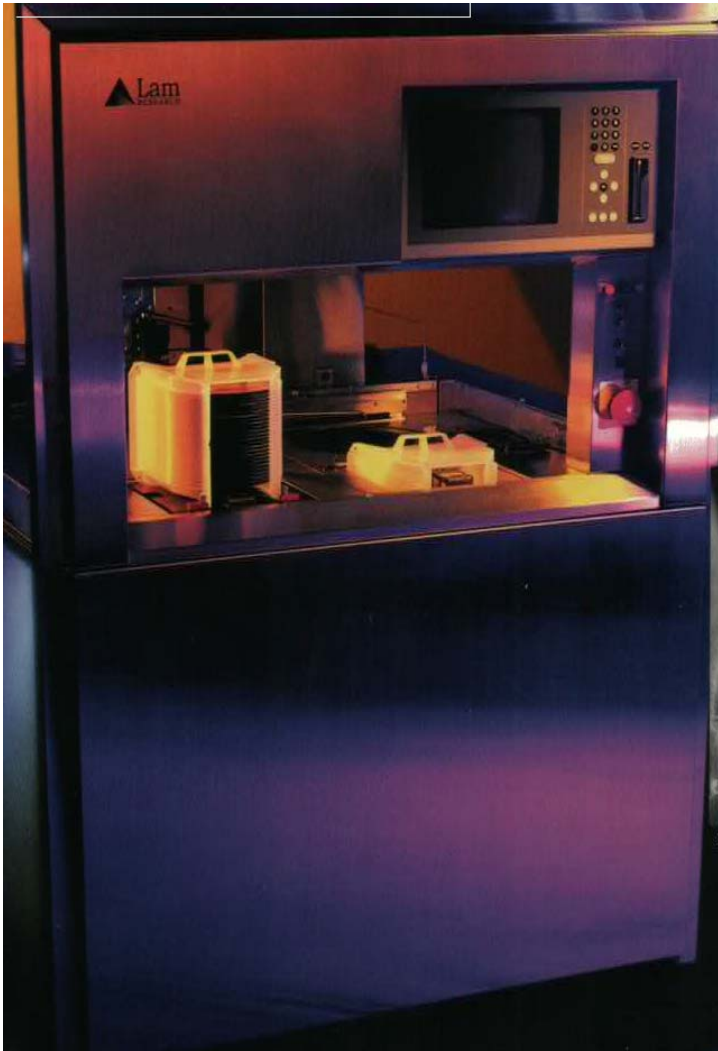


Rainbow® 4520 Etch



The Rainbow® 4520 Standalone system is a single wafer, vacuum load-locked low pressure oxide system for etching 0.5 μm contact holes and above at aspect ratios of $<4:1$. This system features a low pressure main chamber for anisotropic etching of dielectric films with low conductance manifold, pick and place wafer transport system with non-wafer contact optical alignment, flat notch orientation, and active temperature control of upper and lower electrodes. The process makes use of a low polymer forming chemistry for high selectivity to polysilicon. The system includes an enhanced Monochromator for automatic endpoint on exposed oxide.

Applications

- ◆ Contact etch
- ◆ Planarization
- ◆ Via etch
- ◆ Trench mask etch
- ◆ Pad etch

Typical Results

- ◆ Thermal Oxide Etch rate $\geq 4500 \text{ \AA}/\text{min}$
- ◆ BPSG etch rate $>7500 \text{ \AA}/\text{min}$
- ◆ TEOS etch rate $>5000 \text{ \AA}/\text{min}$
- ◆ Uniformity $\pm 10\% \ 3\sigma$
- ◆ Selectivity BPSG/TEOS to poly $> 15:1$
- ◆ Particles $<0.08/\text{cm}^2$ at $>0.3\mu\text{m}$ size

System Reliability

- ◆ Uptime $\geq 85\%$
- ◆ MTTC < 6 hours
- ◆ MTBF ≥ 125 hours
- ◆ MTTR ≤ 4 hours

Feature

- ◆ Single wafer etch
- ◆ Wafer temperature control
- ◆ Variable gap spacing
- ◆ Parallel plate reactor
- ◆ Inductive RF auto tuning
- ◆ Advanced hard ware components
- ◆ Simple ,efficient design

Benefit

- Individual wafer etch for repeatable results
- Reduced loading effects, profile control with extended over etch
- Wide process flexibility
- Proven etch technology
- fast ,accurate RF tuning for precise control
- Reduced defect densities
- Ease of maintenance, low cost of ownership

