System: Design and Development of Thermal Evaporator System comprising 4 Thermal Boats and 4 Inch Substrate Heater with 360° Rotation compatible to our existing pumping system (PNG Target Deposition System)

Technical Specifications:
1. SS 304 Process Chamber
   - Appropriate size to accommodate four sources
   - Front door for loading evaporation charge and sample,
   - View port with shutter and port to measure temperature (Pyro-gun).
2. 4 thermal boat/filament set up to deposit 4 materials, one at a time including
   - Mechanical switch to change sources,
   - Manual Shutter assembly for substrate,
   - Suitable threading on the electrode to vary the distance between electrode and sample
   - Cables, Variac and transformer of 300 Amp capacity
   - Water cooling arrangements for cables
   - Boats/Filaments: 12 numbers
3. Sample holder
   - Capacity to hold 4" inch diameter sample
   - Heater for temperature ≤800°C with digital controllers
   - PID controller and Thyristor based power supply for heater
4. Sample rotation with adjustable speed using stepper motor:
   - Continuous rotation through 360°
   - Stepper Motor and speed control panel for variable rotation
   - Rotation: 20 RPM maximum.
   - Adjustable electrode to sample distance: up and down movement (bellow sealed) by min. 50 mm in-situ
5. Suitable Frame to mount all the above along with user provided Turbo pump and gauges
6. All-metal ULV series precision ultrahigh vacuum leak valve to control gas admission, adjustable leaks to 1.3 x 10⁻¹⁰ m bar L/sec, High-temperature service to 450°C, Replaceable sapphire poppet and CF 16 port – 1 No.
7. Gate valve along with backing roughing arrangement (with manual valves). All rotary feed throughs to be bellow sealed or magnetic coupled.
8. PID programmable re-circulating water chiller

Note: A pumping system comprising Turbo molecular pump and dry rotary pump, along with pirani and penning gauges will be provided for the system. TMP Mode No TMH261 (200l/s) with Dry scroll pump (rotary) with pumping speed of 600 lt/sec. The inlet flange for TMP is DN-ISO-K 100 and outlet flange is KF-25
System should be developed in accordance to the coupling and values required to incorporate the same.

Warranty: Standard ONE YEAR from the date of installation or 18 months from the date of delivery whichever is earlier

Total Cost: 12 lakh including Packing, Forwarding, Installation and GST Charges