Specifications and Quotations

Compact System

- Magnetron sputter-

Feature of Magnetron Sputtering System

1. Deposition material and thickness : Metals, Oxides(Option2,3)

- **2.** Film thickness uniformity : $\leq \pm 5 \%$
- 3. Substrate Holder : about OD 50 mm

4. Deposition : deposition by DC Magnetron sputtering method

 deposition by RF Magnetron sputtering method (Option 3)

5. Throughput : up to Φ2" substrate x 1 sheet / batch
- up to Φ3" substrate x 1 sheet / batch(Option1)

6. Deposition thickness : Customer specified

Feature of Magnetron Sputtering System

- 7. Vacuum : Base pressure : 5 x 10 -5 Torr
 - Ultimate pressure : 5 x 10 -6 Torr
- 8. Vacuum chamber : Process chamber (ID250 x H300 mm)
- 9. Control system : Manual control
- 10. Purpose : Research and development

1. Vacuum chamber module

- a. Process chamber
 - Chamber size (ID250 x H300(mm))
 - Hinged Top door
 - Rear of chamber: pump and pumping line installation
 - Ports: for Pumping, venting, gauge, window, thermal boat, valves, etc.

b. Substrate holder (plate)

- about OD 50 mm, plate for Φ 2 inch x 1 ea
 - about OD 76 mm, plate for Φ 3 inch x 1 ea (Option 1)
- Sample (un)loading : Manual
- Rotation speed is adjustable (0~20rpm) (Option 1)

2. Vacuum module

a. Vacuum pumps

- Oil Rotary pump(150 l/min)(Kodivac), 1 set, for roughing pumping of process chamber
- Oil Diffusion pump(N₂, 215 ℓ /sec)(Kodivac), 1 set, for high vacuum pumping of process chamber
 - Oil Diffusion pump \rightarrow Turbo Molecular pump (80 ℓ /sec) exchange (Option 4)
- The capacity of each vacuum pump must satisfy followed conditions,
 - Base pressure 5 x 10⁻⁵ Torr
 - Ultimate pressure 5 x 10 ⁻⁶ Torr.

b. Vacuum valves and pumping lines

- Right angle valve, 1 set, for Diffusion pump
 - Gate valve, 1 set, for Turbo Molecular pump (Option 4)
- Right angle valve, NW 25, 1 set for roughing & slowing roughing pumping
- Right angle valve, NW 25, 1 set for foreline pumping of Oil Diffusion pump
- Venting valve, 1 set for Process chamber venting
- Pumping lines

c. Vacuum measurement

- Low vacuum gauge sensor, 1set
- High vacuum gauge sensor, 1set

3. Magnetron sputtering module

- a . Magnetron sputtering cathode, 1set
 - Target size : 3 inch diameter
 - Cooling : Internal to backing plate
 - Manual shutter
 - Fixed angle

b. DC power supply, 1set

- 1 kW (800V 1.25A), DC Sputtering power supply, 1set
- cable : M-N type

c. RF power supply, 1set (Option 3)

• 300W RF generator (Operate on the ISM frequency of 13.56 MHz)

4. Thermal evaporation source module

- MFC : Ar (100sccm) for sputtering process
 - O2 (100sccm) for sputtering process (Option 2)
- Read/out box : 1 channel, 1set
 - 2 channel, 1set (Option 2)
- Gas valve : Ball valve (manual type), A-lock fitting
- Gas line & Fitting : EP grade SUS tube, A-lock fitting

5. Frame

- Frame size : 650(W) x 900(D) x 900(H) mm
- Painted profiled mild steel
- The whole machine is covered with paint removable panels
- The frame is also equipped with adjustable legs

6. Facilities (Customer side)

- a. Water flow system with purging valve
- b. Electric power requirements : AC 220V, 20A (about max. 4kW)
- c. Exhaust line NW25 for roughing pump
- d. Gas requirements
 - Argon gas for sputtering process, 99.999%, regulator, A-lock fitting
 - Oxygen gas for sputtering process, 99.999%, regulator, A-lock fitting (Option 2)
- e. Sputtering target : 3" target with thickness 6.35mm

Proposal of Magnetron Sputtering System

7. Warranty

• During one - year period, Manufacturer warrants for repair all faulty equipment without charge except that improper operation, maintenance and handling by the customer. All consumable materials are entirely excluded from warranty.

8. Delivery

- Normally 8 weeks after PO
- 9. Validity
 - 30 days from the date of signature

Proposal of Magnetron sputtering System

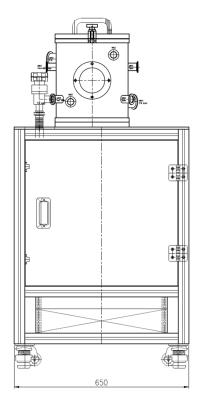
10. Attachment

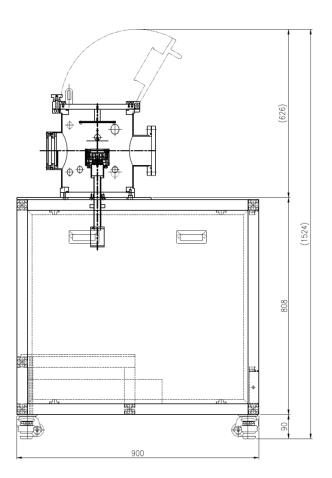
• Concept drawing and photograph of proposal Magnetron sputtering system

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Layout - All





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