



Company Introduction and Main Products

ALLWIN21 CORP.

Allwin21 Overview

Allwin21 Corp. is the exclusive licensed manufacturer of **AG Associates Heatpulse 610** Rapid Thermal Process tool. We are manufacturing the new AccuThermo AW Series Atmospheric and Vacuum Rapid Thermal Processors. Compared with traditional RTP systems, Allwin21's AccuThermo AW RTPs have innovative software and more advanced real time temperature control technologies to achieve the BEST rapid thermal processing performance (repeatability, uniformity, and stability) with decades of research directly applicable to ours.

We focus on extending product lifecycle, providing solutions, and engineering enhancements to many production proven semiconductor process equipment most directly related to III-V processing. These semiconductor equipment have been used in production and R&D since the 1990's. They have proven processes and research. Allwin21 Corp. can customize these systems with Allwin21's comparable integrated process control system with PC, solid robotic wafer transfer system, and new critical components. This is to achieve the goal of giving our customers a production edge, with right cost, and without having to worry about obsolete parts.

Allwin21 Corp. was formed in 2000 with a focus on professionally providing **Rapid Thermal Process, Plasma Asher Strip / Descum, Plasma Etch/RIE, Sputter Deposition** and **Metal Film Metrology** high-tech semiconductor equipment, services and technical support in Semiconductor III-V, MEMS, Biomedical, Nanotechnology, Solar, Battery & LED industries. We endeavor to be a leader in our product lines. To achieve this, we have been providing unique innovative and cost-effective technical solutions, high quality equipment, and on time spare parts delivery worldwide. We have maintained a global presence that has grown and expanded into the major high-tech manufacturing areas of the world. We pride ourselves on developing and continuing lasting customer relationships.

We understand that a timely responsive support and service are critical elements in semiconductor industries. Allwin21's experienced engineer team is the best guarantee for high quality service and support. We provide on-site installation, training, maintenance, system optimization, retrofits, and/or customized upgrades

What sets us apart from the competition...

- 1) Exclusive licensed manufacturer of Heatpulse 610 of AG Associates.
- 2) Advanced Allwin21 Real Time PC Control Technology.
- 3) Focus on Production-Proven process technology.
- 4) Integrated 3-axis solid robotic wafer transfer technology.
- 5) Experienced local engineer support.
- 6) Products made in U.S.A



1) Rapid Thermal Process

- **AccuThermo AW 610M**
- AccuThermo AW 820M
- AccuThermo AW 820V
- **AccuThermo AW820R**



2) Sputter Deposition

- **AccuSputter AW 4450**



3) Plasma Asher Descum

- **AW-105R**
- AW-1008
- AW-B3000



4) Plasma Etch/RIE

- AW-901eR
- AW-903eR
- AW-2001R

5) Upgraded Kit for:

- Heatpulse® 210,310,410,610
- Matrix® X0X
- Tegal® 90Xe
- Gasonics® Aura 1000/2000LL/3000/3010
- Gasonics® AE 2001/2000LL
- Gasonics® L3510/L3500
- Perkin-Elmer 24XX,4XXX Sputter
- MRC 6XX, 9XX Sputter
- TES 6XX,9XX Sputter
- Branson/IPC® 3000/2000/4000
- Lam AutoEtch® 490/590/69
- Lam Rainbow® 4XXX Series



6) Sheet Resistance Measurement

- AWgage-150
- AWgage-200



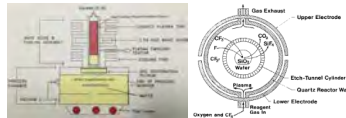
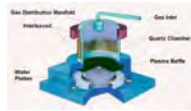
W Plasma Asher Descum ALLWIN21 CORP.

Introduction

Allwin21 Corp. has been focusing on providing solutions and enhancements to plasma asher descum semiconductor process. These OEM asher descum semiconductor equipment have been used in production and R&D since 1990's. They have been Process-Proven. Allwin21 Corp. can customize these OEM systems with Allwin21's comparable integrated process control system with PC, solid 3-axis robotic wafer transfer system, and new critical components to achieve the goal of giving our customers a production edge.

