



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

Advertised Tender Enquiry

Department: Electrical Engineering

Tender Notice No.: NITR/PW/EE/2024/325

Date: 06/06/2024

Important Dates

Through,
CPP Portal
(e-procurement)

Event	Date	Time
Pre-bid Conference	NA	NA
Last Date of submission of bid	27/06/2024	11:00 AM
Date of opening of technical bid	28/06/2024	11:00 AM

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:

ATTENTION:

Prof. Paresh G. Kale
Department of Electrical Engineering
National Institute of Technology
Rourkela – 769 008, Odisha
Phone: 0661 – 2462447
Email: pareshkale@nitrrkl.ac.in

Yours sincerely,

Name: Prof. Paresh G. Kale
(PIC)

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	Electrochemical Workstation	1 Set

2. **Specifications and allied Technical Details: As per Annexure – I**

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

It is a two-part bid with separate technical 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 **90 days** from the closing date of the bid.

6. **Some important dates:**

i.	Pre-bid Conference	Date: NA	Time: NA
ii.	Last date for submission of bid:	Date: 27/06/2024	Time: 11:00 AM
iii.	Date of opening of Technical bid:	Date: 28/06/2024	Time: 11:00 AM

7. **Warranty** of minimum 2 (two) year from the date of installation.

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

9. **Earnest Money Deposit and Tender Cost:** EMD in shape of Demand Draft / Banker's Cheque for **INR 20,000/-** (Rupees Twenty thousand only) and Tender Cost (Non- refundable) in the form of Demand Draft / Banker's Cheque for **INR 500/-** (Rupees Five hundred only) in favor of **“Director, NIT Rourkela” Payable at Rourkela** from any Scheduled Commercial Bank except Co-operative and Gramin bank. The Demand Draft for the EMD should remain valid for a period of **45 days** beyond the bid validity period from the date of opening of technical bids. EMD of unsuccessful bidders will be returned to them without any interest at the earliest and latest on or before the **30th days** after the award of the contract.

10. **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; on or before 28/06/2024 by 11:00 AM**, failing which the bid will summarily rejected.

11. Bidders registered with Khadi and Village Industries Commission (KVIC), National Small Industries Corporation (NSIC) and any other body specified by the Ministry of MSME / GoI as per public procurement policy for Micro & Small Enterprises (MSE) order 2012 are exempted categories from payment of EMD provided that the registration certificates issued by one of those mentioned agencies must be valid as on closing date of tender. Micro and Small Enterprises who have applied for registration renewal of registration with any of those agencies/bodies but have not obtained the valid certificate as of the close date of the tender are not eligible for exemption.

12. The EMD / Bid Security of the bidder who withdraws its bid in breach of terms and conditions of the contract, withdraws at any stage after the opening of the technical bid and who evades or refuses to accept the Award of Contract after being L1 within the period of validity, shall be liable to forfeiture.

13. **Performance Security:** 3 % of tender contract value in favor of **“Director, NIT Rourkela” Payable at Rourkela** from any Scheduled Commercial Bank except Co-operative and Gramin bank within 15 days from the date of P.O. in shape of Demand Draft. Performance Security will remain valid for period of 60 days beyond the date of completion of all contractual obligations of the suppliers including warranty obligation.

14. **Technical Evaluation Criteria:** As per the detailed equipment technical specifications given in Annexure –I. The bidder may be asked to provide clarification regarding the technical aspects during technical evaluation.
- i. Bids are invited from OEM or Authorized vendor. Authorized vendor will submit the Bid Specific OEM MAF along with bid document. Authorized Vendor or Original Equipment Manufacturer (OEM) should have own service center in India. The Authorized Vendor or OEM must enclose details of their infrastructure with reference to locations and technical manpower. A valid GST registration certificate of Authorized Vendor or OEM should be submitted along with bid.
 - ii. There must be a local maintenance centre with the availability of the spares in India.
 - iii. A declaration from the principal stating that the spares will be made available for the equipment for at least 5 (five) years from the date of installation.
 - iv. Scanned copies of the technical brochure of the above equipment / software and accessories (Annexure-I) given in the quotation must be included in the technical bid.
 - v. Three numbers of Scanned copy of PO (not older than 7 years) of similar or higher specification supplied within India (at least ONE from premier Government Institution and R & D Organization) Contact details of a person phone/ mob. no. with e-mail ids should be attached.
 - vi. A duly signed detailed User List (at least 5) with the concerned person's valid contact details, in India where the instrument is still in the operational condition must be provided.
 - vii. Web references must be provided along with the technical bid.
 - viii. Point wise technical compliance along with any deviation of the mentioned specifications (Annexure-I) must be indicated along with technical documents.

