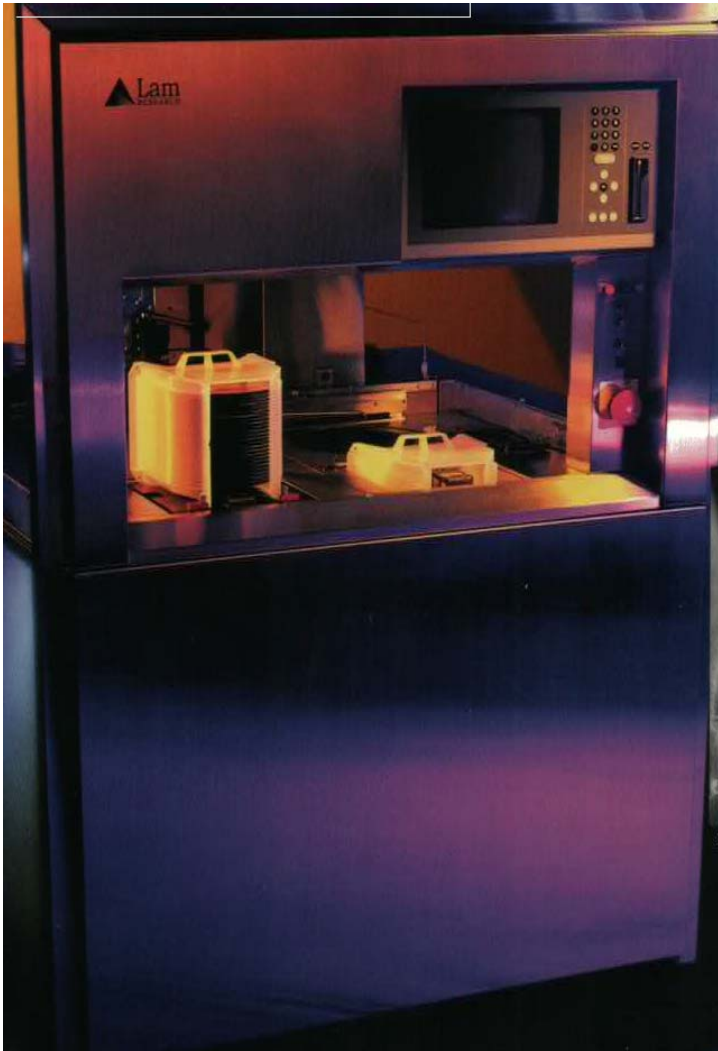


# Rainbow® 4420 Etch



The Rainbow® 4420 standalone system is a single wafer, vacuum load locked etch system for down to 0.5  $\mu\text{m}$  polysilicon, nitride, and polycide films utilizing a pressure regime from 250 mtorr to 3 torr. The system uses pick and place techniques with non-wafer contact optical alignment.

## Applications

- ◆ Polysilicon
- ◆ Silicon Nitride
- ◆ Tungsten silicide
- ◆ Tantalum silicide
- ◆ Titanium silicide
- ◆ Molybdenum silicide
- ◆ Shallow trench

## Typical Results

- ◆ Poly ME Etch rate  $\geq 3500\text{A}/\text{min}$
- ◆ Uniformity  $\pm 10\%$   $3\sigma$
- ◆ Profile control 88-90 degrees
- ◆ Silicon Nitride ME etch rate  $\geq 2700\text{ A}/\text{min}$
- ◆ Uniformity  $\pm 10\%$   $3\sigma$
- ◆ Profile control  $>80$  degrees
- ◆ CD Bias  $\leq \pm 0.03\ \mu\text{m}$
- ◆ Particles  $<0.06/\text{cm}^2$  at  $>0.3\mu\text{m}$  size

## System Reliability

- ◆ Uptime  $\geq 85\%$
- ◆ MTTC  $< 8$  hours
- ◆ MTBF  $\geq 150$  hours
- ◆ MTBR  $\leq 4$  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
- ◆ Rainbow® platform

## Benefit

- Individual wafer etch for repeatable results
- Reduced loading effects and profile control
- Wide process flexibility
- Proven etch technology
- Accurate RF tuning for precise control
- Reduced defect densities
- Ease of maintenance, low cost of ownership
- Production proven ,high reliability

