CCP type plasma etching equipment

Realizes high-precision and high-reliability oxide film microfabrication. Parallel Plate Type Etching System

<CCP－T60M/B2M>

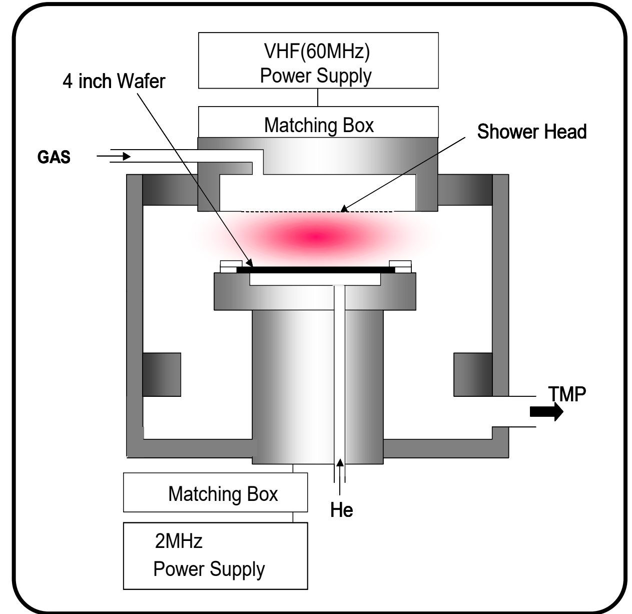
※ Appearance and specifications are subject to change without notice for performance improvement.

- Selective generation of radicals from process gas
- Low electron temperature and high Density Plasma can be obtained.
  60MHz power is applied to the upper electrode.
  → 2 MHz applied to the lower electrode for high-density control of ion energy. (Optional)
- Built-in sequencing program to maintain optimal etching process conditions at all times
  →A cleaning process (O_2) in the etching process removes fluorine-based film from the electrodes and chamber walls.

What is CCP type plasma etching system?

Low-k etching using SiO2 contact holes, SiOCH and organic materials for ultra-large scale integrated circuits (ULSI) Plasma etching technology that introduces Freon gas into the parallel plate plasma mechanism enables high-precision etching of nano-level, we have been performing high-precision nano dimensional processing by plasma etching technology that introduces a Various methods are used in plasma etching systems.
The parallel plate etching system is the world standard for silicon-based oxide film etching using CFC-based gases.

Schematic diagram



Standard specification

External dimensions(control system ・ Excluding gas systems)･･･W2,000mm × D2,000mm × H2,000mm

Ⅰ) CCP Type 2 Frequency Etching Machine			
Process Chamber	Material	SUS304	1set
	Size	φ300×H300mm	
	Wall heater	RT～100℃	
	Supported board sizes	φ4 inch 1sheet	
	Ultimate vacuum	10^{-2}Pa range	
Board Stage	Cooling method	Refrigerant circulation and Helium	1set
	Refrigerant temperature used	-20～60℃	
	Board retention	Electrostatic chuck	
	RF Bias	2MHz 500W	
Upper electrode	RF Power Supply	60MHz 1000W	1set
	Electrode	Shower head electrode with cooling function	
	Refrigerant temperature used	20～60℃	
Vacuum exhaust system	Vacuum pump	TMP(800ℓ/s) ＋Dry pump	1set
	Vacuum gauge	Ionization vacuum gauge	1set
	Pressure control	Capacitance manometer	1set
	Belonging	Gate valve	1set
		High Vacuum Angle Valve	
		Piping, etc.	
Control system	Interlock	Equipped	1set
	Power supply control panel	PLC control, touch panel system	

Ⅱ) Load Lock Chamber			
Chamber	Material	SUS304	1set
	Substrate Size	φ4 inch 1sheet	
	Conveyance system	Automatic transport	1set
Exhaust system	Vacuum pump	TMP(50ℓ/s) ＋RP	1set
	Vacuum gauge	Ionization vacuum gauge	
	attached	High vacuum angle valve	
		Piping, etc.	

Ⅲ) Gas supply system			
Gas supply system	Number of systems	Process Gas	5system
		N_2 purge	1system
	others	Valves, piping, etc.	1set

Ⅳ) Chiller unit			
Bottom cooling	Cooling capacity	1000W	1set
	Temperature control range	-20～200℃	
Top cooling	Cooling capacity	500W	1set
	Temperature control range	20～60℃	

◎ Other options
・Emission spectrograph
・Feedback control interface, etc.

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