



# 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/330/18-19

Date: 15 January 2019

## NOTICE INVITING TENDER

### Subject: Supply & Installation of Fixed bed catalysis.

Indian Institute of Technology (Indian School of Mines), Dhanbad invites quotations for the following to be supplied and delivered in Chemical Engineering Department.

S No	Full Description of items/ store	Qty	Delivery
1	<b>Supply &amp; Installation of Fixed bed catalysis.</b> (Detailed Specification is given in Annexure – I)	01 No.	At the Earliest /Ex-Stock

### Tender Schedule

Particulars	Date & Time
<b>Tender Fees*</b>	<b>Rs. 590.00 (Five Hundred &amp; Ninety Only)</b>
Bid Security or Earnest Money Deposit	<b>Rs. 18,000.00 (Eighteen Thousand Only)</b>
Last date and time for submission of tenders	<b>08.02.2019 at 1:00 P.M.</b>
Date and time of opening of tenders	<b>08.02.2019 at 4.00 P.M.</b>

\* For submission of tender cost please see the point no. 06 Terms & Conditions.

1. You are requested to quote your lowest rates for the supply of above items in the attached format for Financial Bid (Annexure – II - A or B)
2. You may send your representative in the office of the undersigned at the scheduled date and time of opening of tender.
3. Tender should be submitted in sealed cover only superscribed with Enquiry No. and due date at the following address only:

*The Assistant/Deputy Registrar (P&S)*  
*Indian Institute of Technology (Indian School of Mines),*  
*Dhanbad – 826 004 Jharkhand*



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## Terms & Conditions

- 1) The rates should be quoted for each item separately.
- 2) Conditional offer will not be accepted.
- 3) IIT (ISM) does not issue any Form 'C' or 'D' towards sales tax concessional rate. Hence, full rate of sales tax/VAT, GST applicable should be quoted.
- 4) 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.
- 5) **Educational discount**, if any, should be clearly mentioned.
- 6) Earnest Money Deposit (EMD): Should be submitted in form of A/C payee demand draft 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.
- 7) You are requested to submit your quotation strictly as per the specifications mentioned in the NIT.
- 8) Your tender must be valid for **minimum 90 days** from the date of opening of tender.
- 9) Please mention warranty/ guarantee in your offer clearly. Material/ equipment to be supplied must have minimum warranty/guarantee of **36 months**.
- 10) Each page in the bid document must be numbered properly and duly signed & sealed by the bidder on every page of the bid.
- 11) **The items/ materials shall be required to be delivered at Chemical Department/ Section through Purchase & Store Section, IIT (ISM) Dhanbad** at the risk and cost of the tenderer.
- 12) Unloading and installation shall be the complete responsibility of the supplier.
- 13) The stores are required to be delivered within 30 days. Late delivery may not be accepted.
- 14) The items offered should be of good quality confirming to BIS standards, wherever applicable.
- 15) **Advance payment is not admissible**. Payment shall normally be made within 30-45 days subject to receipt and acceptance & installation of the ordered materials/items PBG and other documents.
- 16) Successful bidders will have to submit Performance Security (PBG) in the form of Bank Guarantee as per the Purchase Order before releasing payment.
- 17) In the event date on which the tender is opened for acceptance is declared to be a holiday, the tenders shall be deemed to remain open for acceptance till the next working day.
- 18) Please send your sealed offer by Regd. Post/ Speed Post/ Courier only along with Courier receipt. By hand delivery of the tender will not be accepted. Tender/ quotation will be received during IIT (ISM) working hours only (i.e. Monday to Friday). *Late or delayed tenders shall be summarily rejected.*
- 19) Any other information that you may like to obtain, you are free to contact IIT (ISM) before submission of tender.
- 20) IIT (ISM) reserves the right to accept and/or to reject any/ all tenders without assigning any reason.

Assistant Registrar



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## Annexure – I

### **TECHNICAL SPECIFICATIONS FOR SUPPLY & INSTALLATION OF FIXED BED CATALYSIS**

#### **Section 1: General specification**

- A bench-top unit comprising of a packed bed reactor columns, feed pump, optical absorbance sensor/photometer and a flow injection analysis (FIA) system mounted on a suitable base with electrical console.
- The base of the unit should be constructed with a suitable and durable material to ensure good rigidity and strength.
- The unit should be supplied as a standard unit with two reactor columns for fixed bed chemical catalysis.
- A provision must be available to add a third column to the system for biological (enzymatic) fixed bed catalysis.
- The unit must be able to employ a standard catalytic reaction (e.g., sugar inversion reaction) to study the performance of packed-bed chemical and biological catalytic reactors.
- An optical absorbance sensor/photometer must be provided to determine the degree of conversion.
- Automated assay using flow injection analysis (FIA) system must be provided.
- The FIA pump should be adjustable to give flow rates of 2.0 ml/min or higher.
- A microprocessor based heated water circulator arrangement must be provided to the column jackets that enables automatic control of reaction temperature to a set point value in order to study the effect of temperature.
- A variable-speed peristaltic feed pump must be provided to adjust the flow rate through the reactors.
- Feed flow rate range: 0-50 ml/min or higher is to be maintained.
- Valves are to be provided to change the feed and product flow from one packed column to the other.
- Suitable sized storage tanks for reactants and products should be provided.
- All electrical circuits are to be fitted with appropriate protection devices.
- The console must have digital display meters to show the temperature of water supplied to the column jackets, and the optical sensor reading (a measurement of product concentration).
- Data acquisition system supported by suitable analysis software along with an I/O port for connection to a Windows based PC should be provided.
- A comprehensive instruction manual with details installation and operating procedures is required to be provided.

