

# NATIONAL INSTITUTE OF TECHNOLOGY PATNA



(An Institution of National Importance under MHRD, Govt. of India)

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Tender No. NITP/Proc./19-20/24

Dated 28/01/2020

## **Sub: Tender for the supply of Multichannel Potentiostat Galvanoat at under DST-SERB Project (PI. Dr. Subrata Das) Dept. of Chemistry at NIT Patna.**

National Institute of Technology Patna, an Institute of National Importance, invites sealed tenders from reputed Original Equipment Manufacturers / Authorised Dealers / eligible Bidders for the supply of Multichannel Potentiostat Galvanoat.

### **List of Annexures**

Sl. No.	Description	Annexure
1	List Of Details Specification	I(a)
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### **Critical Date Sheet**

Sl. No.	Description	Date and time
1	Publishing Date	28/01/2020
2	Bid Document Download / Sale Start Date	28/01/2020
3	Bid Submission End Date	19/02/2020
4	Bid Opening Date (Technical and Financial)	19/02/2020
5	Place of Opening Tender	Procurement Conference Room, NIT Patna

Detailed descriptions of the item and instructions for submitting your offer can be downloaded from our website [www.nitp.ac.in](http://www.nitp.ac.in).

The proposals must be sent in two separate sealed envelopes (Technical Bid and Price Bid) duly subscribed with Reference number and Tender Notice details as appended hereunder:-

### **Tender for the supply of Multichannel Potentiostat Galvanoat at under DST-SERB Project (PI. Dr. Subrata Das) Dept. of Chemistry at NIT Patna.**

TENDER REF NO: - NITP/Proc./19-20/24, DATED 28.01.2020, LAST DATE FOR SUBMISSION:  
19/02/2020 UPTO 01:00 P.M.

To,  
The Registrar  
National Institute of Technology Patna  
Bihar, INDIA

From: M/s \_\_\_\_\_

Address: \_\_\_\_\_

Contact No.: \_\_\_\_\_

The price bid will be opened only of those firms, who will be found technically qualified after evaluation of their technical bids. **The technical bids will be opened** in the presence of the Bidders/Vendors or their authorized representative who wish to be present.

**Annexure - 1(a)****DETAILED SPECIFICATION****Technical Specification of Items, namely, Multichannel Potentiostat Galvanostat,  
Pl. Dr. Subrata Das) Department of Chemistry at NIT Patna.**

Sl. No	Name of instrument	Instrument Specification
1.	Multichannel Potentiostat Galvanostat  <b>(01 Unit with Complete Instrument Accessories)</b>	<p>Multichannel System for upto 8 potentiostat galvanostat in one single chassis. It should be possible to control all the channels through one PC or upto two PCs. System should have provision to perform EIS on each channel independently. Each channel should be capable to control hyphenated technique by external triggering such as RRDE, Multiplexing, Bi-potentiostat etc through single software. Each channel should have following specifications. Price for each should be quoted separately.</p> <p><b>No of Channels: 1No.</b></p> <p><b>Potentiostat Galvanostat Specifications:</b>            Compliance voltage: <math>\pm 16</math> V or better at <math>\pm 380</math> mA            Maximum Output Current: <math>\pm 380</math> mA or better at <math>\pm 16</math> V            Output Voltage Range: <math>\pm 10</math> V            Measured potential resolution: <math>5\mu</math>V            Current Ranges: smallest current range: <math>\pm 10</math> nA to current range 100 mA in multiple ranges            Measured current resolution: 0.0005% of current range            Potentiostat Rise/fall Time: 400 ns or lower            Interface: USB interface for connection with PC            Input bias current: <math>&lt; 2</math> pA            Input Impedance of electrometer: <math>&gt;90G\Omega</math>            Built-in Current Integrator: We require to separate faradaic current from capacitive current and also directly measure integrated charge in real-time rather than current            Built-in Electromagnetic Noise filter: The system hardware must have internal third order Sallen-key filters for removing background noise that cannot be removed by simple measures such as faraday cage iR compensation</p> <p><b>Maximum scan rate: 500V/s with 15 mV steps – Required</b></p>