Other Qualification criteria:

- i. The bidder should be a Private/ Public Limited Proprietorship/Partnership firm registered under the Companies Act, 1956 or a registered firm. The company/firm should be in existence for more than 3 years as on date. Copy of Certificate of incorporation/commencement should be submitted.
- ii. The average annual financial turnover of the tenderer for last three consecutive financial years ending on 31st March, 2023 should be minimum **Rs 40 lakhs**. Copy of Audited Balance Sheet and P/L Account to be submitted, duly certified by a Chartered Accountant.
- iii. Income Tax Return, Balance Sheet and Profit & Loss Statement for the last 3 years ending 31st March 2023 duly certified by Chartered Accountant must be submitted in techno-commercial bid.
- iv. The Vendor shall provide the following information with the bid to provide background information on vendor to Tender Committee.
 - a. **The list of clients** (contact details of a person phone/ mob. no. with e-mail ids should be attached) where the bidder/OEM had supplied the similar type of materials (as mentioned in schedule of requirements) with successful installation in last three years.
 - b. **Delivery period** Within 30 days from the date of placement of the Purchase Order.
 - c. **Customer support:** 24x7 hours.
 - d. **Mode of handling complains** (by email or by phone etc.)
 - e. **Validity period.** 90 days.
 - f. Any other points may have deemed fit by the committee at time of technical evaluation of bid documents.
 - g. Details of Software included in offer.
 - h. Details of Technical Specification and other specifications so as to enable technical assessment of the proposal.

15. Financial Bid Evaluation Criteria:

- i. The financial bids should be uploaded online as per the specified “.Xls” format i.e. Price Bid Excel sheet attached as ‘.Xls’ with the tender and based on the scope of work, service conditions and other terms of the Tender document. It should include all costs associated with the Terms of Reference/Scope of Work of the assignment.
- ii. The comparison will be made for the award of contract on the overall price basis quoted in BOQ.

16. MII & Purchase Preference:

As per the Ministry of Commerce and Industry Order No. P-45021/2/2017-PP(BE-II) dated 04.06.2020 preference shall be given to Make in India products for which it is mandatory for bidders to declare Country of Origin of goods and percentage of Local contents in the product.

Definitions:

“Local Content” means the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent. “Class-I local supplier” means a supplier or service provider, whose goods, services or works offered for procurement, has local content to or more than 50%, as defined under this order. “Class-II local supplier” means a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%, as defined under this order. “Margin of purchase preference” means the maximum extent to which the price quoted by a Class-I local supplier may be above the L1 for the purpose of purchase preference. (shall be 20%)

Purchase Preference:

- (a) Subject to the provisions of this Order and to any specific instructions issued by the Nodal Ministry or in pursuance of this Order, purchase preference shall be given to ‘Class-I local supplier’ in procurements undertaken by procuring entities in the manner specified here under.
- (b) In the procurements of goods or works, which are covered by para 3(b) above and which are divisible in nature, the Class-I local supplier' shall get purchase preference over 'Class-II local supplier' as well as 'Non-local supplier', as per following procedure:
 - i. Among all qualified bids, the lowest bid will be termed as L1. If L1 is Class local supplier', the contract for full quantity will be awarded to L1.
 - ii. If L1 bid is not a 'Class-I local supplier', 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the 'Class-I local supplier' will be invited to match the L1 price for the remaining 50% quantity subject to the Class-I local supplier's quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to such 'Class-I local supplier' subject to matching the L1 price. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price or accepts less than the offered quantity, the next higher 'Class-I local supplier' within the margin of purchase preference shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on Class-I local suppliers, then such balance quantity may also be ordered on the L1 bidder.
- (c) In the procurements of goods or works, which are not divisible in nature, and in procurement of services where the bid is evaluated on price alone, the 'Class-I local supplier' shall get purchase preference over 'Class-I local supplier' as well as 'Non-local supplier', as per following procedure:
 - i. Among all qualified bids, the lowest bid will be termed as L1. If L1 is 'Class1 local supplier', the contract will be awarded to L1.
 - ii. If L1 is not 'Class-1 local supplier', the lowest bidder among the 'Class-I local supplier', will be invited to match the L1 price subject to Class-I local supplier's quoted price falling within the margin of purchase preference, and the contract shall be awarded to such 'Class-I local supplier' subject to matching the L1 price. iii. In case such lowest

