

**SARDAR PATEL UNIVERSITY, MANDI**  
**HIMACHAL PRADESH**



**Tender for Supply of “Electrochemical  
workstation with impedance spectroscopy system”  
to  
Sardar Patel University, Mandi, Himachal Pradesh**

S. No.	Contents	Page No.
(1)	Schedule of tender	03
(2)	Tender notice	04
(3)	Important notes to bidders	05
(4)	Terms and conditions of tender	06-10
(5)	Technical specifications	11
(6)	Annexure-A-1	12-13



Tender for supply of "Electrochemical  
workstation with impedance spectroscopy system"  
to  
Gardar Patel University, Mandi, Himachal Pradesh



## SARDAR PATEL UNIVERSITY, MANDI HIMACHAL PRADESH

### 1. Schedule of Tender

Tender document for the supply and installation of “Electrochemical workstation with impedance spectroscopy system” at Sardar Patel University, Mandi, Himachal Pradesh.

e-tenders are invited from the reputed Firms etc. having adequate experience for supplying of “**Electrochemical workstation with impedance spectroscopy system**” “Part A” as Technical Bids and “Part B” as Financial Bids. The details are as follows:

S. No.	Name of the Item	Specification	Qty	Amount of E.M.D (Rs.)	Tender Fee
1.	Electrochemical workstation with impedance spectroscopy system	As per specification document attached at annexure “A”	01	Rs.25,000/-	Rs.1,000/-

Tender Document upload (publish) date/time: 23/01/2023 upto 05.00 P.M..

Last Date of Submission of Tender: 02/02/2023 (up to 11:00 A.M.)

Date of opening of Tender (Technical Bid): 02/02/2022 at 11:30 A.M.

Type of Tender: Two Bid Systems.

Tender fee: Bidders should send tender fee in the shape of DD in favour of FINANCE OFFICER, SARDAR PATEL UNIVERSITY, MANDI, HIMACHAL PRADESH.

EMD: Bidders should be in the shape of DD/FDR/Bank Guarantee in favour of FINANCE OFFICER, SARDAR PATEL UNIVERSITY, MANDI, HIMACHAL PRADESH.

#### NOTE:

1. If the tender is not opened on the above date, due to unforeseen circumstances, then the next working day will be considered as tender opening date.
2. The bidders who fail to submit the required tender fee, if applicable and EMD, their techno financial bids will not be considered for opening.
3. Bidder or their authorized representatives may attend the opening of the tender.

**SARDAR PATEL UNIVERSITY,  
MANDI, HIMACHAL PRADESH**

**e-TENDER NOTICE**

e-Tender Notice for supply of “**Electrochemical workstation with impedance spectroscopy system**” to Sardar Patel University, Mandi, Himachal Pradesh

SARDAR PATEL UNIVERSITY, MANDI, HIMACHAL PRADESH, invites **e-tenders** as a “**2 Bid System**” from reputed Firms for the supply of “**Electrochemical workstation with impedance spectroscopy system**” to SARDAR PATEL UNIVERSITY, MANDI, HIMACHAL PRADESH, in two parts, “Part A” (Technical Bid) and “Part B” (Financial Bid).

**Tender Document upload (publish) date/time: 23/01/2023 upto 05.00 P.M..**

**Last Date of Submission of Tender: 02/02/2023 (up to 11:00 A.M.)**

**Date of opening of Tender (Technical Bid): 02/02/2023 at 11:30 A.M.**

The detailed terms & conditions, name of items etc. can also be downloaded from the website [www.spumandi.ac.in](http://www.spumandi.ac.in) and [www.hptenders.gov.in](http://www.hptenders.gov.in)

Deputy Controller (F&A)

### Important Notes to the Bidder:

1. SARDAR PATEL UNIVERSITY, MANDI, HIMACHAL PRADESH invites **e-tenders** under "2 Bid system" for the supply & installation of "Electrochemical workstation with impedance spectroscopy system" to SARDAR PATEL UNIVERSITY, MANDI, HIMACHAL PRADESH as per the specifications given in the "**Annexure A-1**".
2. Tender document can be downloaded from the University website [www.spumandi.ac.in](http://www.spumandi.ac.in) and [www.hptenders.gov.in](http://www.hptenders.gov.in)
3. The bidders are requested to read the tender document carefully and ensure all the compliance with instructions herein. Non-compliance of the instructions contained in this document may disqualify the bidders from the tender process.
4. The prescribed tender documents should be uploaded at **hp-e-tender** portal and also submitted in one sealed envelope duly super scribed with "**Tender for supply** "Electrochemical workstation with impedance spectroscopy system" to **SARDAR PATEL UNIVERSITY, MANDI, HIMACHAL PRADESH**. This sealed envelope should contain **two sealed envelopes** marked A, & B as prescribed as under:
  - a) Envelope A containing appropriate Tender Fee & Earnest Money Deposit (EMD)
  - b) Envelop B containing the Technical Bid along with the supporting documents. (See Terms & Conditions for more details)
5. **Financial Bid:- Rate should be quoted in online mode.**
6. The complete tender document is to be signed with seal & is to be placed in the separate envelope along with the necessary required documents.
7. Any clarification regarding tender specification before submission of tender document can be discussed with the Officer In charge (Purchase) on contact no. 9418195004
8. Please Note that the tender document is subjected to verification with the original document, and if any discrepancy is found, the tender would be rejected..

