

Pulsed Laser Deposition - Sputtering Module

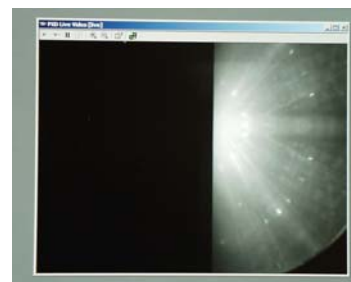
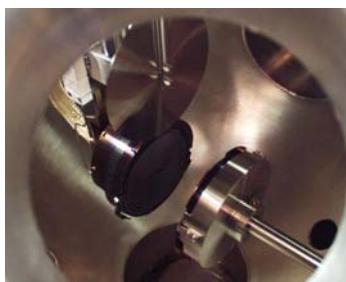
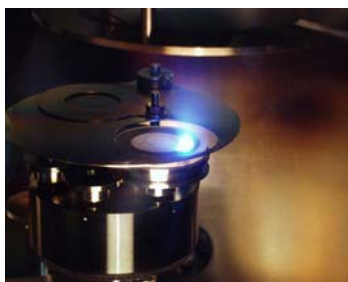
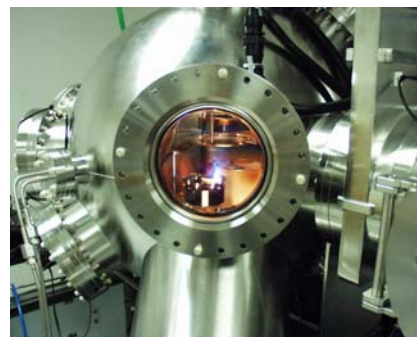


Neocera is offering UHV compatible, advanced combination deposition tools integrating Pulsed Laser Deposition and Sputtering modules to create atomically clean, device quality interfaces and nanostructures. The systems have load-lock capability and are designed for incorporating RHEED diagnostics for achieving film growth control at the atomic level.

Atomic scale interactions occurring at surfaces and interfaces dominate thin film properties and the underlying device potential. As the thickness of the individual layers in a multi-layer thin film device structure continues to shrink to a few atomic or a few monolayers, as seen in the semiconductor industry (gate oxides) and magnetic data storage community (GMR, TMR, CMR, MTJ etc), the need for advanced thin film deposition techniques with a high degree of interface control has also become extremely stringent.

Several of the multi-layer stacks consist of thin layers of metals and insulating oxides and demand the use of more than one deposition technology to build the complete stack. Neocera's PLD-Sputtering module addresses this need. The Combination PLD/Sputter modules are becoming pervasive particularly in areas where complex oxides are deposited in conjunction with metals. Examples include dilute magnetic semiconducting (DMS) oxides, transparent conducting oxides (TCO), metal/oxide/metal magnetic tunnel junctions (MTJ), piezoelectric oxide based MEMS, high-k capacitors etc.

- Base pressure: 9×10^{-9} Torr
- 6 targets for PLD, 3 Targets for Sputtering
- RF and /or DC Sputtering options
- Rotating Substrate size: 2 inch diameter
- Substrate Temperature: 900°C,
- Oxygen and other process gas compatibility
- Load-lock capability
- Optional RHEED diagnostics



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