Plasma Asher Descum Key Features

- ⊕ Production-proven plasma Asher/Descum system.
- ⊕ Frontside and backside isotropic removal.
- ⊕ Consistent wafer-to-wafer process cycle repeatability.
- ⊕ Can handle 50um thickness wafer.
- ⊕ PC controller with Advanced Allwin21 Software.
- ⊕ Endpoint detection (EOP) -Optional
- ⊕ Pressure control with Throttle Valve.
- ⊕ 15-inch Touch screen monitor GUI.
- ⊕ EMO, Interlocks, and Watchdog function.
- ⊕ GEM/SECS II (optional).
- ⊕ Small Footprint
- ⊕ Made in U.S.A.



Production-proven Reactor

Applications

- ▶ GaAs, InP, GaN, SiC wafer Strip (Mainly)
- ▶ GaAs, InP, GaN, SiC wafer Descum (Mainly)
- ▶ Thin Film Head Resist Cleaning
- ▶ Opto-Electronic Devices Cleaning
- ▶ Dry Descum, Clean
- ▶ Photoresist Stripping
- ▶ Controlled Resist Removal



AW-105R



AW-1008



AW-B3000

Plasma Asher Descum Software Key Features

- Real time graphics display, process data acquisition, and analysis.
- Closed-loop process parameters control.
- Precise parameters profiles tailored to suit specific process requirements.
- Programmable comprehensive calibration of all subsystems from within the software. This allows faster, easier calibration, leading to enhanced process results.
- Recipe creation to ensure process repeatability. It features a recipe editor to create and edit recipes to fully automate the processing of wafers inside the process chamber.
- Validation of the recipe so improper control sequences will be revealed.
- Storage of multiple recipes, process data, and calibration files so that process & calibration results can be maintained or compared over time.
- Passwords provide security for the system, recipe editing, diagnostics, calibration, and setup functions.
- Simple and easy to use menu screen which allow a process cycle to be easily defined and executed.
- Troubleshooting features which allows engineers and service personnel to activate individual subassemblies and functions. More I/O and AD/DA "exposure".
- DB-25F parallel (printer) port. The computer interfaces to the Allwin21 system with only one cable: the control interface cable.
- The control board inside the machine that translates the computer commands to control the machine has a watchdog timer. If this board loses communication with the control software, it will shut down all processes and halt the system until communication is restored.
- GEM/SECS II function (Optional).
- Advanced Allwin21 End of Process (EOP) function (Optional)

Models	Plasma Power	Wafer Size	Wafer Load	Process Type	Uniformity
Matrix 105R	13.56MHz RF	2",3",4",5",6"	Automatic,	Single wafer	3%~10%
AW-1008R	2.45GHz Microwave	3",4",5",6"	Automatic	Single wafer	13%~20%
AW-B3000	13.56MHz RF	2",3",4",5",6",8"	Manual	Barrel, Batch	25%~35%



AW-105R

RFQ for Fast Free Quotation

for compound materials

Introduction

The AW-105R single-wafer photoresist asher and descum is an automated tool designed as a flexible 13.56MHz RF Parallel Plate downstream plasma photoresist removal and descum system for high-volume wafer fabrication. The AW-105R is in direct response to manufacturer's concerns for wafer uniformity, uptime, reliability and production-proven technology.

AW-105R Specifications

- ❖ Wafer Size: Up to 6.25 inch.
- ❖ Temperature: 60-250°C (±2°C)
- ❖ Gas Lines: Up to three gas lines with MFCs.
Typical MFC configuration: 5 SLM O2 and 500 SCCM N2.
- ❖ Asher Rate: 0.5-1.5 um/min at 200 to 250 °C, bulk strip; 600 A/min at 100 °C, Descum
- ❖ Uniformity: <±8% (Max-Min) Strip; <±5% (Max-Min) Descum
- ❖ Particulate: <0.05 /cm2 (0.3um or greater)
- ❖ Damage: CV:<0.1V from control; Mobile Ion:<1-2 E10 ; Vt :0% total shift on 98%of points tested no shift >5%
- ❖ Selectivity: >1000:1
- ❖ MTBF/MTTA/MTTR: 450 Hours/100 Hours/3.5 Hours or Better.
- ❖ 95% uptime

