HIGH VACUUM
COATING SYSTEMS

With a long history of active participation and standing for more than 18 years of development in project and by utilizing the full capabilities of its specialist and updated technology as basic knowledge of pro-active organization, High Vacuum Technology Center as a unique engineering and research center has been able to design and manufacturing product in vacuum technology (Thin Film Deposition Systems) to many universities ,research centers and industries.

Applications

Optics, Electro-Optics, Nano technology, Microelectronics, Superconductors, Optical Filters, Laser mirrors & Optical components, Metal Layers, Dielectric Layers, Hard Coatings and Decorative Coatings.

Research Fields

Ultra high Vacuum, Ion Sources, Plasma and Electromagnetic Field Simulations

Products

High Vacuum Evaporation System
Vacuum RF & DC Magnetron Sputtering System
Pulsed Laser Deposition System
Vacuum Melt Spinner System

Sub Systems

Electron Beam Evaporation Source
Magnetron Sputtering Cathodes
Quartz Crystal Thickness Monitoring Head
Feedthroughs
Sample Heaters
Workholders

High Vacuum Systems Repair & Maintenance

Design, Manufacturing & Supplying Spare Parts
Assembling & Disassembling,
Operational Tests,
Leak Detection

High Vacuum Technology Training

High Vacuum Evaporation Systems (Model: ETS-160, EDS-160)

SPECIFICATIONS

Chamber	Stainless Steel- Volume: 110 Liters 2 View Ports, 17 Feedthrough Bores, 26 mm
Final Pressure	10^{-6} mbar
Vacuum Pumps	Mechanical Pump and Diffusion or Turbomolecular Pump
Coating Vacuum Preparation Time	40 minutes
Operation	Semiautomatic with Electrical PowerWater, Pressurized Air and Operator Malfunction Protection
Chamber Lifting Mechanism	Pneumatic

Main Accessories

- Electron Beam Evaporation Source, 3KW with 270° Beam Deflection Angle
- Power Supply 3KW,6KV for Electron Beam Source
- High Current Thermal Evaporation Source, 250 Amps, AC
- Nitrogen Cold Trap for Diffusion Pump
- Butterfly Valve for Diffusion Pump
- Computerized Thickness Monitoring System
- Rotational Sample Holder with Controller
- Sample Radiant Heater With PID Temperature Controller

Vacuum RF & DC Magnetron Sputtering System (Model: MSS)

Main Accessories

- Magnetron Sputtering Cathode; 3" and 2" Targets(as ordered)
- 1KW DC Power Supply
- 600 W RF Power Supply at 13.56 MHz
- Automatic and Manual Matching Box
- Computerized Thickness Monitoring for each Cathode
- Manual Sample Holder
- Station Shutter with Manual Control
- Sample Shutter with Manual Control
- Local Plasma Cleaning Cathode

SPECIFICATIONS

Steel Chamber Volume	60 Liters
Final Pressure	10^{-6} mbar
Vacuum System	Mechanical & Turbomolecular Pumps
Operation	Semiautomatic with Electrical Power Water, Pressurized Air and Operator Malfunction Protection
Chamber Lid Lifting Mechanism	Pneumatic

Pulsed Laser Deposition System (Model: LTS)

SPECIFICATIONS

- Steel Chamber Volume: 20 Liters
- Final Pressure: 10^{-6} mbar
- Vacuum System:Mechanical & Turbomolecular Pumps

Main Accessories

- Sample Radiant Heater with PID Temperature Controller
- Computerized Thickness Monitoring
- Rotary Target Holder, with Adjustable Speed and Adjustable Laser Beam Position.
- Three Target Holders - Externally Interchangeable
- Rotatable Work Holder with Adjustable Distance to Target

Vacuum Melt Spinner

Specifications

- Disk Velocity: 0- 40 m/s
- Chamber Volume: 200 Liters
- Final Pressure: 10^{-5} mbar
- Operation:Manual
- Vacuum System:Mechanical & Diffusion Pumps
- Copper Disk Diameter:24 cm
- Injection Angle: 0-20 °

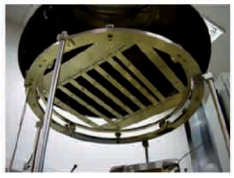
Main Accessories

- 4 & 7 cm Induction Coils
- 15 KW RF Power Supply,450 Hz
- Quartz Nozzle

APPLICATIONS

- Production of amorphous and nano-crystalline alloys
- Nanostructured flake
- Sensors for force, impact and speed
- Electromagnetic protection of goods
- Transformer cores, chokes
- Filters and magnetic shields

Rotary Workholders

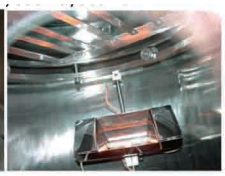



Rotary
Planetary
Motorized
Sample Holders, as ordered

Quartz Crystal Thickness Monitoring Head

Stainless Steel Crystal Holder with Water Cooling, Steel or Copper Flexible Capillary Tubes
Quartz Crystal, 6MHz
Oscillator, 6MHz
PCI Control Card

Sample Heaters

Radiant, IR
Front or Back Side Heating
PID Temperature Controller, 300 °C /900 °C

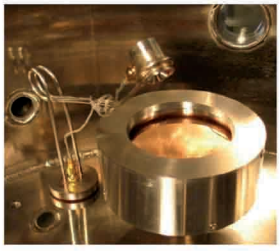
Electron Beam Evaporation Source

Power: 3KW
Beam Rotation: 270°
Crucible: Cupper Crucible, Water Cooled, 20 cc in volume, Graphite Crucible,6 cc in volume
Voltage: -6 KV
Power Supply: 3 Phases, 10A
Beam Displacement: Manual in longitudinal Direction

Electrical Feedthroughs

High Current, Water Cooled, 500A
High Voltage, 10 kV
Electrical, Multi - Pin
Mechanical, Rotary and Translational
Special Purpose

Magnetron Sputtering Cathodes



600 Watts Power
2" & 3" Target
Circular Planar Magnetron
for RF & DC Sputtering