Sputtering Systems




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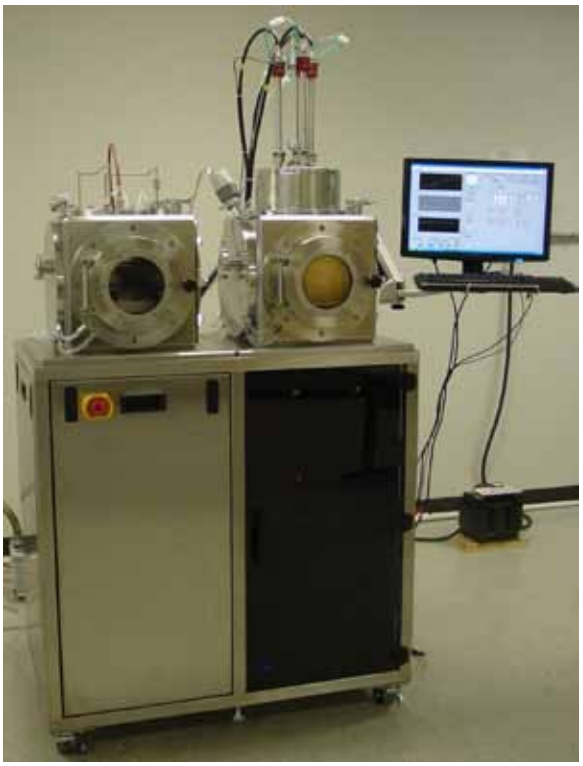
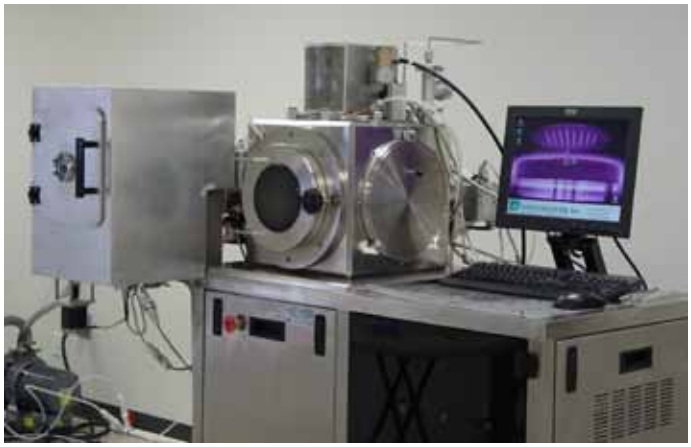
NANO-MASTER Sputtering Systems

NANO-MASTER's state-of-the-art Sputtering Systems can be constructed with various chamber and source configurations to efficiently deposit metal and dielectric thin films on to substrates up to 200 mm. The systems can be equipped with DC, RF and Pulsed DC power supplies to enable sequential or co-sputtering. The systems are pumped with a turbomolecular pumping package to achieve a base pressure of $5x10^{-7}$ Torr. Magnetron to substrate distance is adjustable in order to achieve desired uniformity and deposition rate. Rotating platen with off axis magnetrons provide means of achieving the best film uniformity. Crystal thickness monitor is provided for terminating process automatically. Substrate holders can be heated up to 800°C while rotating and RF biased.

Sputter Up System with Auto Load/Unload



Dual PECVD/RIE System



Eight Wafer Cassette Auto Load/Unload Sputter Up System

Load Lock and Automatic Transfer Between Chambers w/o Exposure to Atmosphere

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FEATURES

- Electro-polished 14” cubical chamber optimized for sputtering
- 5 x 10^{-7} torr base pressure attained with turbomolecular pumping package
- Single or multi magnetron configuration with varying cathode size
- Sequential sputtering
- Adjustable magnetron to substrate distance
- 1” to 6” planar magnetron sizes
- Source and substrate shutters
- Mass flow controller with electro polished gas lines
- 4” viewport with manual shutter
- Quartz crystal thickness sensor
- Substrate rotation
- PC based fully automatic recipe or manually driven control system
- State of the art user interface
- EMO protection and safety interlocks

NSC-3500 with SS Chamber

OPTIONS

- Substrate heating up to 800°C or cooling
- Glancing Angle Deposition (GLAD) with rotation
- Various chamber sizes
- 1.5-5Kw Pulsed DC power supply for ITO/ZnO like materials
- Planetary substrate holder
- In-situ tilting for magnetrons
- RF biased substrate
- Ion source for substrate cleaning
- Ion assisted sputtering
- Additional power supplies (RF/DC) for co-sputtering
- Additional PVD sources (thermal, e-beam)
- Additional MFC’s for reactive sputtering
- Automatic load/unload
- Various pumping options including cryo pumping stations

NSC-1000 with Bell Jar

APPLICATIONS

- Optical coatings, and ITO Coatings
- Decorative coatings
- Hard coatings
- Protective coatings
- Microelectronics patterning

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GENERAL SPECIFICATIONS

Maximum Substrate Size:	8”
Substrate Temperature Range:	Up to 800°C
Maximum Number of Magnetrons:	4
Maximum Magnetron Diameter:	Up to 6”
Vacuum:	5 x 10^{-7} torr with turbomolecular pumping package
Plasma Clean:	300W, 13.5 MHz prior to sputtering
System Control:	PC controlled with LabVIEW and touchscreen user interface
Loading and Unloding:	Manual or automatic

FACILITY REQUIREMENTS

Power Input:	208V/380V/415V, 20A/Phase, 50/60Hz
Chilled Water:	2gpm @ 50psi, 18°C
Compressed Air:	1/4” Swagelok, 80-90 PSI
Processed Gas:	1/4” Swagelok, 20 PSIG
Nitrogen:	1/4“ Swagelok, 10 PSIG
Exhaust (System):	NW25

DIMENSIONS	Width	Depth	Height
NSC-4000	26”	44”	72”
NSC-3500	26”	24”	72”
NSC-3000	26”	26”	44”
NSC-1000	24”	22”	40”

Combinatorial Sputtering System: Dual Side Sputter Housing/Vertical Platen 600 °C Rotating Platen with Tilt and Masking

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