		<p><b>EIS module: Qty 1</b>  Frequency range should be 10 <math>\mu</math>Hz - 1 MHz with a resolution 0.003%. Hardware and software for EIS measurements in potentiostatic and galvanostatic control, over frequency range of 10 <math>\mu</math>Hz to 1 MHz upto 380 mA current and <math>\pm</math>10V. Signal generator frequency range with external waveform generator 10 <math>\mu</math>Hz to 7 MHz or more. At 1 Hz frequency, impedance of 0.01 <math>\Omega</math> must be determined with 0.3° Phase accuracy &amp; 0.3 % measured impedance accuracy. i.e – Measured impedance = 0.01 <math>\pm</math>0.00003 <math>\Omega</math> - <b>Required</b>  Data presentation: Nyquist, Bode, Admittance, Dielectric, Mott-Schottky, Data analysis: Fit and Simulation, Find circle, Element subtraction.</p> <p><b>Electrochemistry Cell:</b>  It should consist of the following:  50 mL Glass cell with suitable lid 1no, GC disc working electrode 1no, Pt wire Counter electrode 1 mm dia 40 mm length 1 no, Ag/AgCl reference electrode 1no aqueous and non-aqueous each.</p> <p><b>Software</b>  The system software must have capability for hybrid measurements such as Spectro-electrochemistry, E-SPR, SECM, IMPS-IMVS, EQCM, etc. It should have TTL triggering, ADC, DAC based communication ports. The Software must be able to be downloaded to unlimited computers, free updates &amp; fully windows based. Software should be capable of supporting a wide variety of electrochemical techniques as mentioned below:  <b>Corrosion:</b> Linear polarization with Tafel Slope Analysis, Polarization resistance evaluation, Electrochemical Noise analysis, critical pitting technique, <b>electrochemical frequency modulation</b>, hydrogen permeation analysis etc.  <b>Battery &amp; Supercapacitor Analysis:</b> Rectangular CV analysis at varying scan rates for pseudo capacitor analysis, complete charge and discharge with built in integration and 'linkable' cut-offs, Galvanostatic charge discharge with cycle number vs specific capacitance plot, Voltage measurement on counter electrode, GITT, PITT, etc.  <b>Solar Cell / Fuel Cell Studies:</b> Linear polarization, I-V plotting with automatic determination for max power point &amp; fill factor, IMPS-IMVS evaluation, EQE / IPCE Analysis, Charge extraction, Photo-current response, Mott-Schottky plots for single</p>
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		<p>frequency scan, automated band-gap analysis, etc.</p> <p><b>Electro-catalysis / Electro-deposition:</b> ORR analysis using RDE/RRDE at varying rotation speeds and built-in Kotecky-levich plot generation, HER and OER Tafel based analysis for water splitting, Carbon dioxide reduction analysis, default plug-n-play protocol for spectro-electrochemistry based LSV, CV and Chrono evaluation, Galvanostatic CV and Chrono, ASV, DPSV, etc.</p> <p><b>Trace Metal Analysis / Polarography:</b> DPSV, ASV, Chrono Coulometry, etc.</p> <p><b>Sensors:</b> Automated one-click protocol for CV and LSV analysis at varying scan rates, fully automated single click amperometric detection protocol, EIS measurement with real-time equivalent circuit fit option, etc.</p> <p><b>3D Based Live Plotting:</b> Powerful graphic engine with useful features such as vector graphics, individual axis scaling, overlays, multiple Y-axes, plot addition, real-time 3D with zooming and rotation. Minimum 10+ plot could be plotted simultaneously.</p> <p><b>Any-time Upgradation to existing system:</b> A high current booster for a full-range <math>\pm 8A</math> measureable current with <math>\pm 16V</math> compliance at a current resolution of 0.0005% or better.</p> <p><b>Any-time Switchable Option 1 Vs EIS:</b> A Multiplexer Module to allow Sequential Electrochemical Measurement from 4 to 64 independent Cells: Future Expandability</p> <p><b>Computer :</b> CPU Intel Core i5, RAM 8 GB RAM, HDD 500 GB, GPU DirectX 9.0c compliant display adapter with 1GB RAM, Keyboard, Optical Mouse, USB Ports</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• Vendor should be an authorized provider of sophisticated high-precision potentiostat/galvanostat systems for past 10 Years or more with a</li> <li>• A proven track record in multiple countries and national institutes</li> <li>• Standard quality certifications such (ISO 9001)</li> <li>• 10+ past installations of similar systems in India in past two years.</li> <li>• Warranty 2 years</li> </ul>
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**FORMAT OF COMPLIANCE STATEMENT**

<b>Para of Tender Enquiry Specification</b>	<b>Specification of Equipment Offered</b>	<b>Compliance to Tender specification whether yes or no (if yes indicate the page no and Put a Flag also highlight the matching specification)</b>	<b>In case of noncompliance deviation from Tender specification to be indicated in unambiguous term.</b>
<b>01</b>	<b>02</b>	<b>03</b>	<b>04</b>

\* The compliance certificate along with the page no indication (i.e. required spec and availability of the page in the entire tender documents by flagging or giving page no) must be submitted with the bid for evaluation. Firm not submitting the model/spec and their details availability in the bid documents by flagging/page no may not be considered for evaluation.