AW-105R Facilities

- ▶ Plumbed Process Gases: O2 N2
- ▶ Cooling water: 1GPM house circulating supply @ <23 ± 2°C
- ▶ Facility Exhaust: 100 CFM @ 1" static pressure
- ▶ Vacuum supply for Robot: 11.8"Hg(-5.8psi) / 0.1CFM airflow
- ▶ Power: 190-240VAC, single phase, 30A, 50/60Hz (NEMA L-6-30P plug supplied)

AW-105R Configuration

- Main Frame with Circuit Breakers, Solenoid Valves
- Pentium Class PC with AW Software
- Keyboard, Mouse, USB SW backup, and Cables
- Chuck /w Heat, Pump Ring ,Lift Pins
 - ① 2-4 inch; ② 2-6 inch; ③ 4-6 inch; ④ 6.125 inch; ⑤ 6.25 inch
- Center Aligner and Cassette Station
 - ① Two Dimensions ② Four Dimensions
- Anodized Reactor with Door
- Chamber Base plate with water sensor
- Base Plate and Reactor Ceramic Ring
- Base Plate and Chuck Ceramic Ring
- Upper and Lower Electrodes
- Quartz showerhead & Diffusion Disk
- Main Control and Distribution PCBs
- 3-axis Integrated Robust Solid Robot
- RF Matching Network with PCBs
- 13.56MHz RF Generator
 - ① 300W ② 600W
- MFC /w In-line Filter and Solenoid Isolation Valve
 - ① One MFC; ② Two MFCs; ③ Three MFCs
- AC/DC Box with Temperature Controller
- MKS Baratron with Isolation Valve
- Lamp Tower Alarm w/ Buzzer
- Throttle Valve
- Main Vacuum Valve
- Front EMO, Interlocks
- 15-inch Touch Screen GUI



Integrated Robust Solid Robot

Options

- ◆ End-of-Process (EOP)
- ◆ GEM/SECS II (Software)
- ◆ Vacuum Pump
- ◆ Chiller for Chamber Base Plate



AW-1008

RFQ for Fast Free Quotation

Introduction

The AW-1008 single-wafer photoresist asher is an automated tool designed as a flexible downstream Microwave plasma photoresist removal system for high-volume wafer fabrication. The AW-1008 is in direct response to manufacturer's concerns for wafer sensitivity to processing RF damage, uptime, reliability and production-proven technology.

AW-1008 Specifications

- ❖ Wafer Size: 3, 4, 5, 6 inch Capability. Multiple wafer size without hardware charge.
 - ❖ Temperature: 150-350 °C (±2 °C) capability
 - ❖ Gas Lines: Up to four gas lines with MFCs. Popular MFC Range: 5-10 SLM O₂ and 1 SLM N₂.
 - ❖ Asher Rate: 1.5u-5u/min. positive photoresist; >8u/min. negative photoresist
 - ❖ Uniformity: 15%, Process Dependent
 - ❖ Particulate: <0.05 /cm² (0.3um or greater)
 - ❖ Damage: CV: <0.1 V CV-shift for 250A gate oxide
 - ❖ Selectivity: >1000:1
 - ❖ MTBF/MTTA/MTTR: 450 Hours/100 Hours/3.5 Hours or Better. 95%uptime
- *Contact Allwin21 sales for other applications and specifications

AW-1008 Facilities

- ▶ Vacuum Chamber Pump = 165 cfm
- ▶ Cabinet Exhaust = >250 cfm
- ▶ Plumbed Gases: O₂, N₂
- ▶ Electrical Requirements: 208VAC, 3-Phase, 60Hz, 30Amps
- ▶ Weight = 350lbs.

