

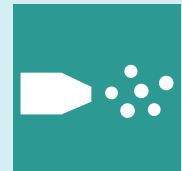


innovative
nanotech

SuperSizer™ Serise Innovative Feature



24/7 In-line System
Auto-Sampling
Auto-Flush



Aerosol Measurement
Nanoparticles
and Impurities



Size Distribution
Capable of sub-20 nm
down to 3 nm



No Bubble Interference

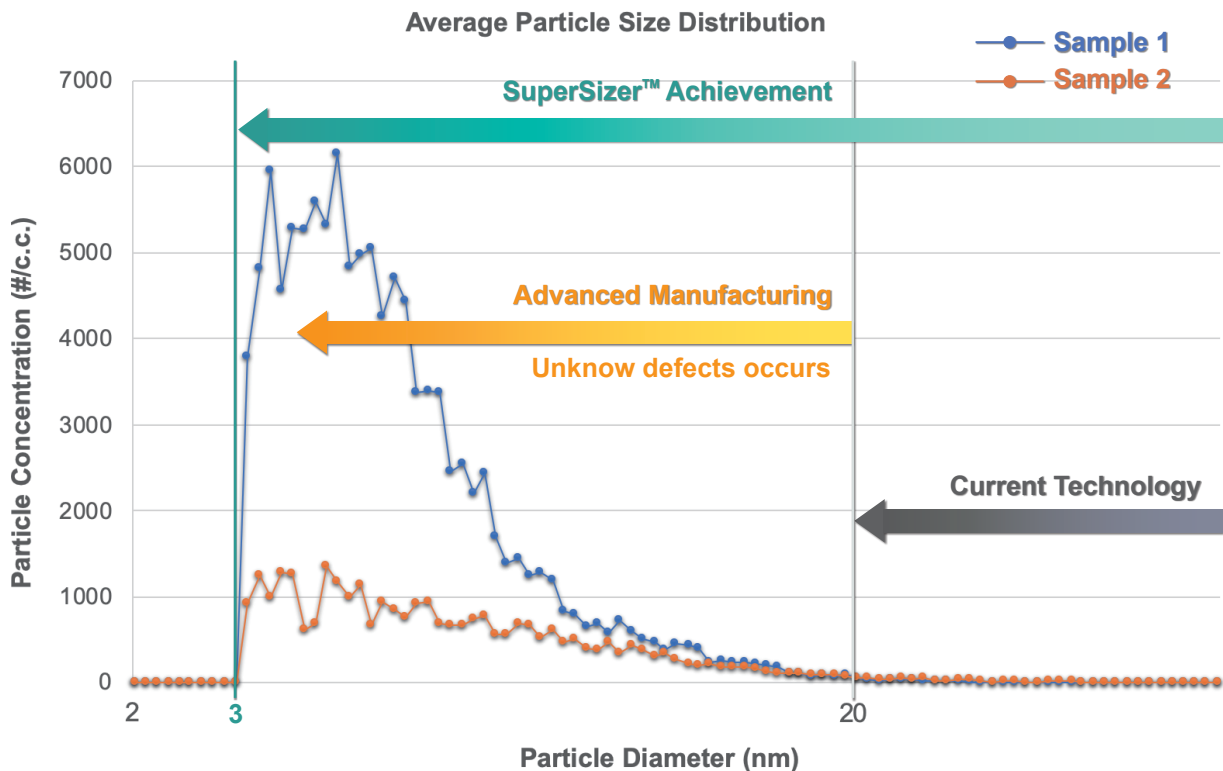
In-line Nanoparticle Monitoring System SuperSizer™ Series

Chipmakers have been moving full speed ahead toward 5 nm products and beyond. The capabilities of the current particle monitoring technologies lag far behind the industry need. Currently, the semiconductor industry mainly relies on the well developed light scattering technology to monitor nanoparticles in production lines. However, it is also known that this technology has encountered its physical limit in measurement, and has been suffering from difficulties in consistent detections of particles smaller than 40 nm, not to mention those smaller than 20 nm. The inability to monitor and control nanoparticles in the processing wet chemicals has inevitably lead to the formation of killer defects on the wafers and resulting in serious product delays and yield losses. Thus, there are strong demands for in-line sub-20 nm particle monitoring for processing yield enhancement.