## **Annexure - II**

**NOTE: *The bid documents are not transferable and the firm's seal and signature of the authorized official must appear on all papers and envelopes submitted.***

### **INSTRUCTION TO BIDDERS:**

#### **Two/Double Bids:-**

- 01.** In case of two-bid system, tenders will have to be submitted in TWO PARTS i.e. (a) Technical Bid and (b) Price Bid, in two separate properly sealed covers indicating the type of Bid; and both these covers will have to be again put in to a single sealed cover. Also the address of the firm submitting the tender and the officer, to whom the tender is addressed, must appear distinctly on both the inner sealed covers, indicating also TECHNICAL BID / PRICE BID as may be applicable.
  
- 02. In the part relating to Technical Bid, the OEM/Vendor must provide the followings:-**
  - (a) Details of the technical features of the offered Equipment vis-à-vis specification as per Annexure – I (a);
  - (b) Standard Technical literature on each of the items offered; the article on offer should conform to standard quality, specification and test of manufacturer;
  - (c) Dealership certificate on the offered products from OEM in case of dealer/s;
  - (d) List of reputed organizations/Institutions, where similar orders have been executed (copies of the purchase/work order will have to be enclosed). The bidders / OEM should attach a self declaration stating that he is not banned / debarred from working with any Central Government / PSU / State Govt of India / Any other Govt. Agencies or any Institute of National / International importance.
  - (e) Copy of PAN of FIRM / Bidder must be submitted along with the Technical Bid;
  - (f) Banker's details of tendering FIRM / Bidder should be clearly mentioned;
  - (g) Details of nature and maximum period of Warranty offered by the OEM/Bidder;
  - (h) In the part relating to Price Bid, the OEM/Vendor must provide the following:-
    - (i) Quantity, basic price (against item-wise details of specifications of each of the offered items);
    - (j) Prices of each of the optional accessories, as required by specifications and may be relevant for offered Equipment, will have to be specifically stated in the quotation:
    - (k) GST (as percentage of basic price + packing & forwarding charges if any)
    - (l) Installation & commissioning charge (including GST Tax), to be shown item-wise extra, if any.
    - (m) Freight & insurance charge, if any.

**Terms & Conditions:-**

01. **Rates:** Rates quoted should be on F.O.R., NIT Patna, on Door Delivery basis mentioning all taxes/break-up separately.
02. **Validity:** Quoted rates must valid for 180 days.
03. **Warranty/Guarantee:** The material must be quoted with a minimum comprehensive Warranty / Guarantee period of **24 months** after the date of delivery and acceptance at final destination. After sales service and contact details of resource person for this should be mentioned.
04. **Delivery:** Unless otherwise stated delivery of goods at NIT Patna, will have to be maximum within **30 days** from the date of receipt of the Purchase Order. All aspects of safe delivery shall be the exclusive responsibility of the OEM / Bidder.
- 05. Printed conditions of supply of the firm, if any, will not be binding on us.**
06. **Late and delayed Tenders:** Late and delayed tender will not be considered. In case any unscheduled holiday occurs on prescribed closing/opening date the next working day shall be the prescribed date of closing/opening.
07. **Ground for Rejection of Tender:** The tenders are liable to be rejected if the fore going conditions are not complied with. The tender should be complete in all respects and duly signed wherever required. Incomplete and unsigned offer will not be accepted.
08. **Payment Terms:-** 100% payment against proforma invoice will be released after receiving of stores in good order and condition and successful installation and commissioning duly certified by the concern authority.
09. **TDS** as applicable will be deducted from bill.
10. **Entry Tax:** Entry tax, if applicable will be borne by us as applicable on FOR NITP value. The vendor may arrange Road Permit on their own and get it reimbursed from the Institute on production of valid document. Road permit once issued will not change / altered in any circumstances. If any alteration is required due to fault from vendor/OEM side the same will be debited to supplier's A/c
11. **Liquidated Damage:** If a firm accepts an order and fails to execute the order in full as per the terms and conditions stipulated therein, it will be open to this institute to recover liquidated damages from the firm at the rate of 1% per week of the order value subject to a maximum of 10% of the order value. It will also be open to this institute alternatively, to arrange procurement of the required stores from any other source at the risk and expense of the firm, which accepted the order but failed to execute the order according to stipulated agreed upon.
12. **Termination for default:** Default is said to have occurred:-

