

NanoStructured Coatings Co.



Nanostructured Coatings Co.
The Products & Specification

Nanostructured Coatings Co. is the owner and manufacturer of the Sputter & Vacuum Coaters.

NANOSTRUCTURED COATING CO.

Unit No.14&15 , 4rd Floor , Apartment No.5

Ghadir St. , Azadi Ave ,Tehran , Iran

Tel: +98 21 66067785, +98 21 66033555

Fax:+98 21 66033450

E-mail: Info@pvd.ir

Web: www.pvd.ir

[For technical and applications advice plus online order for spares and consumables parts visit www.pvd.ir](http://www.pvd.ir)

High Vacuum, Triple Magnetron Target Desk Sputter Coater

The DST3-T is a triple-target, turbo molecular-pumped, multi vacuum coater system, combines thermal evaporator and sputter coater in one single compact desktop system. It is suitable for deposition of a wide range of materials. The system can easily switch between evaporation and sputtering condition (Not simultaneously).



The DST3-T is equipped with a large chamber (300 mm diameter) and three 2” diameter water cooled cathodes which make it suitable for long time deposition.

The magnetron desk sputter coater is equipped with RF and DC power supplies. It can sputter semiconductors, dielectrics and metal (oxidizing & noble) targets.

The system is equipped with an auto adjustable matching box, minimizing the reflected power in the RF sputtering process.

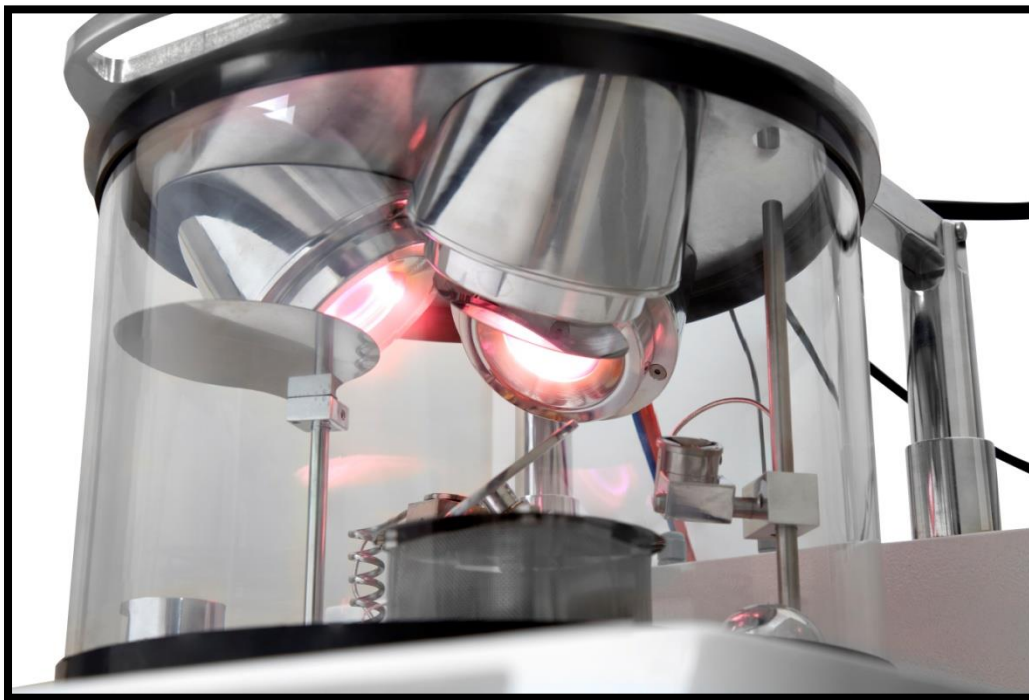
For increasing film adhesion to the substrate and to improve the film structures, a 300 V, DC bias voltage can be applied to the substrate (optional).

