



# भारतीय प्रौद्योगिकी संस्थान (भारतीय खनि विद्यापीठ), धनबाद

धनबाद, झारखण्ड, भारत, पिन-826004

(मानव संसाधन विकास मंत्रालय, भारत सरकार के अधीन राष्ट्रीय महत्व का एक संस्थान)

INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES), DHANBAD

DHANBAD, JHARKHAND, INDIA, PIN-826004

(An Institute of National Importance under Ministry of H.R.D., Govt. of India)

STORES & PURCHASE SECTION

Phone:(0326) 2235678 || Email : purchase@iitism.ac.in || Website : www.iitism.ac.in

No. Chemical/INS/241/18-19

Date: 8 October 2018

## NOTICE INVITING TENDER

**Subject:** NIT No. CHEMICAL/INS/241/18-19 for Supply & Installation of  
**Computer Controlled Absorption Apparatus -01 No.**

Sirs,

Indian Institute of Technology (Indian School of Mines), Dhanbad invites tenders/ quotations for  
Supply and Installation **Computer Controlled Absorption Apparatus -01 No.**  
in our Chemical Engineering Department. *Particulars of tender cost, earnest money deposit and date and time of submission and opening of tenders are as under:*

S No	Items	Particulars
1.	Tender cost*	*Rs. 2,360.00 (Rupees Twenty Three Hundred & Sixty only)
2.	Earnest money deposit	Rs. 34,000.00 (Rupees Thirty Four Thousand only)
4.	Date and time for submission of bids	<b>09.11.2018 at 1:00 P.M.</b>
5.	Date and time of opening of bids	<b>09.11.2018 at 4.00 P.M.</b>

**\* For submission of tender cost please see the point no. 03 (b) of General T&C at Annexure-II**

Tender document containing following document is available on websites of (<https://eprocure.gov.in> & [www.iitism.ac.in](http://www.iitism.ac.in)), which may kindly be referred.

1. Technical specifications as per Annexure-I
2. General terms & condition as per Annexure-II
3. Compliance Statement as per Annexure –III
4. Financial Bid as per Annexure- IV

Encl: As above

Assistant Registrar



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## Annexure-I

Sl. No.	Item	Quantity
1.	Computer Controlled Absorption Apparatus	01 No.

### Technical Specification of Computer Controlled Absorption Apparatus

- **Column Specification**
  - i. Column Internal Diameter : 100 mm
  - ii. Column Height: 2.0 m or higher
  - iii. MOC: Borosilicate glass
  - iv. Packing materials: Structured tower packings (e.g., MELLAPACK, FLEXIPAC etc.) of suitable size, made of SS 304/SS 316
  - v. Packed bed should have liquid distributor at top, liquid re-distributor, gas diffuser at the bottom, demister pad, two support plates, two bed height limiters, sample ports for feed and product gases and temperature sensors at different column heights. One liquid collector port and temperature sensor port near liquid re-distributor.
  - vi. Maximum Operating Temperature: 120 deg C
- **Feed Tank**
  - i. Capacity: 50 -60 L (Closed tank)
  - ii. MOC: SS304
- **Feed Pump**
  - i. Pump Type: Peristaltic pump suitable for amine, caustic
  - ii. Range: 0-50 LPH
  - iii. MOC: SS304 for wetted part
  - iv. Power Supply: 230 V AC
  - v. Input: 4-20 mA
- **Mass Flow Controllers for Gas flow rate control**
  - i. No Required: 02
  - ii. Operating range: 0-80 LPM or higher
  - iii. Accuracy:  $\pm 0.1$  LPM or better
  - iv. Output: 4-20 mA
  - v. Power Supply: 24 Vdc
  - vi. MOC: SS304 or SS316
- **Temperature sensors:** Two sensors to measure temperatures of gas and liquid feed inlets and sensors should be suitably located at four different locations for bed temperature measurements.
  - i. No Required: **06 or more**
  - ii. Type: RTD Pt 100
  - iii. Operating range: 0-150 deg C
  - iv. Accuracy:  $\pm 0.1$  deg C or better
- **Pressure Sensor**
  - i. No Required: 02
  - ii. Type: Strain gauge or equivalent, Absolute type
  - iii. Operating range: 0 – 3 bar
  - iv. Accuracy:  $\pm 0.01$  bar or better
  - v. Output: 4-20 mA, 2 wire
  - vi. Power Supply: 24 Vdc
  - vii. Housing: SS304/SS316
- **CO<sub>2</sub> Meter**



