## Accessories

### 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

### RF & DC Ion Source

Specification
Beam size at grids: 6 cm
Beam current: 1-100 mA
Beam energy: 100-1300 eV
Beam neutralization
Water-cooled
Usable with inert & active Gas

### Sample Heaters

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

High Vacuum Technology Center
Tel: +982166075613-4
Fax: +982166075613,9
Email: hivac@jdsharif.ac.ir
web: www.jdsharif.ac.ir

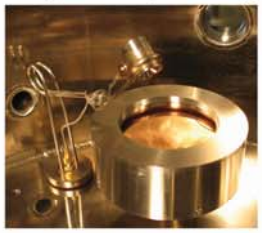
### Electron Beam Evaporator Source

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

### Electrical Feedthroughs

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

### Magnetron Sputtering Cathodes



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

# HIGH VACUUM
# COATING SYSTEM

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

- Space Simulation for Satelite Test
- Optics, Electro-Optics
- Nano Technology
- Microelectronics, Superconductors, Optical Filters
- Laser Mirror & Optical Component, 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 Suttering Cathodes
Quartz Crystal Thickness Monitoring Head
Feedthroughs
Sample Heaters
Workholders

### High Vacuum Systems Repair & Maintenance

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

### High Vacuum Technology Training

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

SPECIFICATIONS

| | |
|---|---|
| Chamber | Stainless Steel-Volume: 110 Liters<br>2 View Ports , 17 Feedthrough Bores, 26mm |
| Final Pressure | $10^{-6}$ mbar |
| Vacuum Pumps | Mechanical Pump & Diffusion or Turbomolecular pump |
| Coating Vacuum Prepration Time | 40 min |
| Operation | Semiautomatic with Electrical Power , Pressurized Air & 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 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(Models: MSS)

Main Accessories

- Magnetron Sputtering Cathodes: 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 Sontrol
- Local Plasma Cleaning Cathode

SPECIFICATION

| | |
|---|---|
| Chamber | Stainless Steel-Volume: 60 Liters<br>3 View Ports , 9 Feedthrough Bores, 26mm |
| Final Pressure | $10^{-6}$ mbar |
| Vacuum Pumps | Mechanical Pump & Turbomolecular pump |
| Operation | Semiautomatic with Electrical Power , Pressurized Air & Operator Malfunction Protection |
| Chamber Lid Lifting Mechanism | Pneumatic |

## Pulsed laser deposition system (model: LTS)

Specications

Steel chamber volume 20 liters
Final pressure 10-6 mbr
Vacuum system: mechanical & Turbomolecular pumps

# Main Accessories

- Sample Radiant Heater with PID Temperature Controller
- Computerized Thitttckness Monitoring
- Rotary Target Holders – Externally Interchangeable
- Rotatable Work Holder with Adjustable Distance to Target

## Vacuum melt spinner

**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
- Sensor for Force, Impact & Speed
- Electromagnetic Protection of Goods
- Transformer Coews, Chokes
- Filters and Magnetic Shields

# 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°