

TENDER (E – PUBLISHING MODE)

FOR

**SUPPLY & INSTALLATION OF BET SURFACE-AREA ANALYZER
FOR ADVANCE MATERIAL RESEARCH CENTRE AT IIT MANDI**



Tender No.: IITMANDI/S&P/PUR-263/2015-16/10532-33

Tender date: 19th March, 2016

Last Date of submission: 8th April, 2016

Indian Institute of Technology Mandi

Transit Campus: Mandav Hotel, 2nd Floor (Near Bus Stand), Mandi – 175001 (H.P)

Tel.: 01905-267027 & 267039

Email: amrcoffice@iitmandi.ac.in & rik@iitmandi.ac.in

Indian Institute of Technology Mandi, Mandi invites tender for supply, erection, installation, commissioning, testing, demonstration and training of **BET SURFACE-AREA ANALYZER**, as per specifications given in the Annexure attached to the Tender form. All offers should be made in English and should be written in both figures and words. Tender forms can be downloaded from the website (<http://iitmandi.ac.in/administration/tenderseoi.html>) of the Institute. Tender document also published on e-tendering (<http://eprocure.gov.in/eprocure/app>). The bidder can also submit bids online.

The bidders are requested to read the tender document carefully and ensure compliance with all specifications/instructions herein. Non-compliance with specifications/instructions in this document may disqualify the bidders from the tender exercise. The Director, IIT Mandi, Kamand reserves the right to select the item (in single or multiple units) or to reject any quotation wholly or partly without assigning any reason. Incomplete tenders, amendments and additions to tender after opening or late tenders are liable to be ignored and rejected.

Terms and Conditions:

1. The technical and financial bids should be quoted separately and put in different sealed envelopes marked "**Technical bid**" or "**Financial bid**" as applicable. These separate bids envelopes are to be put in an outer envelope which should also be sealed.
2. The Vendors who have earlier supplied the equipment to any of the IITs, IISc, IISERs and other Scientific Institute of National Repute may only tender. The details of such institutions and the cost with name of equipment may also be supplied with the bids.
3. The technical and financial bids should be submitted in original. The financial bid should include the cost of main equipment/item and its accessories. If there is any separate cost for installation etc. that should be quoted separately.
4. Each individual sealed envelope as well as the outer envelope should be marked with the following reference on the top left hand corner: "**IITMANDI/S&P/PUR-263/2015-16/10532-33/Item Name.____dated 19th March, 2016**"
5. The printed literature and catalogue/brochure giving full technical details should be included with the technical bid to verify the specifications quoted in the tender. The bidders should submit copies of suitable documents in support of their reputation, credentials and past performance.
6. The rates should be quoted in figures (typed or printed) and cutting should be avoided. The final amount should be in figures as well as in words. If there are cuttings, they should be duly initialed, failing which the bids are liable to be rejected.
7. Any bids received after **2:00 P.M. on 08th April, 2016** shall not be considered
8. The Technical Bids will be opened on **08th April, 2016 at 03:00 P.M.** The date & time for opening of Financial Bids will be informed later on to the technically qualified bidders.
9. While sending rates, the firm shall give an undertaking to the effect that "*the terms/conditions mentioned in the enquiry letter/Tender Notice against which the rates are being given are acceptable to the firm.*" In case the firms do not give this undertaking, their rates will not be considered.

10. If the supplier/firm is original equipment manufacturer (OEM)/authorized dealer/sole distributor of any item, the certificate to this effect should be attached.
11. The quantity shown against the item is approximate and may vary as per demand of the Institute at the time of placing order.
12. All tender documents should have to be sent through courier, speed post or registered post only. All tender documents received after the specified date and time shall not be considered.

The postal address for submitting the tenders is:

**“Assistant Registrar, Stores and Purchase”
Indian Institute of Technology Mandi (IIT Mandi),
Administrative Block in Bamboo Hut, Near Director Office,
Kamand Distt. Mandi – 175005 (H.P), India”**

13. In the event of any dispute or difference(s) between the vendee Institute (IIT Mandi) and the vendor(s) arising out of non-supply of material or supplies not found according to specifications or any other cause whatsoever relating to the supply or purchase order before or after the supply has been executed, shall be referred to “The Director, IIT Mandi”, Kamand who may decide the matter himself or may appoint arbitrator(s) under the arbitration and conciliation Act,1996. The decision of the arbitrator shall be final and binding on both the parties.
14. The place of arbitration and the language to be used in arbitral proceedings shall be decided by the arbitrator.
15. All disputes shall be subject to Mandi Jurisdiction only.
16. All tenders in which any of the prescribed conditions is not fulfilled or any condition is putforth by the tenderer shall be summarily rejected.
17. IIT Mandi reserves the right to cancel the tender at any point of time without assigning any reason.
18. The bidders or their authorized representatives may also be present during the opening of the Technical Bid, if they desire so, at their own expenses.