- (a) If the supplier fails to deliver any or all of the services within the time period(s) specified in the purchase order or any extension thereof granted by NIT Patna.
- (b) If the supplier fails to perform any other obligation(s) under the contract
- (c) If the vendor, in either of the above circumstances, does not take remedial steps within a period of **30 days** after receipt of the default notice from NIT Patna (or takes longer period in spite of what NIT Patna may authorize in writing), NIT Patna may terminate the contract / purchase order in completely or in part. In addition to above, NIT Patna may at its discretion also take the following actions: NIT Patna may procure, upon such terms and in such manner, as it deems appropriate, goods similar to the undelivered items/products and the defaulting supplier shall be liable to compensate NIT Patna for any extra expenditure involved towards goods and services to complete the scope of.

**13. Applicable Law:**

- (a) The contract shall be governed by the laws and procedures established by Govt. of India, within the framework of applicable legislation and enactment made from time to time concerning such commercial dealings/processing.
  - (b) All disputes are subject to exclusive jurisdiction of Competent Court and Forum in Patna, India only.
  - (c) Any dispute arising out of this purchase shall be referred to the Registrar NIT Patna, and if either of the parties hereto is dissatisfied with the decision, the dispute shall be referred to the decision of an Arbitrator, who should be acceptable to both the parties, to be appointed by the Director of the Institute. The decision of such Arbitrator shall be final and binding on both the parties.
14. The acceptance of the quotation will rest solely with the Registrar, NIT Patna, who in the interest of the Institute is not bound to accept the lowest quotation and reserves the right to himself to reject or partially accept any or all the quotations received without assigning any reasons.
15. Installation and training- The Company must provide free training and demonstration of equipment after installation at NIT Patna.
16. **Important:-** The Director may accept or reject any or all the bids in part or in full without assigning any reason and doesn't bind himself to accept the lower bid. The institute at its discretion may change the quantity / upgrade the criteria / drop any item or thereof at any time before placing the Purchase Order.

**Registrar**



**TENDER FORMAT FOR PRICE BID**

Ref No: NITP/Proc./19-20/24

Date: 28/01/2020

SI No.	Description of Item & Model	Quantity	Unit Price	Sales Tax	Total Price

Delivery Mode: F.O.R. Patna.

Total bid price should be inclusive of Sales Tax, F.O.R. NIT Patna for the above quoted items is ₹ .....

Date:

Place:

Signature:

\_\_\_\_\_

Name: \_\_\_\_\_

Business Address: \_\_\_\_\_

Email \_\_\_\_\_

Contact No: \_\_\_\_\_

Affix Rubber Stamp

**For Any Enquiry**

**Please**

**Contact:**

The

Registrar

NIT Patna

Email: registrar@nitp.ac.in



## Annexure – V

# NATIONAL INSTITUTE OF TECHNOLOGY PATNA

(An Institution of National Importance under MHRD, Govt. of India)

ASHOK RAJPATH, PATNA-800 005 (BIHAR)

### TECHNICAL BID (CHECK-LIST) - QUALIFYING CRITERIA

Sl. No.	Essential Document	Document attached (Yes/No)	Page No.
1	Registration/Recognition certificate of the firm from the Govt. Agency. Proof of address of the firm should also be attached.		
2	GST Registration Certificate		
3	Copy of PAN of FIRM / Bidder		
4	Details of the technical features of the offered Equipment vis-à-vis specification as per Annexure – I (a)		
5	Rates: Rates quoted should be on F.O.R., NIT Patna, on Door Delivery basis mentioning all taxes/break-up separately		
6	Details of nature and maximum period of Warranty offered by the OEM/Bidder		
7	Standard Technical literature on each of the items offered; the article on offer should conform to standard quality, specification and test of manufacturer		
8	Dealership certificate on the offered products from OEM in case of dealer/s		
9	List of reputed organizations/Institutions, where similar orders have been executed (copies of the purchase/work order will have to be enclosed). The bidders / OEM should attach a self-declaration stating that he is not banned / debarred from working with any Central Government / PSU / State Govt of India / Any other Govt. Agencies or any Institute of National / International importance		
10	Banker's details of tendering FIRM / Bidder		
11	Remarks		

Bidders should submit the above essential document. Any shortfall of document will leads to disqualification in technical evaluation. The financial bid will be opened to those bidders who qualify in technical evaluation.

(Signature of Tenderer)  
Name & Designation  
Place:  
Dated: