



AccuSputter AW 4450

Introduction

Allwin21 Corp. is a leading supplier of sputter deposition equipment for high technology applications for Semiconductor III-V, II-VI, MEMS, Biomedical, Nanotechnology, Solar, Battery & LED industries. The AccuSputter AW 4450 is designed for flexibility offering a wide range of operating and process modes. The highest quality construction, components and Allwin21's new real time AW-4450 System Control assure reliable operation and an ultra clean vacuum environment to yield consistently reproducible results. Every AccuSputter AW 4450 sputtering system is supported by years of technological experience and backed by a worldwide sales and service organization dedicated to prompt courteous service

AccuSputter AW 4450 Key Features

- ⊕ Production-proven sputter technology
- ⊕ Optimum AW-4450 System Control
- ⊕ DC 24V for Motors, Actuator, Relay, Solenoid
- ⊕ Efficient 8" Delta cathodes, 2 to 6" option
- ⊕ Full Pallet rotation control with "indexing"
- ⊕ High Uniformity and Yield
- ⊕ DC, RF Sputter, Pulse DC option
- ⊕ Magnetron and Diode Sputter option
- ⊕ RF Etch and Bias are optional
- ⊕ Ultra Clean vacuum system
- ⊕ Load lock operation
- ⊕ UHV design
- ⊕ Flexible for development or production use
- ⊕ Full range of substrate sizes and shapes
- ⊕ Various pumping and power options
- ⊕ Co-sputtering option
- ⊕ Reactive Sputtering option

AccuSputter 4450 Sputter Materials

Al+W	Cr/SiO ₂	SiC	Ti+Au
InSnO	SiO ₂	Ti/W	Ti+Au+Ni
Al ₂ O ₃	Mo	SiO ₂ +O ₂	Ni/Fe+Cu+SiO ₂
Ag	MoSi ₂	Si+N ₂ (Si ₃ N ₄)	Ti/W+Au
Au	Mo ₂ Si ₅	Si+N ₂ +B ₄ C	Ti/W+Au+Ta
C	Mo ₅ Si ₃	Ta	Ti/W+Al/Si
Cr	Ni	TaC	Ti/W+Ni/Cr+Au
Cr/Co	Ni/Cr	Ta+Au	Ti/W+Pt
Cr/Au	Ni+Ni/Cr	TaSi ₂	Al+Ti/W+Ag
Cr+Cu	Ni/Fe	Ta+SiO ₂	W+Al ₂ O ₃
Cr/Si	Pt	Zr	Zn
Cr/SiO	TiO ₂	TiO ₂ +Cr	ZnO ₂

AccuSputter AW 4450 Software Key Features

- Maintenance, Manual, Semi Automatic and Fully Automatic modes.
- Automated calibration of all subsystems.
- Troubleshooting to subassembly levels.
- Programmed comprehensive calibration and diagnostic functions.
- Recipe creation for full automatic wafer processing.
- Automatic decline of improper recipes and process data inputs.
- Multi-level password protection.
- Storage of multiple recipes and system functions.
- Real-Time process graphics, data acquisition display, and analysis.
- Process Data and Recipe storage automatically to hard drive.
- Easy TC vacuum gauge calibration.
- Positioning Deposition (optional)
- GEM/SECS II (optional)



Production-Proven Chamber/Load lock/Vacuum

Options

- ◆ GEM/SECS II function (Software)
- ◆ More gas lines with MFC
 - ① N₂; ② O₂; ③ Customized
- ◆ Lamp tower alarm with buzzer.
- ◆ Mechanical pump or dry pump for process chamber and load lock.
- ◆ Independent mechanical pump or dry pump for process chamber.
- ◆ Chiller for Cooling plates and table.
- ◆ Turbo pump for load lock.
- ◆ Load lock Lamp Heating function, Up to 200°C
- ◆ Chamber Lamp Heating function, Up to 300°C (Use one cathode port in SST chamber top plate).
- ◆ Plasma etch function (before sputter)
- ◆ Bias function
- ◆ Co-sputter function
- ◆ Reactive sputter function
- ◆ Transformer for AC 380V to 208V for DC Power Supply (if necessary).

AccuSputter AW 4450 Basic Configuration

- Main Frame
- 28" dia. SST chamber top plate with ports and Cathodes

Configuration	I	II
Cathode Shape	Circle	Delta
Cathode Size	8 inch	Delta
Cathode Quantity	1 to 4	1 to 3
- Sputter Power Supply

Configuration	I	II	III
DC Power	5 KW	10 KW	
RF Power	1KW	2 KW	3 KW
Pulse DC Power	5 KW	10 KW	
- Process Chamber
 - 8" diameter X 12" high stainless steel cylinder with 6"
 - CF flange viewport and load lock port
 - 28" diameter stainless steel base plate
 - 1 1/2" air-operated roughing isolation valve
 - Air-operated gas inlet valve
 - Air-operated vent valve
 - 1 1/2" blanked-off leak check port
 - Removable deposition shields
 - 23" diameter, 3-position water-cooled annular substrate table with variable-speed motorized table drive
 - Full circle shutter and vane shutter
 - Chain drive pallet carrier transport
 - Heavy duty electric hoist
- Load lock
 - 30" x 28" x 8" stainless steel load lock chamber with aluminum cover
 - Chain drive pallet carrier transport
 - 2" air-operated roughing isolation valve
 - Air-operated vent valve
 - 23" diameter molybdenum annular substrate pallet
 - Elevator for pallet up and down function.
- Vacuum Systems for process Chamber
 - 2 stage Cryo pump with 1000 l/s pumping speed for air, including chevron, water-cooled compressor and lines, automatic regeneration controller and plumbing kit. 71/2" O.D. (6" ASA) aluminum air-operated gate valve Air-operated venetian blind throttling valve.
 - 36.7 cfm mechanical pump or dry pump for process chamber and load lock (Optional)
- 1 gas line with MFC
 - ① Ar, 200 SCCM; ② Customized
- New Controller: Allwin21 Corp.'s AW-4450 System PC Control
- New Power Distribution Box: AC380V /208V/ 3Phase