Note: Price bids of only those bidders will be opened whose technical bids are found suitable by the committee appointed for the purpose. Date and time of opening of price bids will be decided after technical bids have been evaluated by the committee. Information in this regard will be intimated to the technically qualified bidders. In exceptional situation, an authorized committee may negotiate price with the qualified bidder quoting the lowest price before awarding the contract.

19. **Clarifications:**

In case the bidders requires any clarification regarding the tender documents, they are requested to contact our office (e-mail: amrcoffice@iitmandi.ac.in & arosp@iitmandi.ac.in on or **before 31/03/2016**.

20. Tender Cost:

A Demand draft of **Rs. 1,000/- (Rupees One Thousand only)** towards non-refundable **tender fee, drawn in favour of "The Registrar, IIT Mandi"** payable at Mandi should accompany the Technical bid documents. If the same firm is submitting bids for more than one annexure, they should submit the same in separate envelopes along with respective tender cost for each annexure. In the absence of tender cost, the tender will not be accepted.

21. Earnest Money Deposit (EMD):

The bidder can quote for all the annexure and they should submit separate EMD for each annexure. For **"annexure A"** a refundable amount of **Rs 70,000/-** as earnest money deposit (EMD) and For **"annexure B"** a refundable amount of **Rs 60,000/-** as earnest money deposit. The EMD should be deposited in the shape of DD drawn in favour of "The Registrar, IIT Mandi" payable at Mandi should accompany the bid documents. The EMD should be kept in a separate sealed envelope, should be marked clearly and put in the outer envelope that contains the technical and financial bid envelopes. The bidders should enclose a pre-receipted bill for the EMD to enable us to return the EMD of unsuccessful bidders. Failure to deposit **Earnest Money** will lead to rejection of tender. The bidders should submit separate EMD. In the event of the awardee bidder backing out, EMD of that bidder will be forfeited.

22. **Vendors should quote for Annexure-1 and Annexure-2 separately.** They will be evaluated individually

23. Pre – Qualification Criteria:

- a. Bidders should be the manufacturer / authorized dealer. Letter of Authorization from original equipment manufacturer (OEM) on the same and specific to the tender should be enclosed.
- b. The Vendors who have earlier supplied the equipment to any of the IITs, IISc, IISERs and other Scientific Institute of National Repute may only tender. The details of such institutions and the cost with name of equipment may also be supplied with the bids.
- c. An undertaking from the OEM is required stating that they would facilitate the bidder on a regular basis with technology/product updates and extend support for the warranty as well.
- d. OEM should be internationally reputed Branded Company.
- e. Non-compliance of tender terms, non-submission of required documents, lack of clarity of the specifications, contradiction between bidder specification and supporting documents etc. may lead to rejection of the bid.
- f. **Furnishing of wrong/ambiguous information in the compliance statement may lead to rejection of bid and further black listing of the bidder, if prima-facie it appears that the information in the compliance statement was given with a malafide/fraudulent intent.**

24. **Prices:**

- a. The Prices quoted should be inclusive of all taxes or duties, packing, forwarding, freight, insurance, delivery and commissioning etc. at destination site (IIT Mandi, Mandi/Kamand). IIT Mandi is registered with DSIR, Govt. of India and is exempted from Custom / Excise Duty. Exemption Certificate to this effect will be issued by IIT Mandi. **Hence, Customs/Excise Duty exempted price should be quoted.** The rates shall be firm and final. Nothing extra shall be paid on any account. **In the price bid/financial bid, the vendor should clearly mention the final price breakup i.e. ex-work price/FCA price, FOB price, CIP/CIF price & FOR IIT Mandi, Kamand Campus price, as applicable in their bid.**
- b. In case of imported equipment(s)/item(s), the agency commission, if any, payable in Indian rupees should be mentioned separately. For imported equipment, the Letter of Credit will be opened for the amount excluding agency commission in Indian Rupees. The firm should clearly mention the address of foreign bank in the financial bid.

25. **Validity:**

The bid should be valid for acceptance up to a period of 180 Days. The Bidders should be ready to extend the validity, if required without any additional financial implications.

26. **Delivery:**

The Equipment should be delivered and installed within the period as specified in the purchase order and be ready for use within 24 weeks of the issue of purchase order unless otherwise prescribed. If the bidder fails to deliver and place any or all the Equipments or perform the service by the specified date, penalty at the rate of 1% per week of the total order value subject to the maximum of 10% of total order value will be deducted.

27. **Training:**

Bidders need to provide adequate training to the nominated persons of IIT Mandi at their cost. IIT Mandi will not bear any training expenditure.