eligible 'Class-1 local supplier' fails to match the L1 price, the 'Class-1 local supplier' with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on and contract shall be awarded accordingly. In case none of the 'Class-1 local supplier' within the margin of purchase preference matches the L1 price, the contract may be awarded to the L1 bidder.

(d) "Class-II local supplier" will not get purchase preference in any procurement, undertaken by procuring entities.

17. Please go through the enclosed "bid document" carefully for other bidding instructions.
18. Please send your quotations through <https://eprocure.gov.in/eprocure/app>
19. For technical details, you may contact:

<p>Prof. Paresh G. Kale Department of Electrical Engineering National Institute of Technology, Rourkela 769 008, Odisha Phone:0661-246-2447 E-mail: pareshkale@nitrkl.ac.in</p>
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NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA – 769 008, ORISSA

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. Bid received after deadline of receipt indicated in para 1.4 above shall not be taken into consideration.
- 1.7 Each bidder shall submit only one bid. A bidder, who submits more than one bid, shall be disqualified and considered non-responsive.
- 1.8 (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.
- 1.9 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.
- 1.10 Partial submission of bid is not permitted. Bidders should apply for all items.
- 1.11 EMD exemption is as per govt. of India rule

2. Conditions of the bid

- 2.1 The rates quoted should preferably be net, inclusive of all taxes and duties, packing, forwarding, freight, Insurance and all other incidental charges. 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 etc., when quotes separately are reimbursable at actuals. 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.
- 2.3 The goods are required to be delivered at the indenting Department of NIT, Rourkela, and must be reached within **30 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 **90 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 No Bid shall be modified, substituted or withdrawn by the Bidder after the Bid's due date.
- 2.6 Any alteration/ modification in the Bid or additional information supplied subsequent to the Bid's due Date, unless the same has been expressly sought for by the Authority, shall be disregarded.
- 2.7 Conditional discount, if any, offered by the bidder shall not be considered at the time of evaluation.
- 2.8 The goods offered should strictly conform to the specification and technical details mentioned in **Annexure-1**.

- 2.9 The Institute may like to conduct pre-dispatch inspection of goods, where applicable.
- 2.10 Period of guarantee/warranty, where applicable, should be specified in the bid.
- 2.11 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, National Institute of Technology (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, National Institute of Technology (NIT), Rourkela to arrange procurement of the required goods from any other source at the risk and expenses of the bidder.
- 2.12 The successful bidder may be required to execute a contract, where applicable.
- 2.13 The bidder has to furnish up to date GST and Income Tax Clearance Certificate along with the bid.
- 2.14 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.
- 2.15 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.
- 2.16 The institute reserves the rights to cancel / reject any or all bids, or cancel the tender process, or issue another identical tender for similar service without assigning any reason thereof.
- 2.17 In the event of any dispute arising out of the bid or from the resultant contract, the decision of the Director, National Institute of Technology (NIT), Rourkela shall be final.
- 2.18 The bid document/resultant contract will be interpreted under Indian Laws.
- 2.19 Partial submission of bid is not permitted. Bidders should apply for all items.

Electrochemical workstation

The electrochemical workstation consists of a potentiostat, galvanostat, and electrochemical impedance analyzer, along with data acquisition and analysis software. The system characterizes batteries, supercapacitors, biosensors, and electrochemical hydrogen storage.

1. No of Channel- 2

Real independent 2-channel potentiostat. The built-in EIS module is equipped in both channels and connects to two independent cells, and conduct the experiments in each channel simultaneously.