Innovative nanotech is a high-tech start-up, spun-off of ITRI and invested by Chroma ATE, dedicated to develop technology to "see" clearly, accurately and efficiently the size and distribution of the nanoparticles in the sub-20 nm range. Our product, SuperSizer, is designed to work 24/7 in the strict semiconductor production environment. SuperSizer enables the users to "see", and thus to control the "killer particles" before they result in "killer defects". Therefore, SuperSizer has become the unprecedented yield enhancer in the nm range.

Clearly, this new tool has made significant break through over the current light scattering technologies. SuperSizer is the state-of-the-art in-line ultra-fine particle sizing system capable of accurately and reliably distinguishing particle size ranging from 3 nm to 1,000 nm with a concentration up to 10^{13} /cm³. We believe SuperSizer can and will enhance the processing yields of semiconductor fabrications to a new level.

Limitations of Current Technology

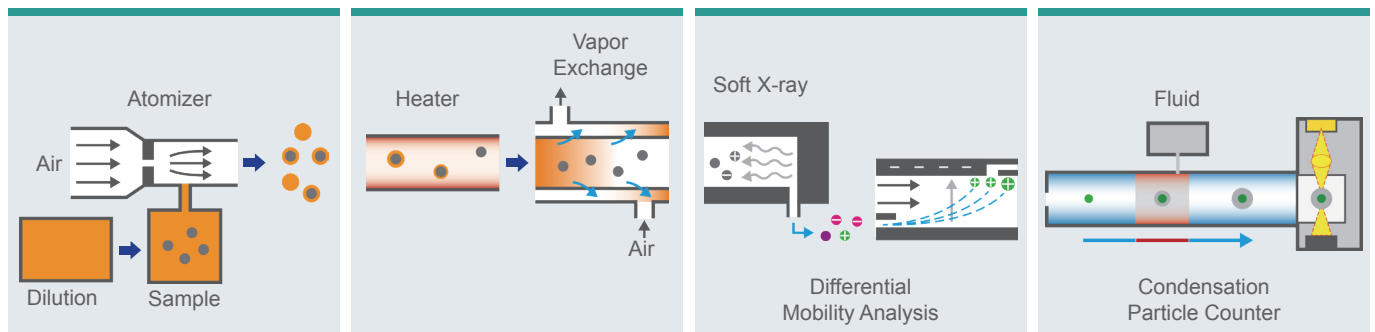


To See the Particles and Impurities under 20 nm

Current technology (Light Scattering Method) can only count the particles above 20 nm size. However, there can be lots of killer particles below this limitation, which cannot be detected. Thus, the particles and impurities under 20 nm size have become a big concern in sub-10 nm advance technology nodes. SuperSizer breaks the limits and successfully "sees" the particles and impurities between 3-20 nm size. As a result, SuperSizer has become a powerful yield enhancer.

SuperSizer™ Technology

Nebulizing → Drying → Sorting → Counting



- Auto Dilution (Optional)
- Auto Sampling
- Liquid chemical become droplets

- Droplets passing the drying process
- Leave nanoparticles and impurities behind
- Exchange the vapor out (optional)

- Nanoparticles and impurities charged by Soft X-Ray
- Using voltage to sort the nanoparticles and impurities

- Enlarge the sorted nanoparticles and impurities by passing a condensing chamber
- Count enlarged nanoparticles and impurities

SuperSizer™ Specifications

Core Technology
Aerosol Measurement Technology

Target
Particles (Hard Particles)
Impurities (Soft Particles)