28. **Warranty Declaration:**

Bidders must give the comprehensive on-site warranty as required from the date of successful installation of Equipment against any manufacturing defects and also give the warranty declaration that *“everything to be supplied by us hereunder shall be free from all defects and faults in material, workmanship and shall be of the highest quality and material of the type ordered, shall be in full conformity with the specification and shall be complete enough to carry out the experiments, as specified in the tender document.*

Any deviation in the material, and the specifications from the accepted terms may liable to be rejected and the bidders need to supply all the goods in the specified form to the satisfaction / specifications specified in the order / contract and demonstrate at their own cost.

29. **Performance Bank Guarantee:** A performance bank guarantee from a scheduled bank in India for an amount equal to 10% of the price for duration of two months beyond the expiry of warranty period will be taken from the supplier or Indian agent.

30. **Terms of Payment:** Payment will generally be made only after delivery and satisfactory installation, testing, commissioning etc. **This must be specified in the tender/quotation.**
- In case of imported supplies, payment (excluding Indian agency commission, if any) will be made through irrecoverable Letter of Credit in two installments. 80 % of the money will be released on submission of shipping of documents. Remaining 20 % will be released after successful installation of the instrument and submission of a performance bank guarantee for 10% of the order value from a nationalized bank, valid for 2 months beyond the expiry of the warranty.
 - In case of required item quoted in INR, 100% payment will be made through through wire transfer after receipt of material in good condition and successful installation of the instrument and on submission of a performance bank guarantee for 10% of the order value from a nationalized bank, valid for 2 months beyond the expiry of the warranty.
31. **Tender expenses and documents:** All costs incurred by the bidder in the preparation of the tender shall be at the entire expense of the bidder.
32. **Tender Evaluation Criteria:** The technical bids will be opened and evaluated by a duly constituted committee. After evaluation of the technical bid, the financial bid for only those offers which have qualified in the evaluation of technical bid will be opened.
33. **Return of EMD:**
- The earnest money of unsuccessful bidders will be returned to them without any interest within 15 working days after awarding the contract.
 - The earnest money of the successful bidder will be returned to them without any interest within 15 Days after supply of material.
34. **Manual and documentation:** All the manuals necessary for operating and servicing the equipment (including details of electronic circuits) will have to be provided along with the instrument.
35. The IIT Mandi reserves the right to cancel the tender at any stage (point of time) without assigning any reason.
36. Bidders should go through the tender terms, conditions and specifications carefully and fill in the attached compliance statement accurately and unambiguously. They should ensure that all the required documents are furnished along with the bid.

Sd/-
**Assistant Registrar
Stores & Purchase**

BID PARTICULARS

1. Name of the Supplier :

2. Address of the Supplier :

3. Availability of demonstration of equipment : Yes / No

4. Tender cost enclosed: : Yes/No if yes

D.D. No. _____ Bank _____ Amount _____

5. EMD enclosed : Yes / No if (Yes)

D.D. No. _____ Bank _____

6. Name and address of the Officer/contact person to whom all references shall be made regarding this tender enquiry.

Name :

Address :

Telephone No. :

Fax No. :

Mobile No :

e-Mail :

Web

Ref:-ENQUIRYNO:- **IITMANDI/S&P/PUR-263/2015-16/BET Surface-Area Analyzer**

Specifications:-

1. **Number of sample analysis ports:** 3 ports or more
2. **Measurable minimum specific surface area:** 0.0005 m²/g (with krypton) to 0.01m²/g (standard) or better.
3. **Gas Compatibility:** Nitrogen, argon, krypton, carbon dioxide, hydrogen, oxygen, volatile organics
4. **Measurement Mode:** Physisorption, upgradable to chemisorption
5. **Vacuum System:**Lowest measured partial pressure (P/P₀): 1 x 10⁻⁷ or better **Ultimate Vacuum:** 1 x 10⁻⁶ Pa or better with turbo molecular pump
6. **Surface area analysis options:** Adsorption/desorption isotherms, BET and Langmuir Surface Area, BJH method, t-plot, MP method, Dubnin-Ashtakov method, Monte-Carlo methods, Pore volume distribution of pore size Surface energy distribution of pore sizeSurface area distribution of pore size.
7. **Adsorptive Gas Inputs:** 5 or more
8. **Minimum pore size analysis:** 3.5 Å or better
9. **Dewar lifetime per cycle:** 60 hours or more
10. **Sample preparation kit:**Temperature Range: ambient or less to 350 degree C or better, Vacuum degasing, Simultaneous sample preparation up to 3 samples
11. Compatible branded PC and printer ,Online UPS with One hour back up.
12. **Gas cylinders with regulators:** Argon, Nitrogen, and Carbon Dioxide cylinders with regulators, fittingsfor physisorption analysis
13. Liquid Nitrogen transfer vessel
14. Sample cells for holding powders, pellets
15. Power requirement: 230 ± 10 V AC, Hz, Online UPS
16. Performance evaluation standards
17. Training and installation: Installation, commissioning and on-site training for 3 days.