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- i. Type: Digital
  - ii. Range: 0-100 %
  - iii. Accuracy:  $\pm 0.1\%$  or better
- **CO<sub>2</sub> Gas Cylinders and Regulators:**
    - i. Size: 47 Litre
    - ii. Gas Purity: >99.9%
    - iii. CO<sub>2</sub> Regulators: Dual Stage, Max Inlet Pressure: 3500psig, Outlet Pressure: 0-50 psig
  - **N<sub>2</sub> Gas Cylinders and Regulators:**
    - i. Size: 47 Litre each
    - ii. Gas Purity: >99.9%
    - iii. N<sub>2</sub> Regulators: Dual Stage, Max Inlet Pressure: 4000psig, Outlet Pressure: 0-200 psig
  - **Interface Cards**
    - i. 8 ADC, Input : 0-10 VDC
    - ii. 8 DAC Output : 0-10 VDC
    - iii. 8 DI Input : 0 -5 VDC
    - iv. 8 DO Output : 0-5 VDC
    - v. Communication : RS232
    - vi. Power Supply : 230VAC, 50Hz, 5Amp
  - **Temperature Scanner/Indicator**
    - i. No Required: 01
    - ii. No of Channels: 8
    - iii. Input: 0-10V/4-20mA
    - iv. Power Supply: 230 VAc
    - v. Communication: Modbus Protocol
  - **SCADA Software**
    - i. A windows compatible SCADA software package for both manual and automatic control of the process.
    - ii. The automatic mode should incorporate a fully functioning P, PI & PID controllers' mode with manipulation of the control variables via 2-way communication for control & data.
    - iii. Bump-less transfer should be available when switching between open loop and closed loop control.
    - iv. Process data for all kind of sensors including SP, OP & PV should be displayed on the live mimic diagram and graphical trend plot of output should also be available
    - v. Data acquisition, and data retrieval facilities for further analysis using spreadsheet software should be included
  - **Panel with necessary components and power supply**
  - **All materials used in the instrument/equipment should be of highest quality:** Industrial grade SS (e.g., SS304) should be used for wetted parts such for tanks, pipes, tubes, fittings etc. Structural component MOC should be of MS or better.
  - Sensors, transmitters/ converters, controllers, and data acquisition systems etc. should be of MNC grade and industrial-standard
  - Unit should be suitable to use with flammable solvents and continuous operation
  - **All the necessary items required for the operation of equipment are to be quoted and supplied**
    - **Computer:**  
Processor: Core i5, Hard Disk: 500 GB, RAM: 4GB, Large-Screen Monitor- 24 -26 inch LED, Keyboard, Mouse, USB ports, Compatible Windows OS (latest ver.), etc.
  - **Warranty: Minimum 3 years**





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## Annexure-II

### GENERAL TERMS & CONDITIONS

#### NIT No. CHEMICAL/INS/241/18-19

Sealed tenders under **Two-bid system** are invited from manufacturers/ their authorized dealers/ agents for supply and installation in IIT (ISM) Dhanbad of items specified in *Annexure-I*.

