



Indian Institute of Technology Kanpur

Samtel Centre for Display Technologies

Enquiry number: DEITY/SCDT/2014294B

Date: 08/05/2015

Sealed Quotations from prospective vendors are invited by Samtel Center for Display Technologies, IIT Kanpur for the supply and installation of “Vacuum Deposition System with attached load lock” with the following specifications:.

Note: The technical and financial bid should be submitted together in separately sealed envelopes.

Technical specifications:

This system has two parts: one is called Main Vacuum Chamber (MVC) and the other is called Load Lock Chamber (LCC). Deposition of organic material and metal will take place in MVC and samples and masks will be sent into the MVC through LCC. The MVC will have four effusion cells for organic material evaporation and three boats for metal evaporation. Both the chambers will be attached with turbo pumps. The system should be such that samples and the masks could be directly loaded in the LCC to send them in to MVC without breaking the vacuum in the MVC. The MVC should have provisions of radiant heater and substrate holder rotation mechanism. The LCC should also have a radiant heater. The other technical details and specifications can be found in the following sections:

A. Main Vacuum Chamber (MVC)

1. MVC will be used for organic material and metal deposition in vacuum.
2. The MVC size should be around 65x50x50 cm³ made of high grade Stainless steel.
3. The MVC should be equipped with the followings:
 - a. Radiant heater for substrate (Max Temp 250oC)
 - b. Substrate rotation arrangement.
 - c. Substrate thermocouple, four thickness sensors, gauge, source shutters and substrate shutter
 - d. Needle valve, air admittance valve and some dummy ports from the top of chamber.
 - e. MVC should have one hinge door with view ports.
4. The MVC should be equipped with the following facilities from the bottom of the chamber:
 - a) Effusion cells ports– 4 in number. MBE Komponenten GmbH (NTEZ40-10-33-S-L283). The effusion cells and required two power supplies, temperature controllers for effusion cells will be provided by the customer.
 - b) LT electrodes – 3 sets in Number (for three different boat(s)/filament(s)).
 - c) Port for the Turbo pump compatible with Pfeiffer Vacuum (ACP 40, HiPace 700 Package, DN 160 CF-F, TC 400 cable, DCU 400 and Air cooling kit, PM 133 075 AT). Turbo and Dry pump will be provided by customer.
 - d) Thickness sensors – 4 in number, Inficon and SL-A0G38, SQM-160. Both thickness sensor and monitor will be provided by customer.
 - e) Boat/Filament source shutters with pneumatic control (must be magnet coupled to avoid leak).
 - f) Metal plate dividers in-between the boat/filaments to avoid cross deposition.

B. Load Lock Chamber (LCC)

1. LCC is attached with MVC through a pneumatic gate valve and will be used to transfer samples and masks etc without breaking vacuum in the MVC using a transfer rod.
2. The LCC should be a rectangular one and its size should be around or smaller than 20x20x20 cm³ and should be made of good quality steel.

3. A small turbo and a dry pump will be attached to the LCC. Pfeiffer Vacuum (ACP 15 and HiPace 80 Package DN 63 ISO-K). Turbo and Dry pump will be provided by the customer.
4. Both substrates and masks to be sent from load lock to the main chamber to have in situ mask changing facility. There are two masks in total. One for metal evaporation and other for organic evaporation.
5. Sending mask from the load lock while substrate is there in MVC should be possible. (This is necessary to not expose the substrate in air/N₂ while changing masks).
6. Both mask and substrate should be in contact so that evaporation shadow effect on the thin film can be avoided.
(This is necessary to fabricate thin film transistor)
7. The LCC should be equipped with the followings:
 - a. Radiant Heater (Max Temp 250oC) with controller.
 - b. Thermocouple, air admittance valve and some dummy ports.
 - c. Transfer rod for transferring samples and masks through LCC.
 - d. LCC should have one hinge door.
 - e. Load lock to be attached and separated with a valve.
 - f. One port having flange with four BNC feed through.

C. Thickness Sensors: (will be provided by the customer)

- a. Two thickness sensors for the four effusion cells.
- b. Two thickness sensors for three boats.

