



**NATIONAL INSTITUTE OF TECHNOLOGY  
ROURKELA – 769 008, ODISHA**

**Advertised Tender Enquiry**

**Department: Ceramic Engineering**

**Tender notification no: NITR/PW/CR/2020/205**

**Date: 09/11/2020**

**To**

**Important Dates**

Bidding  
Through  
e-Procurement module of CPP Portal  
(e- Procurement)

<https://eprocure.gov.in/eprocure/app>

<b>Event</b>	<b>Date</b>	<b>Time</b>
Pre-bid Conference	<b>23/11/2020</b>	<b>03:00 PM</b>
Last Date of submission of bid	<b>10/12/2020</b>	<b>11:00 AM</b>
Date of opening of techno-commercial bid	<b>11/12/2020</b>	<b>11:00 AM</b>

Dear Sir,

We intend to purchase the commodities specified below and invite quotations in accordance with the terms and conditions detailed in the bid document. If you are interested, kindly send your offer with prices and complete terms within the time mentioned above.

For any clarification, you may contact to:

**Attention:**  
**Prof. S. K. Pratihar**  
Department of Ceramic Engineering  
NATIONAL INSTITUTE OF TECHNOLOGY  
ROURKELA – 769 008, ORISSA  
Phone – 0661 – 2462206, 9437391103  
Email: [skpratihar@nitrkl.ac.in](mailto:skpratihar@nitrkl.ac.in)

Yours sincerely,

\_\_\_\_\_  
Prof. S.K. Pratihar

**Encl:**

- (1) Schedule of requirement, specifications, dates etc.**
- (2) Bid document containing detail terms and conditions.**

## 1. Schedule of requirements

Item No	DESCRIPTION	Quantity
1	BET surface area and pore size analyser (Complete system with accessories and spares as mentioned in Annexure I)	1 Unit

## 2. Specifications and allied Technical Details

Please see Annexure I  
\* Attach User list along with the quotation

## 3. Format of Quotation (tick appropriate box)

It is a two part bid with separate techno-commercial and price bids

4. The bid should be submitted through <https://eprocure.gov.in/eprocure/app>

5. Quotations should be valid for a period of **120 days** from the date of opening of techno-commercial bid.

## 6. Some important dates:

i. Pre-bid Conference	Date: <b>23/11/2020</b>	Time: <b>03:00 PM</b>
ii. Last date for submission of Bid:	Date: <b>10/12/2020</b>	Time: <b>11:00 AM</b>
iii. Date of opening of Technical bid:	Date: <b>11/12/2020</b>	Time: <b>11:00 AM</b>

7. The Pre-bid Conference will be held through offline or online mode in the "**Dept. of Ceramic Engineering, NIT Rourkela- 769008**" as per the schedule date & time given above for clarifying issues and clearing doubts, if any, about the specification & other allied technical details. The prospective bidders may attend the pre-bid conference on scheduled date, time and place as mentioned above.

8. **Warranty** of minimum **01** years must be provided.

9. **GST:** GST should be charge according to applicable rates.

10. **Bid Security and Tender Cost:** Bid Security in shape of Bank Guarantee/DD (Demand Draft) for **INR 1,00,000/- (Rupees one lakh Only)** and Tender Cost (Non- refundable) in the form of DD for **INR 1000/- (Rupees one thousand Only)** in favor of **Director, NIT Rourkela** Payable at Rourkela from any Scheduled Commercial Bank except Co-operative and Gramin bank. And Bank Guarantee/DD for the Bid-Security should remain valid for a period of **120 days** beyond the bid validity period from the date of opening of bids. Bid security of unsuccessful bidders should be return to them at the earliest and latest on or before the **30 days** after the award of the contract. **EMD (Earnest Money deposit)** and **Tender Cost** should reach physically through speed post/ register post/courier, containing in an envelope & superscripted with subject, tender reference number addressing to **Registrar, NIT Rourkela- 769008, Odisha**; Attention: HOD(CR) on or before **11/12/2020 at 11:00 AM**.

11. **Performance Security: INR 2, 50,000/- (Two lakhs fifty thousand only)** in shape of Demand Draft (DD)/Bank Guarantee in favour of Director, NIT Rourkela and payable at Rourkela. And Performance security should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the suppliers including warranty obligation. And EMD (Earnest Money Deposit) amount of successful bidder will be return after the receipt of performance security in case of award of contract to successful bidder.