1. Offer should be submitted under **TWO-BID** system in two separate sealed covers i.e. “**Techno-commercial bid**” and “**Price bid**”.
2. *a) In a tender, either the Indian agent on behalf of the principle/ OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.*  
*b) If an agent submit bid on behalf of the principle/ OEM, the same agent shall not submit a bid on behalf of another principle/ OEM in the same tender for the same item/product.*
3. **Techno-commercial Bid:** should contain the following documents/information:
  - a. **Tender Cost:** Tender cost must be submitted with technical bid by way of an A/C payee demand draft.
  - b. **Bid Security/Earnest Money Deposit (EMD) and Tender Fees:** EMD Should be submitted in form of A/C payee demand draft only drawn in favor of Registrar, IIT(ISM) and payable at SBI, IIT (ISM) campus branch or any other Bank/ Branch located in Dhanbad and Tender Fees must be paid through SB collect only through the link <https://www.onlinesbi.com/prelogin/collecthome.htm?corpID-272342>, tender cost payments through other modes viz. Cash/DD/NEFT/RTGS etc. shall not be accepted. Online payment receipt should be enclosed with Tender Document.
  - c. Tenders without payment of tender cost and EMD will not be considered, unless the tenderer is exempt from such payment under Central Govt. Rules/ Regulations and General Financial Rules (GFR) as amended from time to time and claims such exemption along with relevant and valid supporting documents.
  - d. All relevant technical specifications/details of offered items, drawings, printed technical leaflets, and commercial details which are necessary to ensure that offer is complete in all respects should be attached with the technical bid documents.
  - e. *A ‘Compliance Statement’ along with a certificate and duly signed that the tenderer satisfies the technical requirements given in Annexure-I. The said statement should be in a tabular form with the columns: sl. no., (2) technical requirement as per NIT; (3) what is offered by the tenderer; and (4) status of compliance: Complied/Not complied).*
  - f. IIT(ISM) does not bind itself to offer any explanation to those bidders whose Technical Bids have not been found acceptable by the Evaluation Committee of the Institute.
4. **Further the following documents have to be furnished by the tenderers:**
  - a) Self attested copies of credentials in support of capability to undertake the supply/work.
  - b) Technical literature/catalogue with the detail specification of the material
  - c) Satisfactory performance certificate from their customers for same/similar supply/service must be enclosed alongwith the technical bid.
  - d) Income tax PAN, Sales tax regn. Nos., GST, & Bank A/c no., name of bank & branch.
5. **Price should be quoted on FOR, IIT(ISM) Dhanbad basis.** The packing, forwarding, freight and transit insurance charges, if any must be included in the price and should not be claimed separately. Duties & taxes, if applicable, are to be shown separately clarifying whether those are extra or included in the price. Price bids of only technically qualified tenderers shall be opened in their presence on a pre-notified date and time. In case of foreign supply, It will be sole responsibility of the bidder to get custom clearance and forwarding/transportation of items till IIT(ISM), Dhanbad.



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6. **Educational discount, if any, should be clearly mentioned.**
7. IIT(ISM) is entitled for Custom Duty Exemption under Govt of India notifications and is registered with DSIR, Govt of India for this purpose. This may be taken into consideration while quoting minimum possible rate. IIT(ISM) will provide only custom duty exemption certificate for availing concessional custom duty. IIT(ISM) will not pay any extra custom duty other than duty exemption certificate.
8. **Since IIT(ISM) Dhanbad is an Indian Institute of Technology and subject item will be used for research, hence benefit of reduced rate of GST should be considered if applicable.**
9. IIT (ISM) does not issue form 'C' or 'D' for concessional Sales tax/VAT. Hence, full rate of sales tax as applicable to educational institutions against the form of certificate should be indicated.
10. **Warranty:** Minimum **03 year/s** from the date of installation and commissioning at the site.
11. **Validity:** Offer must be valid for a period of **240 days** from the date of opening of tender
12. **Performance Security/Performance Bank Guarantee:** Performance Security has to be submitted from the successful bidder. Performance Security will be 10% of the ordered value. Performance Security may be furnished in the form of Bank Guarantee/Demand Draft from any Nationalized Bank and Performance security should remain valid for a period of two months beyond the date of completion of all contractual obligations of the successful bidder(s). No interest will be payable by IIT (ISM) Dhanbad on the Performance Security deposited. In case the contractor fails to provide satisfactory service, the Performance Security submitted by the bidder(s) is liable to be forfeited. An undertaking to this is to be submitted.
13. **Delivery Period and Liquidated Damage:** The ordered materials/work complete in all respects are required to be delivered and installed within the period stipulated in the purchase order failing which liquidated damages of 1% per week or part thereof for the delayed period subject to maximum of 5% of the total value of the order shall be deducted from the invoice of the supplier.
14. **Inspection:** Inspection shall be carried out at IIT (ISM), Dhanbad after arrival of the materials and decision of the Institute in this regard shall be final.
15. **Rejection and Replacement:** Rejection, if any, shall be notified to the supplier within 30 days of receipt and inspection of the material/workmanship. Rejected materials/work is to be removed by the supplier at his own risk and cost from IIT (ISM). Campus within 14 days of intimation of rejection. Defective Supplies are required to be replaced within 15 days of the removal of the rejected materials/work.
16. **Risk Purchase:** IIT (ISM) shall be at liberty to realize from the supplier the differential amount, if any, which it shall have to incur on purchase of the material/work at higher price(s) from elsewhere in the market, if the supplier, due to their fault, fails to supply the ordered quality and quantity of the material/work within the stipulated time.
17. Conditional offer will not be accepted.
18. **Payment:** will be made within 30-45 days after satisfactory supply, inspection, installation/commissioning & acceptance and on submission of pre-receipted tax invoice, delivery challan, warranty certificate and installation report in triplicate and Performance Bank Guarantee. The invoice should be duly certified by the Head of Dept to which supply is made or any other IIT (ISM) official authorized for this purpose.
19. Your full address for correspondence and name address of the beneficiary's banker should be clearly indicated in the offer. **Institute does not make any advance payment.**
20. **Country of origin and port of shipment should be stated in your offer clearly.**
21. Name and address of Indian Agent, percentage of agency commission, if any and role of the Agent with respect to the subject supplies and a statement thereon that "Agency Commission is included in the
22. FOR price of the offer" should be clearly indicated in your offer.
23. Earliest/ expected delivery period should be clearly indicated.



