

PLD

Pulsed Laser Deposition System



Applications:

Sensors, Superconductor Thin films, oxides, nitrides, carbides, semiconductors, metals, polymers and fullerenes

Nano Structured Coatings Co.

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Pulsed Laser Deposition

Pulsed laser deposition (PLD) is a thin film deposition (specifically a physical vapor deposition, PVD) technique where a high-power pulsed laser beam is focused inside a vacuum chamber to strike a target of the material that is to be deposited. This material is vaporized from the target (in a plasma plume) which deposits it as a thin film on a substrate (such as a silicon wafer facing the target). This process can occur in ultra high vacuum or in the presence of a background gas, such as oxygen which is commonly used when depositing oxides to fully oxygenate the deposited films.

Standard features

Vacuum Pumps	Turbo Molecular and backing pumps
Vacuum Chamber	SST, Cylindrical, 45 degree angle of incident
Operating Pressure Range	10 E(-6) mbar
Vacuum Gauge	Atm – 10 E(-9) mbar
Target	Metal, Semi contactor, Dielectric
Maximum substrate size and temperature	2 inch-400 °c
Micro Controller	For Auto programming of process
Touch Screen Monitor	programming, handling, parameters illustration
Target Manipulator	1-6 Rotatable Target
Crystal Thickness Meter	Program ability
Crystal Thickness Meter head	Quartz crystal retentive
Film Compositional Uniformity	± 1.5 atomic percent for most materials such as YBCO (Uniformity of materials with high vapor pressures such as Lithium may vary significantly depending on deposition parameters)
Film Thickness Uniformity	± 3% over 90% of a 2 inch diameter substrate
Extra Facilities-Options	Rotatable sample holder- film thickness monitor
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