Report
Particle Size Distribution
Total Count


Resolution
~ 1 nm @ 20 nm
At 20 nm, the scale gap is around 1 nm

Advantage
No Bubble Interference

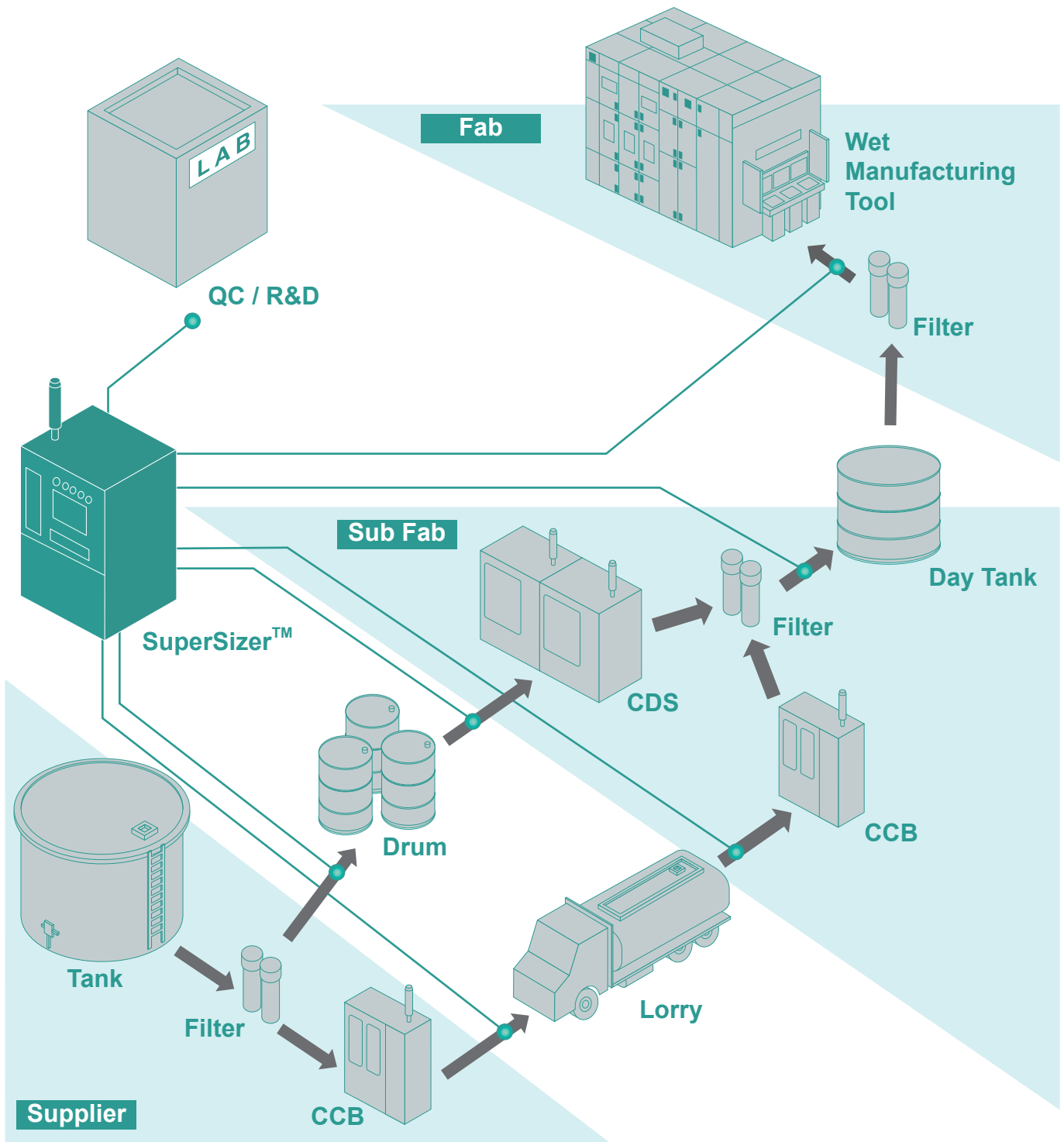
SuperSizer™ Features

 <p>SuperSizer - II</p>	Application	Slurry
	Certification	Semi S2
	Measuring Range	3-64 nm / 4.5-160 nm 17-1000 nm
	L x W x H	800 x 1300 x 1800 mm
	Weight	400 kg

 <p>SuperSizer - V</p>	Application	IPA
	Certification	Semi S2 TS Explosion Proof
	Measuring Range	3-64 nm / 4.5-160 nm
	L x W x H	788 x 915 x 2043 mm
	Weight	350 kg

 <p>NEW SuperSizer - VI</p>	Application	H ₂ O ₂ / Ultra Pure Water
	Certification	Semi S2
	Measuring Range	3-64 nm / 4.5-160 nm
	L x W x H	809 x 1000 x 2068 mm
	Weight	350 kg

Points of Use Examples



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