

Thin film Process : Growth of thin film hetero-structures of metallic multi layers by PLD and sputtering techniques.

Equipment: A specially designed multi chamber deposition facility which consists of PLD and dc/rf-magnetron sputtering coupled in series.

PLD & Sputtering combined multi chamber system -2

Photograph :



Basic Principle: Heterostructures are grown by laser ablation of related solid or liquid targets in the presence of r.f. plasma ambient. A KrF excimer laser of 248 nm wavelength (25 ns pulse width and 730 mJ/pulse energy) is used for target ablation. The normal sputtering is done by the bombardment of related target with heavy energetic ions.

Capabilities: This system has PLD and sputtering chambers connected together with in-situ sample transfer facility, load-lock chamber for sample loading and shadow mask mounting. For PLD, a KrF excimer laser of 248 nm wavelength (25 ns pulse width and 730 mJ/pulse energy) is used for target ablation. The laser frequency is tuneable up to 50 Hz. The DC and RF Sputtering chambers are equipped with variable distance UHV compatible sputtering sources for 2 inch dia. targets; and 1000 Watt DC & 600 Watt RF power supplies.

Sample Requirements : For PLD max. 1cm x 1 cm, and for sputtering 1" x 1"