## Lam Research Corporation Releases Dual Damascene Applications For 4520xleTM -Now In Use In Copper Production At A Major U.S. Chip Manufacturer

Lam Research Corporation Releases Dual Damascene Applications For 4520xle<sup>TM</sup> - Now In Use In Copper Production At A Major U.S. Chip Manufacturer FREMONT, Calif., September 22, 1998 - Lam Research Corporation (Nasdaq: LRCX), a leading supplier of wafer fabrication equipment to the worldwide semiconductor industry, today released dual damascene applications for the company's field-proven 4520XLE<sup>TM</sup> advanced dielectric etch system. The released applications are being used in production of devices with copper interconnects at a major U.S. chip manufacturer. The 4520XLE is capable of the critical via and trench etching needed to produce all currently proposed dual damascene structures for 0.25 and 0.18 micron and beyond. The flexibility of the 4520XLE is essential to developing dual damascene metal patterning since no single structure has emerged as a standard. This high-productivity system provides superior performance with excellent reliability and low cost of ownership. Dual damascene structures present new challenges for etch not previously required of etch systems. These include the requirements of high selectivity to nitride in open areas and the ability to etch vertical trench sidewalls that provide the structure necessary for straight metal lines upon copper deposition.

The 4520XLE system has a wide process flexibility that allows fabs to develop processes for multiple dual damascene structures and investigate how well each can integrate into the interconnect process. Its broad process window provides this flexibility through independently controlled power settings that regulate charged particle flux and energy along with a wide operating pressure range. The system is able to run high pressure processes in situ, such as photoresist strip and nitride finish etch, eliminating extra wafer handling steps. This in situ process capability lowers overall costs per wafer.

Dr. Greg Campbell, vice president and general manager of Lam's etch products group, noted, "By extending the capability of the 4520XLE to below 0.18 micron combined with high productivity and low cost of consumables, we are providing customers with a dramatic cost of ownership advantage. The 4520XLE, together with Lam's TCP<sup>TM</sup> 9100PTX, optimized for critical high aspect ratio contact etch, position Lam to address multiple generations of all logic, DRAM, and other critical applications."

The 4520XLE is available as a standalone system or as a process module on Lam's multichamber Alliance<sup>TM</sup> platform. The system's hardware and technology can also be retrofitted on Lam's Rainbow<sup>TM</sup> 4520 etch systems, offering customers a cost-effective way to enable damascene applications and extend processes to 0.18 micron and below. In addition, the plasma source technology is scalable to 300 mm.

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

"Safe Harbor" Statement under the Private Securities Litigation Act of 1995: Except for historical information, this press release contains certain forward-looking statements and other prospective information relating to future events, including, but not limited to, statements relating to the release of new products, product performance and current and future applications, the company's participation in the semiconductor equipment market, and etch market segment specifically, and the current and future significance of certain technology. These statements and other information are subject to various risks, uncertainties and changes in condition, significance, value and effect that could cause results to differ materially and in ways not readily foreseeable, including, but not limited to, a continued downturn in the semiconductor equipment market, competition, development or acceptance of new products or product technologies, challenges to existing or anticipated technology rights, and other risks detailed from time to time in the company's SEC reports, including the report on Form 10-K for the year ended June 30, 1997, and the Form 10-Q for the quarter ended March 30, 1998. The company assumes no obligation to update the information in this press release.

<u>Applications-For-4520xleTM-Now-In-Use-In-Copper-Production-At-A-Major-U-S-Chip-Manufacturer</u>