

# SMART NanoTool PLD

## Versatile Research Pulsed Laser Deposition



### SVT Associates, Inc.

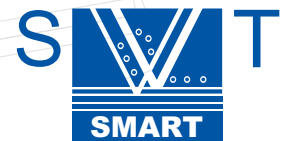
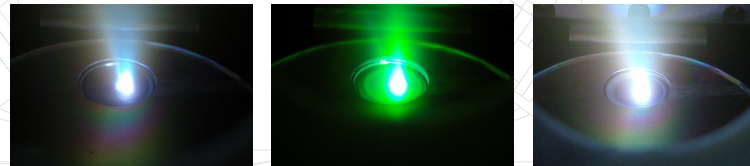
- Leading manufacturer of thin film deposition equipment since 1990
- In-house laboratory for materials research and process development
- Established a diverse range of deposition components, systems, integrated sensors, and process control
- Developed strong combination of equipment manufacturing and process know-how
- Seven Applications Laboratory deposition systems producing world class materials
- Diverse system product line spanning the thin film deposition market
- Leading supplier with over 120 systems in the field

### SMART NanoTool PLD

- SVT Associates SMART (Scientific Materials and Applied Research Tool) Pulsed Laser Deposition System is a unique research tool. Combining Laser Ablation with our unique deposition techniques offers a broad range of possible materials and applications.
- A multitude of thin film structures are possible utilizing six rotational targets that are individually indexed.
- Optional in-situ monitoring tools provide the user with enhanced process feedback.
- Interfaces with Excimer and YAG Lasers.
- Available load lock sample handling allows the SMART system to interface with other deposition or metrology tools.

### Applications

- Multiple Component Complex Oxides
- High Temperature Superconductors
- Magnetic and Metallic Material Deposition
- Low Vapor Pressure Materials
- MEMS



# SMART NanoTool PLD-01

## BASE SYSTEM

### Chamber and Vacuum Pumps

- 12" Quick Access Door, 250l/s Turbo Pump
- Full Range Vacuum Gauges

### Deposition Sources

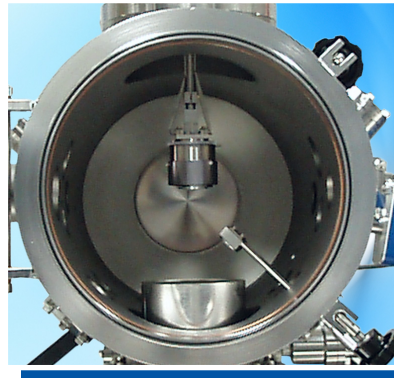
- Target Stage, Six 1" (25 mm) Targets with Rotation and z-Direction Translation

### Deposition Stage

- 1" (25.4 mm) Sample Size, Heating to 800 °C, Continuous Rotation, z-Direction Translation

### In-Situ Process Monitoring Tools

- Quartz Crystal Deposition Rate Monitor



## AVAILABLE OPTIONS:

### Deposition Sources

- Thermal Evaporation Sources, Effusion Cells, Sputter Sources, E-Beam Evaporators, RF Plasma Sources

### Deposition Stages

- Multiple Options Up to 2" Sample Size

### Metrology Tools

- 10kV to 30kV RHEED Packages

### Vacuum Packages

- Ion Pumps, Turbo Pumps, Cryo Pumps, Gate Valves

### Gauge Packages

- Multiple Gauge Packages Available

### Gas Control Packages

- Mass Flow and Leak Valve Packages
- Upstream and Downstream Throttling Control

### Loadlock Package

- Loadlock, Docking and Transfer Configurations

### Ultra High Vacuum

- Differential Pumping and System Bakeout Options Available

## AUTOMATION

### Automation Package:

- Control Sample Temperature and Rotation
- Indexed Target Position
- Target Rotation
- Gas Control
- Compute Rate & Thickness using QCM Output
- Laser Beam Scanning (*optional*)
- Laser Interface for Beam Blanking
- Automated Pumpdown and Venting
- Differential Pumping
- RHEED Analysis (*optional*)
- Load Lock Pressure Monitoring (*optional*)