18. List of institutes to whom similar system is supplied along with copies of purchase order.
19. The System should be supplied with 1000 torr, 10 torr and 0.1 torr pressure sensors.
20. The system should be equipped with 1 micro pore port and two mesopore port.

Ref:-ENQUIRYNO:- IITMANDI/S&P/PUR-263/2015-16/chemisorption analyzer

Specification for chemisorption analyzer:

1. Fully automated system for temperature programmed analysis like temperature programmed desorption (TPD), temperature programmed reduction (TPR), temperature programmed oxidation (TPO), single point BET and pulse chemisorption measurement
2. The equipment should have facility for precise and accurate gas flow control using Mass Flow controllers for preparation, carrier and analysis gases. The MFC's should be built or external in and controlled through the software. The number of MFC should be 4 or more.
3. The system should have 6 or more gas inlets ports. Provision should be available to expand the number of gas lines
4. High sensitivity TCD detector with Tungsten-Rhenium or Gold Sheathed filament. The TCD detector should have temperature control to ensure detector stability.
5. The furnace temperature range should be ambient to 1100 deg C or better. It should be controlled through software.
6. Furnace Cooling Rate: 1000°C to 100°C : <60 minutes or better.
7. The system should be provided with suitably designed quartz tube to accommodate various catalyst volumes and sizes for use up to 1100 deg C.
8. Suitable calibration standard samples for temperature programmed desorption (TPD), temperature programmed reduction (TPR), temperature programmed oxidation (TPO), single point BET and pulse chemisorption measurement should be included in the offer.
9. The system should be designed to use gases like N₂, CO₂, H₂, CO, NH₃ etc.
10. Demonstration of the system using the standards should be done during the installation and commissioning of the unit.
11. The offered system should have adequate in-built safety features like,
 - a. The temperature exceeds the pre-setting value, start alarming, turned off all the valves and stops heating.
 - b. Incorrect temperature which exceeds maximum temperature cannot be input by software programs.

- c. Monitoring the gas flow and switching of the TCD if the gas flow is stopped.
- d. Facility to turn off the gas valves and gas supply in case of power failure.

12. PC interface, Data analysis and software features: The system should be controlled through windows based software. Calibration routines to be controlled by the software. Features for creation of methods for measuring the adsorption/desorption isotherms. The software should have all the data handling features like user defined report generation, data/figures export to spreadsheets, offline data processing etc.

13. Gas Cylinders and Regulators: Gas cylinders must be 99.999% Ultra High Purity with two stage gas regulators. Nitrogen, Helium, Hydrogen and CO₂ should be supplied.

14. System should be supplied with latest computer with printer.

15. The system should have provision to upgrade with Mass detector, Vapour Chemisorption attachment and cryo attachment to work from -100 to 1000 deg C.

16. Installation and commissioning to be done at our site by the vendor. Proper training and complete demonstration of the equipment features should be provided during the time of installation.

**COMPLIANCE STATEMENT FOR THE TENDER SPECIFICATIONS
INDIAN INSTITUTE OF TECHNOLOGY MANDI
HIMACHAL PRADESH-175001**

Ref:-ENQUIRYNO:-IITMANDI/S&P/PUR- 263/2015-16/Annexure 1 & Annexure 2

S. NO	Check list of documents/ Undertakings ?	YES/NO	Remarks (Give explanation if answer is No)
1	Is Tender fees attached?		
2	Is EMD attached? (if applicable)		
3	Is the bidder original equipment manufacturer (OEM)/authorised dealer?		
4	If authorised dealer, recent dated certificate to this effect from OEM, attached or not?		
5	Undertaking from OEM regarding technical support & extended warranty period		
6	Validity of 180 days or not?		
7	Undertaking from bidder regarding acceptance of tender terms & conditions		
8	Whether list of reputed users (along with telephone numbers of contact persons) for the past three years specific to the instrument attached.		
9	Whether special educational discount for Indian Institute of Technology (IIT) Mandi (H.P) given.		
10	Whether required training of operator and research students without any charges offered.		
11	Does the instrument complies with all the required specifications as per annexure 1 & annexure 2. Attach a separate sheet showing compliance with the specifications and explanations thereto if the equipments varies from the requested specifications.		
12	Whether free Installation, Commissioning and Application Training offered.		
13	Whether three years comprehensive onsite extended warranty offered.		
14	Whether Annual maintenance after expiry of comprehensive onsite warranty quoted separately as optional.		