According to state of the cathodes, DST3-T is available in two models:

- **DST3 – TA (Angled Cathodes):**

The DST3-TA is equipped with three angled cathodes with a common focal point. It can sputter from two or three (optional) targets simultaneously or independently to form alloys or multilayer deposition respectively.

The maximum size of substrates in this model could be 3 inches.



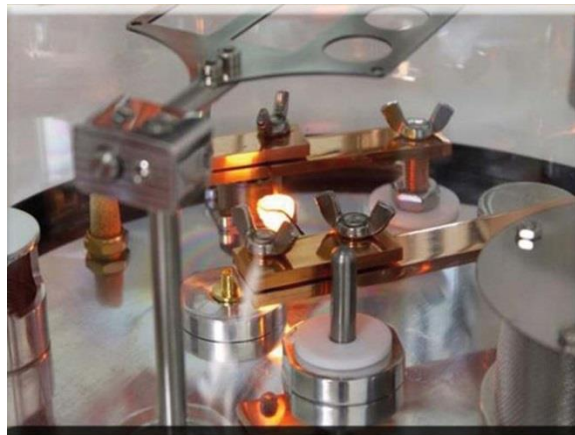
- **DST3 –TS (Straight Cathodes):**

DST3-TS with three straight 2 inches water cooled cathodes is suitable for sputtering a single large specimen with diameter up to 20 Cm or several small specimens.



Thermal Evaporation

The DST3-T is equipped with a high current power supply and low-voltage (resistive) thermal evaporation platform suitable for a wide variety of thermal evaporation applications. The system allows controlled thermal evaporation of wide range materials onto substrate. Different types of thermal evaporation sources (Boat, Basket, and coil) can be installed on the single thermal source holder.



Features

- Sputtering and Thermal evaporation process in a compact system.
- High vacuum level.
- Equipped with DC and RF power supplies suitable for metals, semiconductors and dielectrics.
- Three 2" water-cooled angled, magnetron cathodes suitable for producing alloy films (DST3-TA) and multilayer deposition.
- One thermal source installation.
- Two fixed and movable quartz crystal monitoring system for real time thickness measurement (1 nm precision).
- Two MFCs.

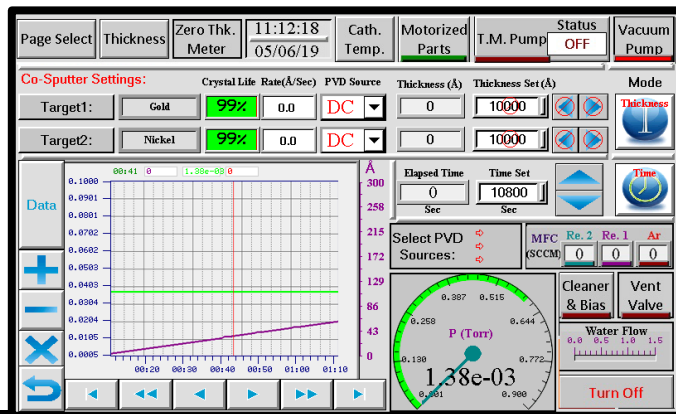
- Manual or automatic Timed or Thickness deposition.
- Intuitive touch screen to control coating process and rapid data input.
- User friendly software that can be updated via network.
- Equipped with 3 manual shutters.
- Tilt able and change height of rotary sample holder with ability to selection of the cathodes.
- 500 °C substrate heater (optional).
- 300 V DC substrate bias voltages (optional).
- Unlimited deposition time without breaking vacuum.
- Two-year warranty.

Clean Vacuum

The vacuum chamber is Cylindrical Pyrex with 300 mm OD and 200 mm H. The DST3-T is fitted with an internally mounted 90 l/s turbo molecular pump, backed by a 4 m³/h two stage rotary vane pump.