2. Hardware configuration

- Cell connection/Electrode Configuration: 2, 3, 4 electrode measurements
- Applied Potential: $\pm 10\text{V}$
- Compliance voltage: $\pm 21\text{ V}$
- Mini Current Range: $\pm 2\text{ nA}$
- Max Current: $\pm 2\text{ A}$
- Current sensitivity: 1 pA
- Potential control accuracy: $0.1\% \times \text{full range}$
- Applied Potential Resolution: $15\text{ }\mu\text{V}$
- CV and LSV scan rate: $0.001\text{ mV} \sim 10,000\text{ V/s}$
- Scan rate: $0.001\text{ mV} - 10,000\text{ V/s}$
- Potential Rise time: $< 1\text{ }\mu\text{s}$
- Reference electrode input impedance: 10^{12} or higher
- USB / RS232 Communication
- Windows Operating Software
- Impedance Spectroscopy Frequency range: $10\text{ }\mu\text{Hz} - 1\text{ MHz}$
- AC amplitude: $1\text{ mV} \sim 2500\text{ mV}$

3. Three Electrode Cell Setup as accessories:

- GC Working Electrode: 1 No.
- Pt wire Counter Electrode: 1 No.
- Ag/AgCl reference Electrode: 1 No.
- Cell Holder
- Coin Cell Holder

4. Desktop Computer

- Intel i5 12th gen processor or better
- At least 16 GB DDR4 RAM
- At least 500 GB SSD
- 27-inch Monitor
- Wireless mouse and keyboard

5. Software-supported Techniques (* indicates mandatory specification)

The bundled software and hardware must record data from each channel simultaneously.

Stable polarization

- Open Circuit Potential (OCP)*
- Potentiostatic (I-T curve) *
- Galvanostatic*
- Potentiodynamic (Tafel plot) *
- Galvanodynamic (DGP) *
- Sweep-Step Functions (SSF)

Transient Polarization

- Multi Potential Steps
- Multi Current Steps
- Potential Stair-Step (VSTEP) *
- Galvanic Stair-Step (ISTEP) *

Chrono Method

- Chronopotentiometry (CP) *
- Chronoamperometry (CA) *
- Chronocoulometry (CC) *

Voltammetry

- Linear Sweep Voltammetry (LSV) *
- Cyclic Voltammetry (CV) *
- Staircase Voltammetry (SCV) *
- Square Wave Voltammetry (SWV)
- Differential Pulse Voltammetry (DPV) *
- Normal Pulse Voltammetry (NPV)
- Differential Normal Pulse Voltammetry (DNPV),
- AC Voltammetry (ACV) *
- 2nd harmonic AC Voltammetry (SHACV)
- Fourier Transform AC Voltammetry (FTACV) *

Amperometry

- Differential Pulse Amperometry (DPA) *
- Double Differential Pulse Amperometry (DDPA) *
- Triple Pulse amperometry (TPA)
- Integrated Pulse Amperometry Detection (IPAD)
- Stripping Voltammetry*
- Potentiostatic Stripping*
- Linear Stripping*
- Staircase Stripping*
- Square Wave Stripping
- Differential Pulse Voltammetry Stripping
- Normal Pulse Voltammetry Stripping
- Differential Normal Pulse Voltammetry Stripping

Electrochemical Impedance Spectroscopy (EIS)

- EIS vs Frequency (IMP) *
- Galvanostatic EIS*
- EIS vs Potential (IMPE)(Mott-Schottky) *
- EIS vs Time (IMPT) *
- Galvanostatic EIS vs Time*

Corrosion Measurements

- Cyclic polarization curve (CPP) *
- Linear polarization curve (LPR)
- Electrochemical Potentiokinetic Reactivation (EPR) *
- Electrochemical Noise (EN) *
- Zero resistance Ammeter (ZRA)

Battery test*

- Battery Charge and Discharge
- Galvanostatic Charge and Discharge (GCD)
- Potentiostatic Charging and Discharging
- Potentiostatic Intermittent Titration Technique
- Galvanostatic Intermittent Titration Technique

Software Extensions

- Data Logger, Electrochemical Stripping/ Deposition
- Bulk Electrolysis with Coulometry (BE)
- Rs Measurement