Lam Research Corporation Releases Ceramic FreeTM Chamber For TCP® 9400PTX HDP Poly Etch System

Lam Research Corporation Releases Ceramic Free™ Chamber For TCP® 9400PTX HDP Poly Etch System Lam Research Corporation (Nasdaq: LRCX), a leading supplier of wafer fabrication equipment to the worldwide semiconductor industry, today announced release of its Ceramic Free high-density plasma (HDP) poly etch chamber. The chamber increases productivity and reduces contamination to enhance sub-0.25 micron process yields. It was developed for Lam's TCP 9400PTX, the market-leader for critical 0.18 micron gate and shallow trench isolation (STI) etch.

In high-density silicon etch reactors, ceramic is the main source of metallic contamination in chambers where ceramic components are exposed to the plasma. In these systems aluminum levels can exceed 1x1013/cm2. Ceramic Free processing reduces this contamination. It also minimizes particle generation and polymer formation on the wafer surface to simplify stripping. Eliminating ceramic also improves productivity by enabling Waferless Autoclean™, an in situ plasma clean that extends the time between wet cleans. Contamination test results using the new chamber show successful reduction of aluminum contamination to below the SEMI standard of <5x1010/cm2 for any metallic contamination, in some instances, to as low as 1x1010/cm2.

The Ceramic Free chamber eliminates the adverse effects of ceramic on wafer stripping capability and particle generation by preventing undesirable reactions. Fluorine-based gases (NF3, CF4, CH2F2, etc.) are increasingly required in silicon etch for in situ mask open and anti-reflective coating (ARC) etch. These gases are also used as additives for chamber cleaning. Combined with ceramic-induced aluminum contamination, they form nonvolatile AlFx-containing polymers that are difficult to strip and prone to catastrophic flaking and particle generation.

Particle performance is further improved and productivity increased with Waferless Autoclean. This in situ plasma clean does not require a dummy wafer to protect the electrode, thereby allowing the electrode to be cleaned. It is enabled by eliminating ceramic from the chamber and using a non-etchable electrode. In addition to reducing dummy wafer consumption, it reduces particle generation, significantly improving productivity by enabling a mean time between cleans (MTBC) as high as 30,000 RF minutes.

"In addition to developing for technology performance and extendability, we designed the TCP 9400PTX with a strong focus on cost of ownership and productivity capability. The system's new Ceramic Free chamber reduces contamination to enable the 0.15/0.13 micron and below process development and R&D projects now in progress," commented Dr. Greg Campbell, Lam's vice president and general manager of the Etch Products Group.

The new Ceramic Free chamber components can be retrofitted on current TCP 9400PTX systems to upgrade capabilities.

"Safe Harbor" Statement Under the Private Securities Litigation Act of 1995: This press release contains certain forward-looking statements which are subject to the Safe Harbor provisions created by the Private Securities Litigation Reform Act of 1995. Such forward-looking statements relate to anticipated performance, capabilities, applications, and competitiveness of the company's products and market transition to new processes. Such statements are based on current expectations and are subject to risks, uncertainties, and changes in condition, such as may arise from introduction of such products into production, and other risks detailed in documents filed with the Securities and Exchange Commission, including specifically the report on Form 10-K for the year ended June 30, 1998, and the Form 10-Q for the quarter ended March 31, 1999. The company undertakes no obligation to update the information in this press release.

Lam Research Corporation is a leading supplier of wafer fabrication equipment and services to the world's semiconductor industry. The company's common stock trades on the Nasdaq National Market under the symbol LRCX. Lam's World Wide Web address is http://www.lamrc.com.

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