AW-1008 Configuration

- ❖ Main Frame with Breakers, Relays and Wires
- ❖ Pentium Class PC with AW Software
- ❖ Keyboard, Mouse, USB with SW backup and Cables
- ❖ Quartz Tray
 - ① 3-4 inch; ② 4-6 inch; ③ 5inch; ④ 6 inch; ⑤ Others Fixed
- ❖ Cassette Station
 - ① Two Cassette Stations; ② One Cassette Station
- ❖ Lamp Heat Module and Quartz Window (3 of 1000W IR lamp) 6 inch
- ❖ Quartz showerhead and 5 inch Diffusion Disk
- ❖ Chamber Top Plate and Body with TC for Close Loop Temperature Control (CLTC)
- ❖ Main Control, Distributor PCB and DC
- ❖ H1-7X10.5 Integrated Solid Robot
- ❖ Waveguide and Quartz Plasma Tube
- ❖ Blower for Magnetron and Waveguide
- ❖ Capacitor, Two Transformers, HV Diode
- ❖ 1000W Air cooling magnetron
- ❖ 1-4 Gas Lines w/ Pneumatic Valve, and MFC
 - ① One MFC; ② Two MFCs; ③ Three MFCs; ④ Four MFCs
- ❖ AC Box and Lamp Control PCB for Close Loop Temperature Control (CLTC)
- ❖ Main Vacuum Valves. Two, one for Fast and on for slow pump down
- ❖ MKS Baratron
- ❖ Throttle Valve
- ❖ Front EMO, Interlocks
- ❖ 15-inch Touch Screen GUI



Integrated Robust Solid Robot

Options

- ◆ End-of-Process (EOP)
- ◆ GEM/SECS II (Software)
- ◆ Vacuum Pump
- ◆ 1.25KW power



Plasma Asher Descum

ALLWIN21 CORP.



RFQ for Fast Free Quotation

AW-B3000 **Barrel Batch**

Introduction

The AW-B3000 batch/barrel photoresist asher is a manual load tool designed as a flexible 13.56 MHz RF plasma photoresist removal system for high-volume wafer fabrication. The AW-B3000 is in direct response to manufacturer's concerns for Uptime, Reliability, Production-Proven technology. and low cost of ownership.

AW-B3000 Specifications

- ❖ Wafer Size: Sample to 200mm Capability. Multiple wafer size without hardware change
- ❖ High Throughput: Up to 75 WPH. Process Dependent.
- ❖ Temperature: Only TC Option can be used for N2 plasma to heat the substrates up to 170°C.
- ❖ Gas Lines: Up to 5 isolated gas lines with MFCs.
- ❖ Asher Rate: 0-0.1u/min. positive PR; >0.2u/min. negative PR. Slower if Faraday Cage is used
- ❖ Uniformity: Up to 25%. Much lower with Faraday Cage.
- ❖ Particulate: <0.05 /cm2 (0.3um or greater)
- ❖ Damage: Low damage with Faraday Cage.
- ❖ Selectivity: >1000:1
- ❖ MTBF/MTTA/MTTR: 450 Hours/100 Hours/3.5 Hours or Better.
- ❖ 95% uptime

AW-B3000 Facilities

- ▶ Vacuum Chamber Pump = 165 cfm
- ▶ Cabinet Exhaust = >250 cfm
- ▶ Plumbed Gases: O2, N2
- ▶ Electrical Requirements: 208VAC, 3-Phase, 60Hz, 30Amps
- ▶ Weight = 180lbs.

AW-B3000 Configuration

- ❖ Main Body with wires
- ❖ Control Box
- ❖ Pentium Class PC with AW Software
- ❖ Keyboard, Mouse, USB with SW backup and Cables
- ❖ Main Control PCB and DC
- ❖ Transformer, Circuit Breaker, Contactor
- ❖ 1-5 Isolated Gas Lines w/ Pneumatic Valve and MFC
- ❖ Purge has manual regulator in controller box to control speed.
- ❖ Quartz Chamber: Dia 12" x Depth 23";
- ❖ RF Match Network Integrated in the Main Body of tool. Chamber
- ❖ Door with quartz plate in the Main Body.
- ❖ Gas and vacuum lines Connections in the Main Body 13.56MHz RF Generator (Air-Cooled)
- ❖ ① 300W; ② 600W; ③ 1000W; ④ 1200W
- ❖ Lamp tower alarm with buzzer
- ❖ Main Vacuum Valve
- ❖ MKS Baratron
- ❖ Throttle Valve
- ❖ Front EMO, Interlocks
- ❖ 15-inch Touch Screen GUI

Options

- ◆ End-of-Process (EOP) function.
- ◆ GEM/SECS II function (Software)
- ◆ Thermocouple for Chamber Temperature
- ◆ Vacuum Pump
- ◆ Table for AW-B3000

Tel.: 408-778-7788

E-mail: sales@allwin21.com

Website: www.allwin21.com