

Tender Notification for Pulsed Laser Deposition (PLD) System

Last Date for submission of tenders: 14:00hrs July 22, 2019

Seeking quotation for a custom designed Pulsed Laser Deposition (PLD) system on C.I.P Bangalore basis. The technical requirements of the system are provided at the end of the document. **Quotations should clearly indicate the terms of delivery, delivery schedule, warranty, payment terms, etc. and should reach the undersigned in hardcopy, duly signed on or before 14:00 hours July 22, 2019.** Note: GST is to be charged at 5%. GST concession certificate will be provided. For any questions or clarifications, please contact Dr. Sushobhan Avasthi savasthi@iisc.ac.in.

Terms and conditions:

1. The vendor must have a good track record of having previously supplied similar equipment in India (please furnish the details). Specific experience of PLD systems is required.
2. The vendor should be able to provide the required optics and certify the system safe for operation with a high-power excimer laser.
3. The vendor should have qualified technical service personnel for the equipment based in India.
4. The lead time for the delivery of the equipment should not be more than 3 months from the date of receipt of our purchase order.
5. The validity period of the quotation should be 90 days.
6. If the goods are found to be defective, they must be replaced or rectified at the cost of the supplier within 15 days from the date of receipt of written communication from us. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.
7. The purchaser reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to award of contract without thereby incurring any liability of the affected bidder or bidders.

Yours Sincerely,

Dr. Sushobhan Avasthi
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Preamble and scope of the project

CeNSE plans to build a PLD system capable of achieving high temperatures upto 1000 C. For this, we have already obtained a customized heating stage, vacuum gauges, laser and pumping system. The scope for this tender is:

1. The vacuum system to hold the heating stage, complete with optical and vacuum fittings.
2. A power supply to operate the high-temperature stage.

Technical Specifications of the Pulsed Laser Deposition (PLD) System

Vacuum system

1. Seeking the vacuum chamber with typical accessories like supporting frame, fittings, gaskets, view-ports, and loading door.
2. This system should allow pulsed laser deposition in at high temperatures (not exceeding 1050°C) in Oxygen, Nitrogen or Argon ambient. The heater assembly is already available. Details of the heater assembly are given in Table 2. A technical drawing of the heater system can be made available on request. Please note the heater assembly is heavy. The vacuum system and housing must be able to support that weight.
3. The system will be used with a high-power pulsed excimer laser – COMPex 248nm UV from Coherent Inc. The laser is already available. The system needs to take a horizontal beam from the laser and focus it onto a target in a safe manner. The optics to accomplish this must be part of the quote. The vendor must certify the system safe for operation with the high-power excimer laser.
4. Base pressure of the system should be $< 1e-6$ mbar.
5. The heater-substrate will be top mounted facing down, with the targets at the bottom facing up. Target to substrate distance should be 3-8 cm.
6. The system should be compatible with class 1000 clean room contamination standards.
7. Suitable vacuum pumps, pressure gauges and the heater-substrate flange are available and do not require to be procured.

Table 1: Description of PLD hardware

Description of the PLD hardware required	Quantity
Vacuum chamber with gaskets, blanks, view ports and CF150 Quick access door (horizontal, for loading the samples and the targets), etc.	1
Automated target carrousel (from bottom) with 6 pockets for 1" targets, along with controller.	1
Gate valve (manual) for main chamber CF 100	1
Frame to support chamber	1
High-quality MFC (0-100 sccm) with valve. VCR fitting only.	1

Beam optics (2 mirrors and 1 lens and 1 laser window) to guide a horizontal beam with a rectangular (1 cm x 2.5 cm) cross-section, on to target of choice.	1
Include shipping and installation charge to Bangalore.	

Power Supply for powering the heater assembly

The heater assembly requires a controller and power supply. The controller must have a closed loop PID control logic. The power supply must provide 60V- 60 Amp output. Cables and connectors to the port, must be included. The system should be fully integrated and plug-play, with easy to use controls and emergency shutoff button.

Table 2: Specifications of the heater that the system must be compatible with

Description of the heater-substrate flange already available
Flange used: CF150
Flange seal to the top of the heater in lower position distance: 151 mm
Range of movement of the heater from the upper to lower position: 50 mm
Power rating of the heating element: 50V, 45A. Power supply with 60V, 60A ratings for is recommended for safety margin.
Heater OD (max): 130 mm
Weight: 25-40 kg