12. Please go through the enclosed "bid document" carefully for other bidding instructions.

13. Please send your quotations through <https://eprocure.gov.in/eprocure/app>

13. **Technical Bid Evaluation Criteria:** As per the detail equipment technical specifications given in Annexure–I. If required, the bidder may be asked to provide clarification regarding the technical aspects.

- Offers from Authorized agents of Foreign Manufacturers should accompany Principal's Authorization letter mentioning our Tender Reference Number.
- Manufacturer should have proper website and offered product should be available in the website.
- Detailed User List with the concerned person's valid contact details, in India or abroad where instrument is still in operational condition must be provided.
- The ordered goods are required to be installed within 60 days of receipt of goods at this Institute. Installation should be carried out only by expert engineers of Supplier / Manufacturer. During the course of installation, necessary training on operation and maintenance of the goods shall be imparted to Institute's Faculties / Engineers / Technicians. Installation and training must be free of cost
- At least five user names and contact from NIT/IIT/reputed Indian institute/Govt. research organization must be provided where the same equipment has been supplied in last three years along with copy of purchase order.
- Prior installation conditions / site preparation / electrical connection required must be clearly mentioned in the quotation along with technical bidding documents
- Prices of additional / optional items not appearing in the BOQ, if any, shall be quoted in a separate PDF file, duly signed by Bidder's authorized person/persons.
- If any component/ additional instrumental unit/consumables which is required for smooth running of instrument is made in India that must be quoted in INR. Anything which is of Indian origin must be quoted in INR.
- The comparison between the indigenous and the foreign offers shall be made on FOB destination basis and CIF/CIP basis respectively
- In case optional items are specified in the tendered specifications, the Purchaser reserves the right to buy or not to buy the optional items. In case the option is exercised to buy the optional items after Bid opening, then the cost of optional items would be included to ascertain the Lowest Evaluated Responsive Bid. In case, the option is exercised not to buy the optional items, then the cost of the optional items would not be included in ascertaining the Lowest Evaluated Responsive Bid.
- The quotations are liable to be rejected if any of the above conditions are not complied with or there is any violation of GFR17 rules and regulations. Conditional Bids shall not be accepted.
- The Bidder shall bear all costs associated with the preparation and submission of its bid, and "the Purchaser", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.
- Note: Where there is no mention of packing, forwarding, freight, insurance charges, taxes etc., such offers shall be treated as inclusive of all these expenses
- In all regards, the GFR17 rules and regulation will be strictly followed
- The delivery up to NIT Rourkela is solely bidder's responsibility

14. **Financial Bid Evaluation Criteria:** The comparison will be made for the award of contract on the overall L1 price basis.

15. For technical details, you may contact

**Prof. S.K. Pratihar**  
Professor  
Department of Ceramic Engineering,  
National Institute of Technology,  
Rourkela - 769 008  
Phone: 0661 - 2462206, 9437391103  
E-mail: [skpratihar@nitrkl.ac.in](mailto:skpratihar@nitrkl.ac.in)

NB: ***Please furnish your Dealership Certificate (must) and Proprietary Nature Certificate (If applicable)***



# NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA – 769 008, ODISHA

## BID DOCUMENT

### 1. Instructions to the bidders

- 1.1 Bids are invited on behalf of the Director, National Institute of Technology (NIT), Rourkela – 769 008, Odisha, from the intending bidders for supply of the goods/stores/ equipment for the Institute as detailed in the enquiry letter.
- 1.2 The bidders should quote their offer/rates in **BOQ** in clear terms without ambiguity.
- 1.3 In case of any discrepancy between the rates in figures and that in words, the rate in words will be accepted as correct.
- 1.4 The last date for receipt of the bid is marked in the enquiry.
- 1.5 The bids should be uploaded in <https://eprocure.gov.in/eprocure/app> Please follow the guidelines of the site.
- 1.6 If a prospective bidder requires any clarification in regard to the bidding documents, he may make a request the concerned officer or faculty member at least 15 days before the deadline for receipt of bids.
- 1.7 Bids received after the deadline of receipt indicated in para 1.4 above, shall not be taken in to consideration.
- 1.8 Each bidder shall submit only one bid. A bidder, who submits more than one bid, shall be disqualified and considered non-responsive.
- 1.9 (In respect of high value plant, machinery etc. of a complex and technical nature). The bids may be submitted in two parts, viz., technical bid and financial bid.
- 1.10 The bidder has to sign in full at all pages of the scanned part of the bidding document. No over-writing in those pages is acceptable.
- 1.11 If any bidder does not fulfil technical specification, his/her eligibility will be cancelled even if his/her price got L1 status.
- 1.12 Bidders registered with any of the following agencies/ bodies as per Public procurement policy for Micro & Small Enterprises (MSE) order 2012 are exempted categories from payment of EMD provided that the registration Certificate issued by any one of these below mentioned agencies must be valid as on close date of tender. Micro small or medium enterprises who have applied for registration or renewal of registration with any of these agencies/bodies but have not obtained the valid Certificate as on close date of tender are not eligible for exemption.
  - i) Khadi and Village Industries Commission (KVIC)
  - ii) National Small Industries Corporation (NSIC)
  - iii) Any other body specified by Ministry of MSME/GOI

