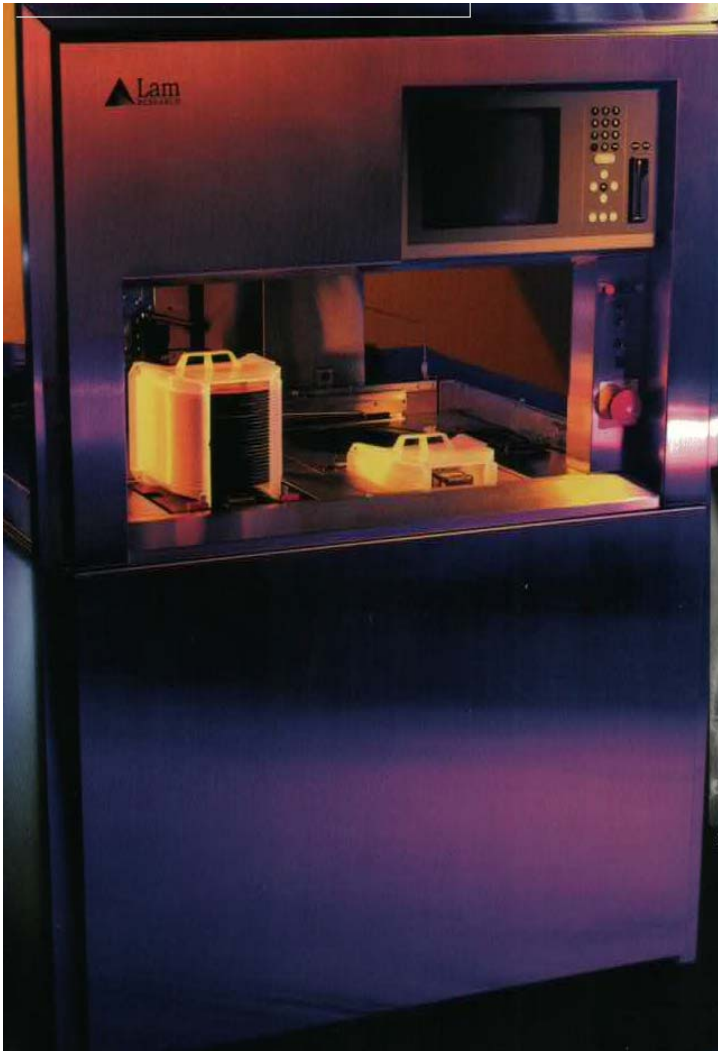


# Rainbow® 4520XL Etch



The Rainbow® 4520XL offers improved RIE lag, aspect ratios of 5:1 or greater, selectivity's of  $\geq 50:1$  for contact and for  $\geq 30:1$  via etch, and operating pressures in the 30-200 mtorr range all while maintaining high etch rates and excellent profile control. A number of hardware improvements give the Rainbow® 4520XL technical capabilities that challenge the leading edge oxide etch sources available.

## Applications

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

## Typical Results

- ◆ BPSG etch rate >8000 Å/min
- ◆ TEOS etch rate >6000 Å/min
- ◆ Uniformity +/- 7% 3σ
- ◆ Selectivity BPSG/TEOS to poly > 30:1
- ◆ Particles <0.06/cm<sup>2</sup> at >0.3μm size

## System Reliability

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

## Feature

## Benefit

- |   |   |
|---|---|
| ◆ Multifrequency diode                            | Independent control of plasma density and directionality<br>High plasma density |
| ◆ Cylindrical pump manifold and 400 l/s drag pump | Low operating pressures for high aspect ratio etching                           |
| ◆ New confinement ring                            | Maintains mechanical confinement at large -gap operation                        |
| ◆ Electrostatic chuck                             | Reduced edge exclusion and particle deposit                                     |