#### **Power requirement:**

220-240 V; Single Phase; 50 Hz



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<b>One</b> Data Retrieval, Storage, and Analysis System	System for retrieval, storage and analysis (Branded System such as Dell/HP/HCL/ASUS/ FUJITSU/OEM Certified System). Must be compatible with the quoted instrument and operating software of the instrument.
Processor	Intel Core-i7 (minimum) and 2.8 GHz (minimum)
Memory	Maximum 16GB
Hard Disk	500GB SSD (with OS installation)
Graphics Card	4GB (maximum)
Optical Drive, keyboard, Mouse	DVD +- RW Drive, Wired Keyboard and Mouse
Operating System	Latest version of Windows (64 bit), English
Monitor	22 inch IPS LED monitor compatible with the equipment

## **Section 2. List of other Certificates/Items to be produced by the OEM/Supplier:**

1	(i) That they are the original equipment manufacturer of the equipment/instrument (base) & (ii) A certificate is required from original equipment manufacturer (OEM) that their equipment and accessories meet all minimum specifications as given in Section 1.
2	A three year warranty certificate including technical and maintenance support is required from original equipment manufacturer (OEM).
3	Detailed Catalogue/Data Sheet of the quoted item(s).
4	Clientele List (preferably centrally funded technical institutions/labs).
5	Performance Letter from the Clients.
6	Compliance chart with respect to NIT specification, supported by catalogue and manufacturer website to be provided.
7	All essential accessories to run the equipment to be quoted.





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Annexure – II (A)

## 1. PRICE SCHEDULE FOR GOODS BEING OFFERED FROM ABROAD

Name of the Bidder \_\_\_\_\_ (On bidders letter head)

NIT Reference No. Chemical/INS/330/18-19

Date: 15 January 2019

Bidder's Reference No. \_\_\_\_\_

Date:

Sl. No.	Description/Part No./Make Model	Quantity	Unit Price (in foreign currency)	Total Amount (in foreign currency)
1.				
2.				
3.				
Total Ex-Works Price-				
Packing & Forwarding and inland freight				
*FCA (at port)				
Terminal charges, loading on vassal				
**FOB (name of port)				
Air freight & insurance up to destination port				
*CIF				
Carrier charges & insurance up to final destination				
**CIP				
Concessional Custom Duty (Against DSIR Certificate)				
IGST rate (Against IIT (ISM) Certificate)				
Other Duties/taxes/clearance charge, if any				
Transportation charges up to IIT ISM Dhanbad				
Chargeable weight/Gross weight of consignment				
Indian agency Commission (%)				
Installation & Commissioning charge				
Training charges, if any				
Additional Warranty Charges, if any				
Annual Maintenance Charge, if any				
Educational discounts, if any				
Total Ex-Works Price-				

\* & \*\* Mandatory requirement

##Total Bid Price \_\_\_\_\_ in words \_\_\_\_\_

### Note :

Total Bid price in foreign currency \_\_\_\_\_ in words

- Indian agent name & address \_\_\_\_\_
- Installation, commissioning & training charges, if any \_\_\_\_\_
- Please note that Indian agents' commission shall be paid in Indian Rupees only.
- Banker's details such as- Name of account holder, Account Number, Name of Bank, Branch code, RTGS code, NEFT code, SWIFT code etc.
- Price schedule of optional items shall be indicated in a separate sheet in the same performa.
- Quoting Price for FOB/FCA and for CIF/CIP basis, otherwise bid will be rejected.
- Wherever the price quoted on FOB/FCA and CIF/CIP basis are the same, the contract would be made on CIF/CIP basis only.
- Country of Origin, Dimension and Gross Weight must be provided

Signature of Bidder

Name \_\_\_\_\_

Business Address with contact details \_\_\_\_\_



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Annexure – II (B)

## 2.PRICE SCHEDULE FOR GOODS BEING OFFERED WITHIN INDIA

Name of the Bidder \_\_\_\_\_ (On bidders letter head)

NIT Reference No. **Chemical/INS/330/18-19**

Date: 15 January 2019

Bidder's Reference No. \_\_\_\_\_

Date:

Sl. No.	Description/Part No./Make Model	Quantity	Unit Price (in foreign currency)	Total Amount (in foreign currency)
1.				
2.				
3.				
Ex-Works Price-				
Packing & Forwarding				
Transportation				
FOR (IIT ISM) Dhanbad				
GST/IGST (their rate(s) as the case may be, clearly specified)				
Please note that IIT ISM is eligible for Concessional GST as per Notification No. 45/2017 – Central Tax (Rate) for CGST, 45/2017 – State Tax (Rate) for SGST and 47/2017 – Central Tax (Rate) for IGST,				
Insurance up to Destination/handover (in case of fabrication)				
Installation & Commissioning charge				
Training charges, if any				
Additional Warranty Charges, if any				
Annual Maintenance Charge, if any				

\*(On the basis of the technical specifications submitted)

Total Bid Price \_\_\_\_\_

in words \_\_\_\_\_

Note :

(a) The Price schedule of optional items shall be indicated in a separate sheet in the same Performa.

(b) Cost spare parts may be indicated separately

Signature of Bidder

Name \_\_\_\_\_

Business Address with contact details \_\_\_\_\_