**SARDAR PATEL UNIVERSITY, MANDI,  
HIMACHAL PRADESH**

(To be filled by the Vendor/ Bidder)

1. Name of the Vendor:
2. Full Address of the Vendor:
3. Telephone/ Mobile No.
4. Fax. No. (If any) or email address
5. Registration No. of Firm
6. PAN
7. GST Registration No.
8. Details of the D.D./FDR/Bank Guarantee

**Tender Fee (Non-Refundable) :** D.D. No. \_\_\_\_\_ dated \_\_\_\_\_

**E.M.D Amount (Refundable):**

D.D. No./ FDR/ Bank Guarantee \_\_\_\_\_ dated \_\_\_\_\_

Seal and signature of the bidder/Vendor

## (2) TERMS AND CONDITIONS OF THE TENDER

1. The duly constituted committee appointed by the competent authority of SARDAR PATEL UNIVERSITY, MANDI, HIMACHAL PRADESH, reserves the right to select or reject the tenders.
2. Incomplete tenders, amendments and additions to tender after opening are liable to be ignored and rejected.
3. The Bid shall be treated as a 2 Bid System. The Technical Bid will be considered for applicants who's Tender Fee, if applicable and Earnest Money Deposit (EMD) is found in order. Financial Bid shall be opened for those bidders who have qualified in Technical Evaluation.
4. **Changes/amendment:** At any time prior to the deadline for submission of tender, the University may amend the tender documents issuing by addendum/corrigendum. The University shall have the right at any time, by written notice, in the form of an amendment order, to make any changes, if deems necessary, including, but not limited to, changes in specifications, design, delivery, testing methods, packing or destination.
5. **Bid Validity-** Bids should be valid for a period of 180 days from the date of opening of financial bid.
6. **Withdrawal of bids:** No bidder will be allowed to withdraw its bid in the interval between the deadline of submission of bids and expiration of period of bid validity. Withdrawal of bid during this period will result in forfeiture of the bidder's bid security (EMD) and other sanctions.
7. **OEM/Authorized Dealer/agents of Supplier:** when a firm sends quotation for an item manufactured by some different company, the firm is also required to attach, in its bid, the manufacturer's authorization certificate and also manufacturer's confirmation of extending the required warranty for that product. In cases where the manufacturer has itself submitted the bid, the bids of its authorized dealer will not be considered and EMD will be returned.
8. **Bid Security:** Bid Security should remain valid for a period of 45 (Forty Five) days beyond the final bid validity period. The Bid Security can be submitted in the form of an account payee demand draft, fixed deposit receipt, or banker's cheque. The MSEs are provided tender documents free of cost and are exempted from payment of earnest money, subject

to furnishing of relevant valid certificate for claiming exemption. A bidder's Bid Security will be forfeited if the bidder withdraws or amends its/his tender or impairs or derogates from the tender in any respect within the period of validity of the tender or if the successful bidder fails to furnish the required Performance Security within the specified period. Bid securities of the unsuccessful bidders should be returned to them at the earliest after expiry of the final bid validity period and latest by the 30th day after the award of the contract. Bid Security should be refunded to the successful bidder on receipt of a performance security.

**9. Performance Security:** On receipt of notification of award from the University, the successful Bidder within 7(Seven) days shall furnish the performance security at 5% of the cost of the material/equipement ordered in the form of DD/FDR in favor of The SARDAR PATEL UNIVERSITY, MANDI, HIMACHAL PRADESH or in the form of Bank Guarantee issued/confirmed from any of commercial bank in India in an acceptable form. Performance security should remain valid for a period of 60 days beyond the date of completion of all contractual obligation of the supplier, including warranty obligations. The Performance Security will be forfeited and credited to the University account in the event of a breach of contract by the contractor. It will be refunded to the contractor without interest, after he duly performs and completes the contract in all respects but not later than 60(sixty) days of completion of all such obligations including the warranty under the contract. Failure of the successful bidder to submit the performance security shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security, in which event the University may make the award to the next lowest evaluated bidder on same rate or call for new bids.

**10. Prices and Taxes:** Prices quoted should be firm and shall remain firm until required deliveries have been completed unless otherwise expressly agreed to in writing by both the parties

**11. Term of Payment:-** Payment shall be released on successful/ satisfactorily installation of the statue.

**12. TDS on account of Income Tax and GST will be made as per rule.**

**13. Selection of the bidder:** For the purpose of selection of the bidder, a two- stage bidding process will be followed. The response to the tender should be submitted in two parts viz. Technical Bid & Commercial Bid.



a. **Technical Bid:** Technical bid should contain information regarding the company/firm registration details, authorization letter, clientele list (List of Users), performance certificate from clients, self-declaration for not black listed, business turnover, experience and other details of the firm to judge the suitability of the bidder. Bidder must ensure the following conditions while going for the bidding:

I. **SPECIFICATIONS:** Specifications are basic essence of the product/contract. It must be ensured that the offers must be strictly as per our specifications mentioned at Annexure-A at technical specification section.

