

PLD 350

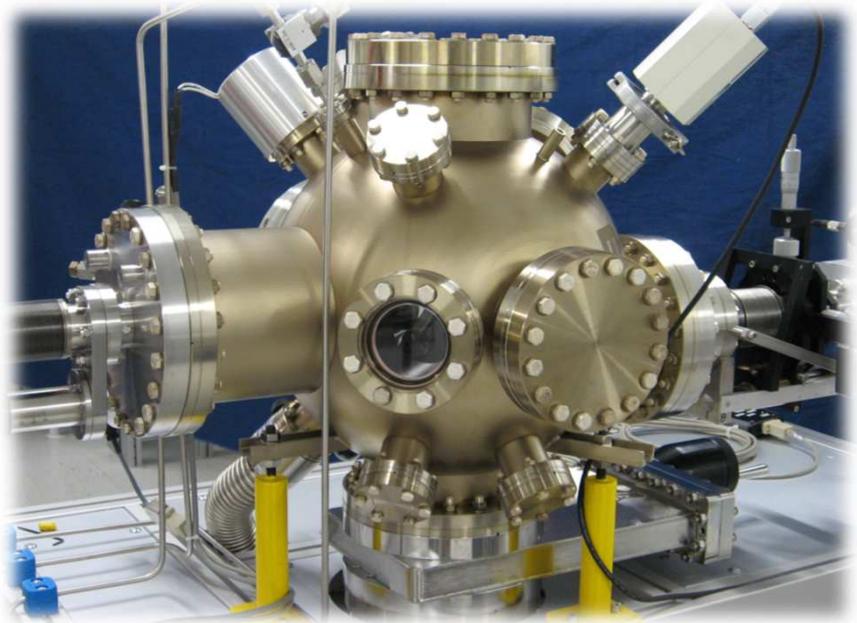
UHV PULSED LASER DEPOSITION SYSTEM

Benefits :

- ◆ Thin film growth of complex materials
- ◆ UHV quality
- ◆ Oxygen-resistant 950°C 2" sample holder
- ◆ Adjustable distance from substrate to target
- ◆ Combinatorial deposition
- ◆ RHEED
- ◆ 10⁻⁸ mbar chamber
- ◆ Flexible & evolving
- ◆ Full supervision
- ◆ Cost effective

Main specifications :

- ◆ Transferable 2-inch substrate holder
- ◆ Ports for in-situ characterization
- ◆ Reactive or UHV Pulsed Laser Deposition capability
- ◆ 4-axis target holder (6 targets of 1 inch)
- ◆ Turbomolecular pumping
- ◆ Optional load lock chamber
- ◆ Ion gun cleaning
- ◆ off-axis sputtering deposition



Synthesis of complex materials & crystalline structures is a constant growing request from the research. Pulsed Laser Deposition (PLD) is one answer. It is a versatile coating technique that allows the growth of various materials as nitrides, oxides, superlattices, polymers, composites...

From a comprehensive experience and know how in R&D deposition system and ultra high vacuum technology, Vinci Technologies has designed a Laser-MBE system, easy to operate, dedicated to academic & industrial researchers.

Flexible and evolving, this pulsed laser deposition system allows coatings on substrates up to 2". A large field of parameters can be explored like pressure, distance between target and substrate. This flexibility gives to the operator the possibility for depositing a multitude of thin film structures. Dedicated software was developed to get a full supervision of the system. In addition to the performances of the PLD-350 system, it provides high quality and reproducible processes to users.

Substrate manipulator

- ◆ O₂ compatible 950°C heater
- ◆ 2" substrate
- ◆ 50 mm Z translation
- ◆ 0-60 rpm rotation
- ◆ Shutter for pre-ablating



The deposition stage welcomes substrates up to 2-inch. It has a high temperature oxygen resistant heater in order to enhance crystalline structure for simple element coatings and complex ceramic compound. The deposition stage is supplied with a motorized rotation and X-axis for improving uniformity of the films.

6-target holder manipulator

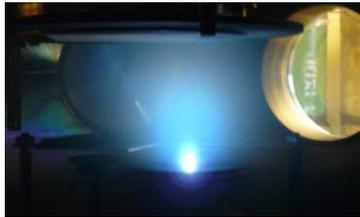
- ◆ Continuous rotation
- ◆ Selection of the targets
- ◆ Shielding preventing cross-contamination



The target manipulator accommodates up to six 1-inch diameter targets. The selection of the target is done through a controlling computer. Each of the individual targets rotates about its axis, providing a uniform erosion of the target when using with a laser scanning system.

Process

- ◆ UHV to high pressure
- ◆ Reactive gas
- ◆ Combinatorial deposition
- ◆ Process monitoring
- ◆ Data acquisition



Efficient turbopumping group from UHV to high partial pressure of reactive gas. Combinatorial deposition capability.

In-situ analysis



On request, some specific analysis systems can be added like : calorimeter, RHEED, pyrometry, ellipsometry

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