D. Vacuum pumping:

- a. Automatic gate valve for main turbo in MVC.
- b. Pneumatic roughing and backing valves for MVC.
- c. Small turbo and dry pump for LCC.
- d. Pneumatic valves between the turbo and the corresponding dry pump of LCC.

E. Power supply for three boats/filaments

- a. Please provide two transformers, two variacs, current meters with displays and selector switches etc for boats/filaments for metal evaporation

F. Rack: Items to be placed in the rack:

- a. Slots for effusion power supplies.
- b. One Inficon thickness monitor.
- c. Turbo controller.
- d. Vacuum gauge monitor.
- e. On-off controllers and indicators.
- f. Motor speed controller (substrate rotation).
- g. Radiant heater and boat controllers.
- h. PC Panel (CPU + Monitor)
- i. Switches and indicators on panel for effusion cells and LT electrodes.
- j. Water flow interlock

G. Miscellaneous:

- i. Thickness Sensors' position (Inficon and SL-A0G38):
 - a. One common thickness sensor near substrate holder towards the effusion cells side.
 - b. One common thickness sensor for metal evaporation
 - c. Two near the effusion cells
- ii. Position of Turbo in the MVC:
 - a. Turbo attached to the base of MVC.
 - b. One removable cover plate for turbo
- iii. Substrate and Mask Holder:
 - a. Substrate size : One 10cm x 10cm or four 5cm x 5cm
 - b. Mask Holder and substrate holder must be of appropriate design.
- iv. Shielding Sheets:

Two sets of chamber wall shielding sheets have to be provided (for easy cleaning of the chamber and replacement.)

- v. Supporting Frame and legs:
 - a. The MVC should be on a supporting frame and legs.
 - b. Four supporting legs for the MVC.
 - c. There should not be any conflict with the legs of Vacuum deposition system while inserting the four effusion cells into their respective slots.

Parts supplied by the customer:

1. Effusion cells- 4 in number.
2. Two power supplies and temperature controller for effusion cells. (Need manual switch for switching power supplies between effusion cells)
3. One Inficon thickness monitor (six slots) and four sensors.

Two Pfeiffer turbo pump and one dry pump and one full range compact dual gauge.

Terms and Conditions:

1. Supplier/Vendors should submit technical and financial bid together in separately sealed envelopes.
2. Evaluation will be done on the basis of technical specifications as per our tender notice
3. Supplier who have experienced in fabrication of vacuum deposition system and supplied in the national and international institutions will be preferred.
4. Financial bit will be open only for those, who meet tender specification.
5. Please do mention tender number clearly on envelop.
6. Please send the name and contact details of the person to whom company had supplied a similar systems. Committee may ask for the feedback.
7. Vendors should have to submit the detail's designed as per tender specification.
8. Design to be submitted along with the technical bid.
9. The supplier must have supplied systems to institutions of national and/or international repute.
10. Quotation must indicate FCA or FOB prices.
11. Payment terms & condition is 70% against delivery, 20% after installation and 10% after successful running of equipment for 3 months & approval.
12. Warranty/Guarantee should be clearly mentioned. The Warranty must start from the date of installation at IITK.
13. Installation, demonstration, and training-sessions at IIT Kanpur will have to be provided by the manufacturer or the vendor for the quoted system.
14. Quotation should carry proper certifications like proprietary certificate, authorization certificate from manufacturer, etc.
15. Validity of quotation should be at least for 60 days.
16. Maximum educational discounts should be applied.
17. Institute is exempted for partial custom duty (CD applicable to IIT Kanpur is 5.15%).
18. Institute is exempted from payment of Excise Duty under notification No. 10/97.
19. The delivery period should be specifically stated. Earlier delivery may be preferred.
20. The indenter reserves the right to withhold placement of final order. The right to reject all or any of the quotations and to split up the requirements or relax any or all of the above conditions without assigning any reason is reserved.

Kindly send the quotation in sealed envelope latest by 3.00PM on 29.05.2015 to the following address;

To,
Dr. Monica Katiyar,
Room No.305,

