

NanoSILICON, Inc.



NSi Facility



Located in the heart of Silicon Valley San Jose, California. NanoSILICON, Inc. was founded in 2010.



NSi Management



Facility #1, 9,400 sqft *

Facility #2, 5,440 sqft *



NSi Product Offerings

- Silicon Reclaim Services: 50.8mm Through 300mm Diameters
- Silicon Wafer Sales: 50.8mm Through 300mm Diameters
 Virgin Test, Virgin Prime, Reclaim Grade
- Semi Standard And Custom Wafer Specifications
- Thermal Oxide And Other Thin Film Deposition
- Metrology: ADE, KLA-Tencor 6220, Nanometrics 210
- Alternative Substrates: Borofloat, Quartz, Fused Silica
- Inventory Management And Consignment
- Laser Cut Down Edge Profiling Laser Scribe
- Cassette And FOUP Cleaning, Destruction Of Scrap, R & D Services



NSi Reclaim Capabilities

- Film Strip / Etch
 - Metal And Non-Metal Films
 - Separate Metal And Non-Metal Lines To Prevent Contamination
- Polish / Lap / Etch
- Laser Scribe
- Class 100 Clean Room
- Metrology
 - Type, Resistivity, Orientation, Particle Counting to ≤30@0.16μm
- Specification Binning
- Full Final Disposition For Wafer Accountability



Virgin Test & Prime

Receive

- Virgin Starting Material
- •Unique Virgin Lot ID
- •Spec Verification & WPO Submission

Polish

- •Stock Removal
- •Final Polish

Clean

- •RCA Clean (SC1 and SC2)
- Megasonic
- Scrub

Inspection/Q0 Bliss

- •Visual ≤15@0.5μm
- •KLA-Tencor 6220 ≤30@0.16µm

Packaging

- •Poly &/or Foil bags
- Desiccant

NSi Process Flow

Reclaim





NSi Customer Lot Integrity

- Unique Traveler And Lot ID Per Specification
- Traveler Accompanies Wafers Throughout Production
- Production Alternates Diameters With Every Lot Change
- Each Department Records Yields And Approves
 Traveler Before Passing To The Next Production Step
- QA Checks, Guarantees, And Applies A Final QA Sticker
 Signifying Specification Compliance





NSi Metrology Tools



ADE Microsense 6033 Indicates Thickness, Resistivity, & TTV

KLA Tencor Surfscan 6220

Maps Defects And Particles



Nanometrics 210



Verifies Oxide Film
Thickness And Uniformity







VPD ICP-MS Method Detect	ion	
Limits, atoms/c		
Method detection limit		DES and
BSE ICP-MS vary depending on techniques.		
Aluminum	Al	1e9
Antimony	Sb	1e7
Arsenic	As	2e9
Barium	Ba	8e6
Beryllium	Be	1e9
Bismuth	Bi	5e6
Boron	В	2e10
Cadmium	Cd	2e7
Calcium	Ca	1e9
Cesium	Cs	3e7
Chromium	Cr	3e8
Cobalt	Co	3e8
Copper	Cu	1e8
Gallium	Ga	2e7
Germanium	Ge	5e7
Hafnium	Hf	3e7
Iron	Fe	5e8
Lanthanum	La	1e7
Lead	Pb	2e7
Lithium	Li	3e8
Magnesium	Mg	5e8
Manganese	Mn	1e8
Molybdenum	Mo	1e7
Niobium	Nb	5e7
Nickel	Ni	3e8
Potassium	K	1e9
Rubidium	Rb	5e8
Sodium	Na	1e9
Strontium	Sr	5e7
Tantalum	Ta	2e7
Thallium	TI	3e7
Thorium	Th	3e7
Tin	Sn	1e8
Titanium	Ti	3e8
Tungsten	w	5e6
Uranium	U	3e8
Vanadium	V	5e7
Yttrium	Y	1e8
Zinc	Zn	3e8
Zirconium	Zr	5e7

NSi Metals Policy

- ChemTrace Quarterly Metals Analysis
- VPD ICP-MS Method
 - Vapor Phase Decomposition Inductively Coupled Plasma – Mass Spectroscopy
- Thirty Different Elements Tested
- Focus On Nine Elements Important To The Semiconductor Industry

NSi Metals Data:

Copper Cu	<1E10
Chromium Cr	<5E10
Iron Fe	<5E10
Nickel Ni	<5E10
Calcium Ca	<5E10
Sodium Na	<5E10
Zinc Zn	<5E10
Aluminum Al	<5E10
Potassium K	<5E10



NSi ISO 9001:2015 Timeline



2021

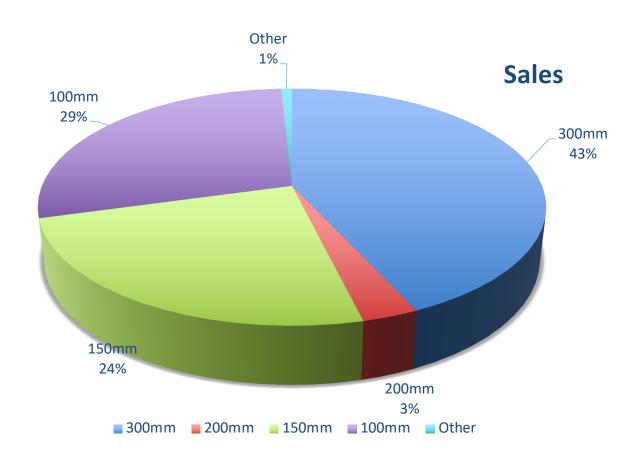
- Signed On With Perry Johnson Registrar
- Implement All Inclusive ERP, CRM, WIP,
 And QMS Software System

2022

- Q2 Perry Johnson Gap Analysis
- Q3 Perry Johnson Internal ISO Audit
- Q4 Perry Johnson Certification Audit



NSi Sales By Diameter





NSi BCP And CSR

Business Continuity Plan

- Secondary Backup Tools
- Duplicate Facility
- Adequate Insurance Coverage
 For All NSi Tools, Consumables, And Inventory

Corporate Social Responsibility

- Recycle Programs For E-waste, Plastics, And All Regular Waste
- Wet Scrubber System Surpasses Emission Standards Allowing Bay
 Area Air Quality Management District To Grant Permit Exemption
- Clean Harbors Collects All Hazardous Materials In Lieu Of
 Neutralizing In House And Eliminating Through The POTW System



NSi Summary

- NanoSILICON, Inc. is interested in becoming your wafer vendor, with the focus on following your lead.
- NanoSILICON, Inc. is a service driven entity and understands today's high demand to remain flexible with our customers.
- We will be price competitive and will not compromise our quality standards for the sake of market share.
- Thank you for your time. We look forward to working with you.



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