



**Indian Institute of Technology Kanpur**  
**Department of Materials Science and Engineering**

**Tender Notice**

Reference No. MSE/AKS/2018-19/1

Opening Date:- 11<sup>th</sup> April, 2018

Closing date:-1<sup>st</sup> May, 2018

Sealed Quotations with all technical and financial details are invited under two bid process, i.e., technical and financial bids in separately sealed envelopes, for the supply of following item.

**Item:- 10 kg Vacuum Induction melting Furnace (VIMF) & weightage**

**Functionalities and Specifications**

1. Vacuum Induction Melting Furnace capable of melting fully refined and degassed steel-based melting alloys under vacuum of  $10^{-3}/10^{-4}$  mbar/melting of metal and slag under controlled conditions. It should be capable to ramp the temperature up to **1700°C**.
2. 10 kg VIMF with vacuum melting chamber (double walled water cooled).
3. **Turbo pump based** Vacuum pumping system suitable for 10 kg.
4. **Arrangements to be provided for casting of molten liquid in a water cooled copper mold.** For easy suction, the mold needs to be evacuated up to  $10^{-3}$  mbar.
5. **During casting, the crucible with porous alumina plug will be fitted in the furnace. For melting (without casting) normal crucible will be used.**
6. **Tilting mechanism should be provided for teeming of molten liquid**
7. Arrangements for creating controlled atmosphere (e.g. Argon at specified pressure).
8. Mould table to keep mould with up-down arrangement.
9. Alloy addition system & Bridge breaker system
10. Temperature measurement- immersion type thermocouple (when Induction power is switched off)
11. Control Console for vacuum system, consisting of SCADA/PLC/ or PC based DAQ and display system with vacuum measuring gauges and instruments.
12. High frequency Induction Melting Power Supply 30 kW, quick track with input voltage of volts-Hz
13. 10 kg Induction coil. 1 no. (Manual tilting arrangement) with 3 nos. of High density Alumina OR MgO Crucibles.
14. Water cooled copper mould for metal pouring in chamber
15. Safety devices and interlocks based on pressure & temperature sensing
16. Water chiller for High Vacuum Pumping Sensing and cooling chamber
17. Vacuum pump, Induction coil, pipeline valves, pressure gauge, pyrometer and thermocouple, all these equipments should be **International Standard**.
18. Consumable spares (rubber seal, O-rings, T/C tips-5 nos. set of crucibles for 10 kg coil, ramming mass etc.) for 1 year of operation should be quoted.



## Indian Institute of Technology Kanpur Department of Materials Science and Engineering

### Terms and Conditions

1. Vendors having minimum 10 years experience of supplying vacuum based furnace system to educational/research institutes of repute, capable of handling high temperature liquid metals will only be considered for bidding
2. The necessary drawings/schematic and materials of construction should be detailed in the technical bid
3. The vendor should provide similar installation details in India along with customer feedback
4. Warranty/guarantee should be clearly mentioned. The warranty must start from the date of installation at IITK.
5. Validity of quotation should be at least for 60 days.
6. Maximum educational discounts should be applied.
7. Offer should be made on FOR IIT Kanpur basis.
8. It is a two-bid process. So submit the quotations in two separately sealed envelopes, clearly mentioned as “Technical Bid” and “Financial Bid” along with the tender reference number and your reference number clearly written on both the envelopes.
9. Financial bid will be open only for those, who are compliant as per our technical specifications.
10. The item should be provided with all necessary accessories and safety features over and above the specifications mentioned in this document.
11. The firm should give a declaration that they have not been blacklisted/debarred for dealing by Government of India in the past.
12. The payment term applicable is “80% on delivery of the items and remaining 20% after satisfactory installation/inspection”.
13. Validity of quotation should be at least for 60 days.
14. Delivery period should not be more than 20 weeks
15. GST applicable would be 5%, as per the Notification No. 45/2017 (CGST)

The quotation in sealed envelope should be sent to the following address. The quotations received after the tender closing date will not be considered. In case of any clarifications needed, please contact the undersigned, in office hours.

Prof. A. K. Singh  
Material Science & Engineering  
Indian Institute of Technology Kanpur,  
Kanpur-208016 (U.P.)

Phone:- 0512 2596810