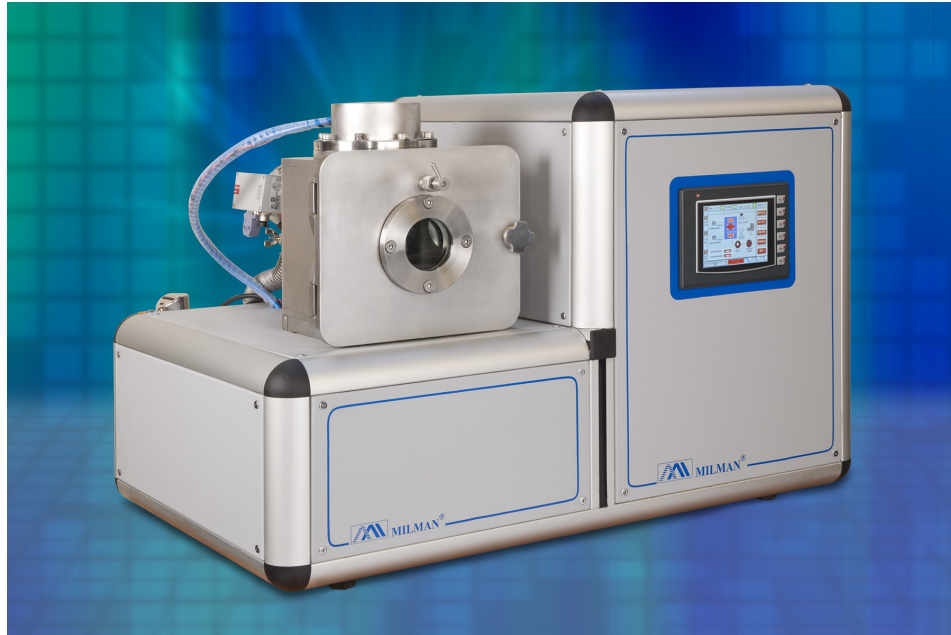


# MINI PVD STATION



## MAIN FEATURES

- COMPACT STAND ALONE TABLE TOP MODEL
- UNIVERSAL PLATFORM TO PROVIDE FOR
  - MAGNETRON SPUTTERING TECHNOLOGY
  - PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION
  - REACTIVE ION ETCHING
  - PLASMA ASHING
  - PLASMA SURFACE ACTIVATION AND
  - THERMAL EVAPORATION
- TURBO MOLECULAR PUMP TO PROVIDE FAST AND CLEAN OILFREE HIGH VACUUM
- USER FRIENDLY FRONT PANEL COLOR LCD BASED TOUCH SCREEN HMI CONTROL
- PLC BASED PROCESS AUTOMATION WITH RECIPE MANAGEMENT<sup>1</sup>
- SUBSTRATE HEATING FACILITY UP TO 250°C

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<sup>1</sup> With manual override



- LOW FOOTPRINT WITH UNIVERSAL SINGLE PHASE INPUT POWER
- LIMITED UTILITIES REQUIREMENT
- “CE” CERTIFICATION

**Mini PVD Station** offers researcher an exceptionally versatile tool for nascent as well as time bound projects. With the use of single platform end user is successfully able to work with

1. Magnetron sputtering Technology
2. Plasma Enhanced Chemical Vapor Deposition
3. Reactive Ion Etching
4. Plasma Ashing
5. Plasma Surface Activation and
6. Thermal Evaporation

All these technologies are compiled in the universal Platform which is based on Table Top Configuration. Mini PVD Station incorporates a universal platform wherein main process chamber accepts number of specifically designed different components enabling user to work with any of the above mentioned technologies without any limitations. Configuration switch over between different technologies is simple and can be done in shortest possible time. This is the most compact equipment in this category that provides end user with high flexibility as never possible before. Merely by replacing certain components on the process chamber and adding adequate power supplies, if any, same equipment can be made to undertake any of the above mentioned processes.

The system can be operated through color LCD based touch screen (HMI) located on the front panel. The operation can be in Manual or Auto mode. USB port on front panel provides data logging facility to record and download process parameters. Separate port is provided which can be utilized for software upgrades and remote maintenance. Compact flash-drive provides means to upload software specific to each process technology. Installation and commissioning of equipment does not require elaborate set up in terms of utilities and space. The system is table top and does not require more space. It consumes low power (Single Phase) and a small water chiller can take care of all the cooling requirements. There is no requirement for compressed air.