### 2. Conditions of the bid

- 2.1 The rates quoted should preferably be net, inclusive of packing, forwarding, freight, Insurance and all other incidental charges including taxes. In case these charges are quoted extra in addition to the quoted rates, the amount thereof or Ad Valorem rate must be specified. Packing, forwarding, freight, entry tax etc., when quotes separately are reimbursable at actual. If external agencies are employed, their receipts must be enclosed with the invoice.
- 2.2 Duties and Taxes are to be quoted separately. Ad Valorem rates thereof should be clearly indicated with reference to the relevant Acts and Rules.

**It may be noted that the Institute is availing custom duty exemption in terms of Notification No. 51/96 – Customs dt. 23.07.1996, Notification No. - 47/2017- Integrated Tax (Rate) dt. 14.11.2017 and Notification No- 45/2017 – Integrated tax (Rate) dt. 14/11/2017 & Notification No. - 45/2017- Central tax (Rate) dt. 14.11.2017, Notification No. - 45/2017- Union Territory Tax (Rate) dt. 14/11/2017 [Vide DSIR, Ministry of Science and Technology, Government of India, Registration No.: TU/V/RG- CDE (227)/2016, dated: 13.11.2018]**

- 2.3 The goods are required to be delivered at the indenting Department of NIT, Rourkela, and must be reached within **90 days** from the date of placement of the supply of order under the risk and arrangement of the bidder and offers with delivery beyond the above period shall be treated as unresponsive. In case the delivery time is higher, the same must be mentioned clearly in the quotation.
- 2.4 The bid should remain valid for a period of **120 days** from the date of opening. In case your offer has a different validity period that should be clearly mentioned in the quotation.
- 2.5 Conditional discount, if any, offered by the bidder shall not be considered at the time of evaluation.
- 2.6 The goods offered should strictly conform to the specification and technical details mentioned in **Annexure-I**.
- 2.7 The Institute may like to conduct pre-dispatch inspection of goods, where applicable.
- 2.8 Period of guarantee/warranty, where applicable, should be specified in the bid.
- 2.9 If the successful bidder, on receipt of the supply order, fails to execute the order within the stipulated period, in full or part, it will be open to the Director, NIT, Rourkela to recover liquidated damage from the firm at the rate of 1 percent of the value of undelivered goods per month or part thereof, subject to a maximum of 5 percent of the value of undelivered goods. Alternatively, it will also be opened to the Director, to arrange procurement of the required goods from any other source at the risk and expenses of the bidder.
- 2.10 The successful bidder may be required to execute a contract, where applicable.
- 2.11 The bidder has to furnish up to date GST and Income Tax Clearance Certificate along with the bid.
- 2.12 Purchase order / Work order shall be placed on the bidding firm(s). In case of deviation to this, if any, the bidding firm should produce any such sufficient documents/credentials i.e, Agreements, MOUs, Arrangements etc. with the third party/ OEM to satisfy the buyer. A consent letter from the third party/ OEM to that effect must be enclosed along with the bidding documents.
- 2.13 Payment (100 percent) will be made by Account Payee Cheque /Bank Draft, within 30 days from the date of receipt of the goods in good condition or receipt of the bill, commissioning of the equipment, and after successful installation and demonstration where ever applicable, whichever is later/latest.
- 2.14 In case of Advance payment, the payment will be made on either in Foreign Demand Draft or Wire Transfer only. The proforma invoice copy need to be sent for advance payment.
- 2.15 State Bank of India is the sole Banking partner for NIT Rourkela for operation of LC (Letter of Credit).
- 2.16 In the event of any dispute arising out of the bid or from the resultant contract, the decision of the Director, NIT, Rourkela shall be final.
- 2.17 The bid document/resultant contract will be interpreted under Indian Laws.