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24. Packing should be suitable for 'Air freight'.
25. Please note that no part shipment/transshipment/third party shipment is acceptable to us.
26. **Last date** for receipt of tenders and date & time for opening of the same is given in page- 01. The tenders will be opened in the presence of representatives of tenderers present. ***In the event last date is a holiday/declared as a holiday, next working date will be the last date for submission/ opening of tender.***
27. Tender should be submitted in a sealed cover/envelope and must be superscribed as under:
  - i) "Tender No. **CHEMICAL/INS/241/18-19 Date : 8 October 2018 (Supply & Installation of Computer Controlled Absorption Apparatus -01 No. (Due Date 09.11.2018 at 4.00 P.M.).**
  - ii) All tender shall be received upto to the time and date as stated in the tender notice, after which no tender shall be accepted in any circumstances.
  - iii) All tender must be sent by Registered Post/Speed Post/Courier along with Courier receipt, during IIT (ISM) working days only (i.e. Monday to Friday). Please note that no hand delivery of tender will be accepted at any circumstances.
28. The Institute at its discretion may change the quantity/quality/parameters/upgrade the criteria/drop any item(s) or part thereof at any time before placing the order. In case of any dispute, the decision of IIT(ISM) shall be final and binding on the bidders/tenderers.
29. The Institute reserves the right to accept or reject any or all the bids in part or in full without assigning any reason and does not bind himself to accept the lowest bid.
30. All the bidders, those are interested to participate in this bid, must have to submit the technical specification of their bid in MS-Word Format in a CD with the technical bid. The CD must be marked with the NIT No. and submission deadline.

**ABOVE TERMS AND CONDITIONS OF THE NIT ARE ACCEPTED**

1	Name and address of the tenderer	
2	Telecom nos. of the tenderer i.e. phone fax, & email id.	
3	Signature, name & designation of the person signing on behalf of the tenderer & his/her office seal	
4.	Name & designation of the contact person & his phone/mobile no.	





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## Annexure-III

### Compliance Statement

Sl. No	Technical requirement as per NIT	What is offered by the tenderer	Status of Compliance Complied/Not Complied



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**Annexure - IV**

## **Format for Financial Bid**

NIT No.: Chemical/INS/241/18-19

Date: 8 October 2018

Bidders Ref: No.

Date:

GSTIN:

**Subject: Supply & Installation of Computer Controlled Absorption Apparatus -01 No.**

Sl. No.	Full Description of Items	Qty.	Rate	Amount
			Packing & Forwarding (if any)	
			<b>Total</b>	
			GST (if any)	
			Freight (if any)	
			Installation (if any)	
	Amount should be in figure as well as word		<b>Grand Total</b>	

### **Note:**

- 1) Price basis should be FOR IIT(ISM) Dhanbad.
- 2) All the details must be provided as per prescribed format only.
- 3) Prices quoted by the bidders should include all local taxes, VAT, service tax, GST, HSN Code, SAC Code, livies, transportation cost and insurance costs etc. if any