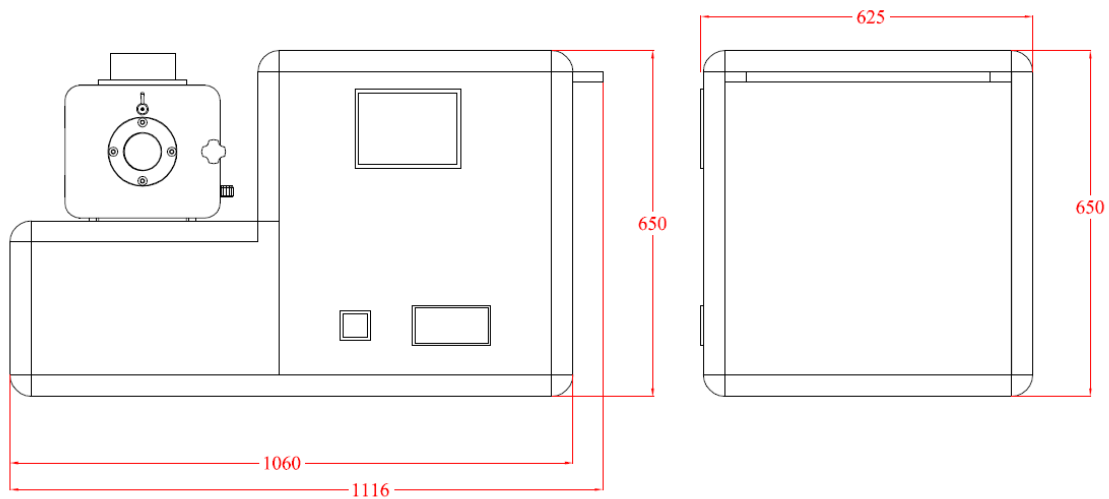
The platform along with all accessories is equivalent to complete laboratory set up any person in the field of Thin Film Technology, Surface engineering / CVD technology can dream of.



Application Ares:

- Thin Film physics
- Sensors and actuators
- MEMS technology
- Solar Cells
- Plasma sterilization
- Plasma surface activation
- Plasma Based High End Lithography (RIE and Plasma Etching)
- Plasma Ashing
- Metallization for contacts
- Magnetic thin films
- Ceramic Coatings

Schematic with dimensional details is give below<sup>2</sup>



<sup>2</sup> All dimensions are in mm

**Substrate Diameter:** PVD Mini Station can handle samples up to 1 inch diameter. Type of substrate can be silicon wafer, glass, metal, ceramics etc. Large substrate table size for coating bigger samples can be provided on request which can be used in the absence of thickness monitor.

**Substrate Heating:** Substrate heating is provided up to 250°C.

**Substrate Rotation:** Substrate rotation as well as tilting arrangement continuously through different angle from 0 to 30° simultaneously can be provided as an option. Tilt is provided up to 30° so that the sample can be coated on the edges whenever application demands.

### **Magnetron Sputtering Configuration**

All Magnetron Sputtering Configurations are Sputter-down modes. The cathode typically uses standard 2" diameter target in clamp-on fashion. Cathode is equipped with independent shutter. Compact magnet plate makes use of rare earth magnets enabling high rates of deposition. The unit is provided with Pulsed DC power supply of 350 Watts/ 30 kHz. The cathode, however, is also compatible with RF power supply which can be supplied separately. Cathodes which can sputter magnetic materials such as Fe, Co etc. will be specifically supplied when demanded. Substrate stage can be supplied with facilities such as tilt, rotation, heater and electrical isolation for biasing purpose optionally. Cathodes that accept 3" diameter target can be provided on request.

**Table top based plasma Processing Platform:** All purely plasma based surface engineering techniques, such as, **Plasma Enhanced Chemical Vapor Deposition, Plasma Etching / Reactive Ion Etching, Plasma Ashing or Plasma Surface Activation** are implemented in parallel plate geometry wherein top and bottom flanges are used for suitable type of electrode. The configurations are supplied with standard Pulsed DC power supply. RF power supply can be supplied as an option.

Some additional Optional Items that are available with equipment are magnetron sputtering compatible Quartz Crystal based Digital Thickness Monitor, RF power supply etc.

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