

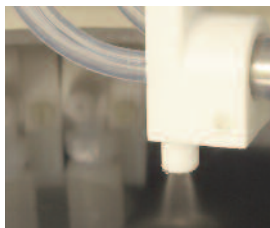
Velocity for Defect Removal: Scrubber Applications and Beyond



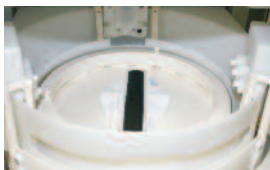
NAURA Akrion Single-Wafer "Super Scrubber" Technology



Patented Goldfinger® megasonics particle removal without damaging sensitive structures (standard feature)



JetStream™ (patents pending) combines with megasonics for additional cleaning during DIW rinse (optional feature)



Backside megasonics (patents pending) high efficiency backside particle removal (optional feature)

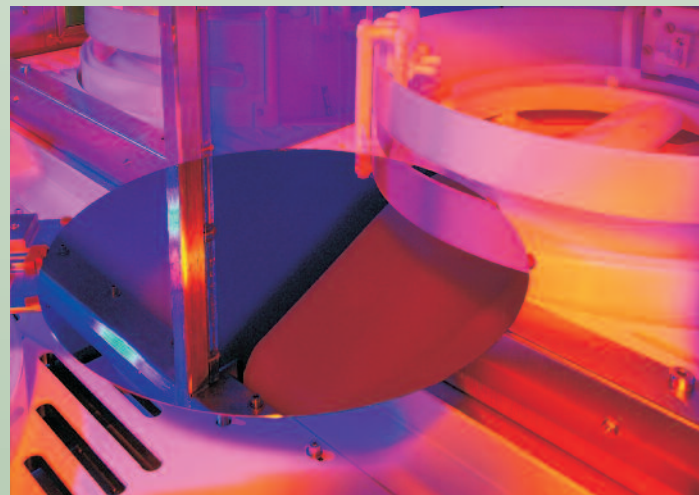
NAURA
AKRION

Industry Need

Advanced sub-50nm process requires more stringent particle control. Manufacturers desire megasonic assisted chemical processing to remove nano-particles. NAURA Akrion is the industry leader in megasonic technology.

Key Benefits

- Sensitive structure cleaning without damage
- Small particle removal, even below 35nm
- No or little chemical etching during particle removal
- Recessed feature cleaning
- Simultaneous frontside and backside cleaning or single side processing



Defect Removal with Goldfinger® Megasonics

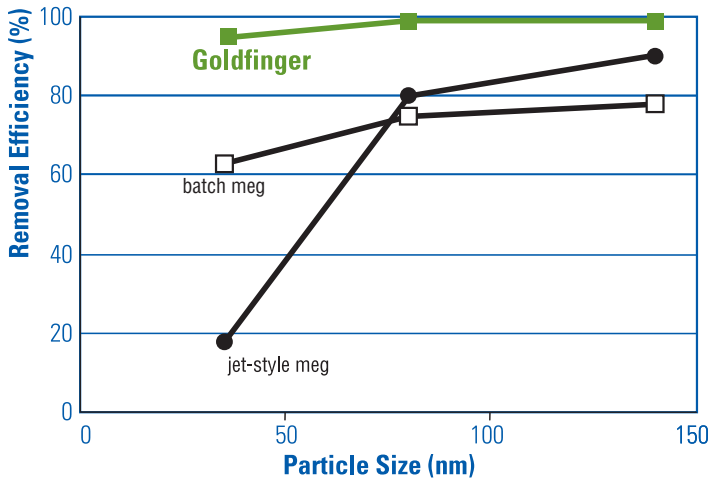
Velocity™“Super Scrubber” vs. Traditional Scrubbers

LEGEND ● Excellent ○ Good ○ Average X Poor

	Goldfinger® Megasonics	Traditional Scrub (Spray)	Traditional Scrub (Brush)	Comments
Damage-free Cleaning	○	○	X	Goldfinger meg > 70% PRE for 65nm structures
Frontside PRE	●	●	●	All methods provide excellent PRE, at least for > 90nm particles
Small Particle Removal	●	○	●	Goldfinger meg > 95% PRE for 45nm particles
Simultaneous Front/Back Clean	●	X	X	Goldfinger meg transmits energy through the wafer for backside cleaning

Goldfinger megasonic process has demonstrated superior capabilities compared to traditional scrubber tools

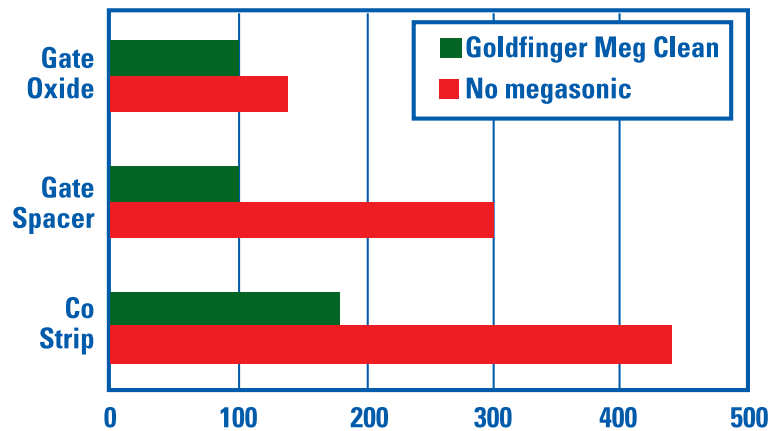
Small Particle Removal (≥ 45nm)



Particle removal efficiency > 95% for particles as small as 45nm with Goldfinger megasonics

FEOL Sensitive Structure Clean

Defect Level Comparison



Defect reduction was obtained by using a DIW or dSC1 clean with Goldfinger Megasonics. The sensitive structures were not impacted.

Single-Wafer and Batch-Immersion Cleaning

NAURA Akrion also has a complete line of batch immersion products for a variety of cleaning, etching and stripping applications. Our batch immersion and single wafer systems are found in leading edge fabs worldwide.