**TENDER SPECIFICATIONS OF  
BET SURFACE AREA AND PORE SIZE ANALYZER**

**Automatic BET surface area and a Pore size analyzer**

- Fully automatic, high-resolution gas sorption analyzer for the determination surface area, mesopore and micropore size and its distributions from 0.35 to 500 nm is required for high throughput micropore BET Measurements
- The system should handle samples in the form of powder, pellets, etc.
- The system should have the provision for up-gradation for chemisorption at a later date on site.

**Key features:**

- The system should have continuous  $P_o$  measurements using a dedicated  $P_o$  cell and transducer without interruption of analysis.  $P_o$  cell will be of the same material as that of the sample holder.
- Fully integrated, built-in vacuum system using an oil-free turbo pump package backed by a mechanical pump.
- **The system should have a minimum of 2 number of Micropore analysis stations with in build/external 4 or more number of degassing stations.**
- The system should be able to use any non-corrosive gas such as nitrogen, argon, krypton, carbon dioxide, hydrogen, carbon monoxide, butane, etc.
- Each sample analysis station manifold should be equipped with a minimum of four pressure transducers: three for analysis 1000, 10, 0.1 mm Hg, and an independent  $P_o$  transducer with 1000 torr.
- Each sample station works independently and or simultaneously, thus the instrument can perform sorption experiments on different samples at the same time.

**Techniques and Reports:**

- System software should display and interpret data in various methods, including,
- Single or Multi-point BET Surface area
- Adsorption and Desorption isotherms
- Langmuir surface area
- External Surface area (Statistical Thickness Method)
- BJH Pore Size Analysis
- t-Plot
- HK Pore Size Analysis
- SF Pore Size Analysis
- DFT method
- Average pore size, total pore volume

**Basic Measurement Specifications:**

- a) Surface area using nitrogen:  $0.01 \text{ m}^2/\text{g}$  and above
- b) Maximum  $P/P_o$  using nitrogen/argon:  $10^{-7} - 0.998$

**Pressure Specifications of the Analyzer:**

- Accuracy 1 to 1000 torr range:  $\sim \pm 0.20\%$  FS or better
- Minimum and max. P/P<sub>o</sub> using nitrogen/argon:  $10^{-7} - 0.998$
- Ultimate vacuum:  $\sim 7 \times 10^{-12}$  mmHg

**Analysis Features:**

- a. A High-vacuum construction using metal-to-metal seals is expected for long-life performance
- b. Small void volumes
- c. Provision to constantly monitor the measurement of manifold temperature and pressure.
- d. Multiple dosing modes using a target P/P<sub>o</sub> or fixed volumes in multiple ranges.
- e. Measurement void volume automatically or re-use value already measured
- f. Measurement of saturation pressure constantly or user entered.
- g. At least 3 litres or larger Dewar to extend uninterrupted analysis time to 72 + hours without a refill.
- h. The instrument should have a minimum of 5 number of gas input ports.

**Degassing Features:**

- a. The system should degas four or more samples simultaneously.
- b. Degassing should be able to program for multiple heating ramps and hold times
- c. The system should have programmable evacuation to avoid elutriation.
- d. The system should have smart degassing to monitor pressure and pause heating if requested.
- e. The smart degassing should be able to automatically terminate heating according to a programmable test.
- f. The system with automatic backfill from dedicated gas input or isolate under vacuum at the end of degassing.
- g. The Degassing protocols should be able to be saved for later use.
- h. The Degassing protocols should be able to be stored along with analysis data.
- i. The Vacuum path should have a refillable cold trap for best degas vacuum levels.
- j. Heating mantles with dual, independent thermocouples for over-temperature safety.
- k. Max. Temp of Heating mantle  $\sim 350^\circ$  C.

**Power requirement:** 200-240 V, 50Hz, single-phase power supply.

**Essential Accessories to be supplied along with the system:**

- a. 5 KVA UPS system with 30 min backup
- b. Compatible desktop computer (minimum i5 configuration) and b/w laser printer
- c. Sample cells (in different capacities): 5 each for powders, pellets, and granules.
- d. "O" rings & filler rods (6 sets and 4 sets, respectively).
- e. Suitable standards for micropore/mesopore range
- f. Gas Cylinders with 47 Liter with Two-stage SS gas regulators Gas cylinders (filled with ultra-purity gases, 99.999%) of Nitrogen, Helium, CO<sub>2</sub>.
- g. Liquid Nitrogen Container (capacity 10 Lit): 2 Nos
- h. Multiple user license software must be provided.

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