Touch Screen Control

DST3-T, is equipped with a 7" colored touch screen and semi-automatic control and data input that can be operated by even inexperienced users. The vacuum and deposition information can be observed as digital data or curves on the touch screen. Information of the last 300 coating can also be saved in the history page.



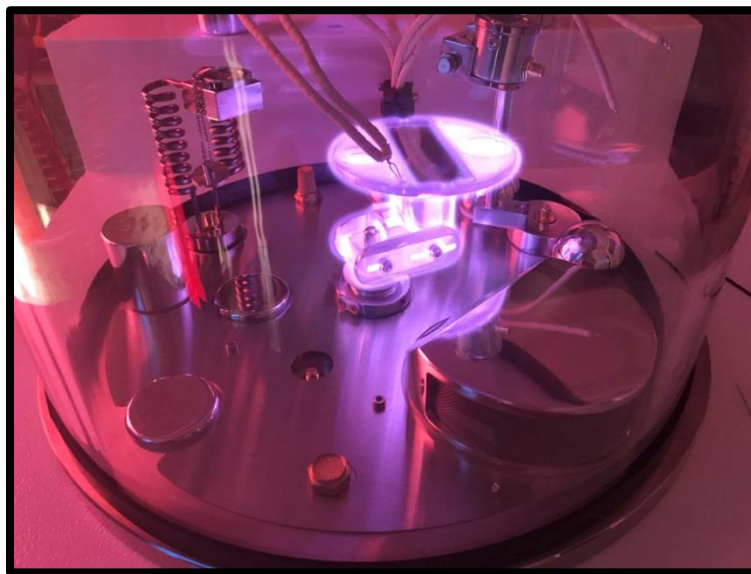
Sample Holder

The holder is made according to the conventional size of microscope slides, but the user can order customize size according to his/her needs. On the sample holder number of clamps is created to hold the small samples with a simple method during the rotation.



Plasma Cleaner

DST3-T is equipped to plasma cleaner option. Plasma cleaning is the process of removing organic matter from the surface of substrate through the use of an ionized gas called plasma. Pre-Cleaning the substrate prior to the deposition of film to eliminate contamination (C-based, Oxides) from substrate surface improve the adhesion between the substrate and the subsequent layers.



Applications

- Metal, Semiconductor and Dielectric Films
- Nano & Microelectronic
- Solar cell applications
- Co-Sputtering processes
- Glad sputtering
- Optical components coating
- Thin film sensors
- Magnetic thin film devices
- Computer memory applications
- Fine grain structural deposition for SEM & FE-SEM sample preparation

Specification

- High vacuum turbo pump.

Pumping Speed:	90 l/s	350 l/s
Ultimate Pressure:	7×10^{-6} Torr	7×10^{-7} Torr

- Two stage rotary backing pump.
- Independent sputtering control rate for each cathode to produce fine grain structures.
- Automatic control of deposition power independent of pressure.
- Automatic control of the cathode's temperatures to protect the life time of the magnets.
- Precision Mass Flow meters (MFC) for fine control of vacuum and so reactive sputtering.
- Records and plots of coating parameters graphs.
- Transfers curves and deposition process data by a USB port to PC.
- 300V DC bias voltage (optional).
- Equipped to plasma cleaner (optional).
- Equipped to 500°C substrate heater (optional).

- 0-1000 mA DC power supply.
- 0-24 V, 0-100 A high current power supply.
- Water cooled high current electric feed through.
- 300 W RF power supply with automatic matching box.
- Utilities: 220V-240V, 50/60HZ- 16A.
- Box Dimensions: 50 cm H x 60 cm W x 47 cm D
- Shipping Weight:160 kg (pump, rack and box)

Options and Accessories

The DST3-T has the following options and accessories:

- Quartz crystal sensors.
- Spare vacuum glass chamber.
- Sputtering targets.
- Thermal source materials.
- 300V DC bias voltage.
- Plasma cleaner.
- 500°C substrate heater.
- Sealing gaskets.