

Tender Reference : F. No. INST/12(350)/2021-Pur for the Supply and installation of “MBE with in-situ RHEED and UHV preparation chamber and loadlock”

Corrigendum:

1. UHV stainless Steel (made of DIN 1.4406/SS 316LN or DIN 1.404/SS 316L or equivalent) chamber (of about 30 L volume) equipped with appropriate cryo-panel for effusion cells, thermal cracker cells and different ports for specific vacuum pumping. The growth chamber must be compatible to growth of chalcogenide materials like Te, Se, and Sb
2. Pressure management: High sensitivity Bayard-Alpert ion gauge assembly to measure the vacuum pressure (1×10^{-3} to 2×10^{-11} mbar). Pressure gauge to measure atm to 10^{-3} mbar for pre-vacuum line. Power Supply, controllers and suitable cabling to be provided along with gauges. All the vacuum gauges and controllers must be from reputed company like Pfeiffer or Edwards or equivalent internationally reputed brands.
3. Delivery of the goods should be made within a maximum of 10 months from the date of placement of purchase order and the opening of LC.
4. Cooling Shroud (double walled): The deposition chamber must have liquid nitrogen cooling shroud to isolate all effusion cells (reduce the cross-talk between high temperature cells). Cooling shroud must be around the manipulator and must be encircling all the effusion and cracker cells. The cooling shroud must be compatible to both liquid nitrogen and water cooling. In case of integrated water cooling unit supplied for each effusion cells then the cooling shroud around the effusion cells may be water cooled.
5. For all the cracker cells:
Operating temperature range:
 - (a) Heating stage for evaporation must be atleast between 100 C to 800C
 - (b) Heating stage for cracking must be atleast between 300 C to 1000C
6. Appropriate arrangement of vacuum pumps should be provided to attain Base pressure $< 5 \times 10^{-9}$ mbar.
7. Pumping system must include turbo molecular pump (685l/s or better pumping of N₂), dry scroll pump, any further vacuum pumps as deemed necessary to attain the base pressure. All pumps must have their power supplies and required cables for running. Pumps and gauges must be from Pfeiffer/Varian/Edwards or equivalent internationally reputed brands. In case of supplying other pumping speed of turbo molecular pump it must be ensured that Base pressure $< 5 \times 10^{-9}$ mbar vacuum is reached within 8 Hrs.
8. For the high temperature and low temperature effusion cells, either pneumatically operated shutter or electric shutter with soft acting motion controllable through software should be provided
9. In Options: LN₂ dewar of 100 Liter capacity to be quoted.
10. User reference list worldwide should be attached. A minimum of 5 successfully installed MBE system of similar type worldwide in the past 7 years.
11. Frame: Made from Stainless steel or black steel.

12. All crucibles to be used in high temperature effusion cells [section Growth Chamber: I / (iii) / (a), (b), (c) and (d)] should be of Ta (not Al_2O_3).

13. Bidder should submit EMD through RTGS/Bank Guarantee. EMD declaration cannot be accepted.

14. Warranty of equipment is five years.