliedmaterials.com.

(1) Megasonic = the rapid formation and collapse of bubbles in a liquid caused by high-frequency pressure waves

SOURCE: Applied Materials, Inc.

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