II. Signed & Stamped compliance sheet of the technical specification of the offered statue must be enclosed with the technical bid in the prescribed format.

III. Average Annual turnover of the bidder, for the last three successive years should be **Rs.1 Crore** or more and duly certified by the chartered accountants.

IV. Self-attested photocopy of annual turnover, IT clearance Certificate, audited balance sheet, etc. for last three years.

V. The bidder/OEM self-declaration stating that he/she is not banned/debarred or black listed by any Central/State Govt. of India/PSU/Organizations/Institutes in India or abroad in prescribed format.

b. **Short listing of vendors:** University will shortlist technically qualifying vendors and the financial bid of only these vendors will be opened. University reserves the right to decide whether the items being quoted are as per the requirement of the University and are of standard/leading brands in the market. University reserves the right to decide which offer best suits the requirement of the university. Further, after opening financial bids of the short listed tenders, if there is a discrepancy between word and figure,

the amount indicated in words will prevail.

c. **Price Bid/ Financial Bid:** Financial bid should contain price of the material required to be supplied as per Price Schedule "A1" and should be submitted in online mode only.

**14. Installation and Commissioning:** Free of cost at University. The OEM must ensure timely installation of the complete unit with necessary support to the indenters, as per details and lists to be made available by the University.

**15. Conditional Offer** will not be accepted.

**16. Cancellations of tender:** The University reserves Right to Accept any Bid and to Reject any Or all Bids: The Purchaser also reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Purchaser's action.

**17. Warranty:-**

I. Three year onsite comprehensive warranty. During the warranty period, replacement of any part or rectification of defects of works will be free of cost.

II. Any deviation in the material and the specifications from the accepted terms may liable to be rejected and the bidders need to supply all the goods in the specified form to the satisfaction / specifications specified in the order /contract and demonstrate at their own cost.

**18. Site preparation:** The supplier shall inform the University about the site preparation, if any, needed for installation, immediately after receipt of the supply order.

**Seal & signature of vendor**

(3)

**TECHNICAL SPECIFICATIONS SECTION**

*Technical Specifications: The tenderer shall meet the respective minimum technical specifications for the item that is being bid for. Any additional features or specifications in excess of these minimum specifications will be appreciated. A set of desired additional features are mentioned along with the minimum technical specifications, wherever appropriate.*

I / We the undersigned am / are ready to supply & install the following instruments along with all other accessories complete as mentioned below with accepting the terms and conditions which are enclosed with this order form and quote for the same

The technical specifications for the Instrument are being placed under this tender have been detailed in the "Annexure A-1" ..

S. No.	Name of item	Specifications	Quantity
1.	Electrochemical workstation with impedance spectroscopy system	As per specification document attached	01

*Jatin Singh*

### Specifications for Electrochemical Workstation with Impedance Spectroscopy system

1. The specifications should be as follow:

No. of channels required:

- One or more Channel with EIS Facility
- Cell Connection: 2, 3, 4 and 5 electrode and ground or more for channel
- Compliance voltage: 20 V or better for channel
- Applied Voltage:  $\pm 10$  V or better for channel
- Maximum Output Current:  $\pm 1$  A or better at  $\pm 10$  V for channel
- Current Ranges:  $\pm 10$   $\mu$ A to 1 A or better
- Accuracy of applied and measured current:  $\pm 0.1$  % of Full scale range or better
- Accuracy of applied and measured Voltage: 0.1% of Full scan range or better
- Potentiostat Rise/fall Time:  $< 2$   $\mu$ s or better for both channels

Electrochemical Impedance Spectroscopy:

- channel should have EIS measurement
- Frequency range: 10  $\mu$ Hz to 1 MHz or better
- Impedance accuracy of 1%
- Input Impedance: 1 T $\Omega$  or better
- Bandwidth of electrometer: 1 MHz or better
- Input bias current: less than 10 pA or better
- Acquisition speed: 200,000 samples/second or better for both channels
- Min acquisition time should be around 200-400  $\mu$ s for both channels
- Interface: Ethernet LAN or USB

*PC & Printer*

Calibration of Channels: Calibration of potentiostat channel should be available on-site and calibration reports must be printed as on when required.

Safety limits in software on the current and voltage Max and Min values to avoid hazards. Should have a possibility to resume an experiment after a power cut and to merge the files before and after the power cut. Possibility to Record/Measure and control EWE (potential difference between Working and reference) and ECE (potential difference between Counter and Reference) simultaneously in one experiment and in real time

Data Acquisition Control and Software:

1. Multigraph window or mutiwindow capable of displaying up to 5 graphs at a time
2. Customize variables graph plot for each axis
3. Customized data acquisition speed
4. Fundamental Electrochmeistry – OCV, CV, LSV, Amperometry, Galvanostatic Charge/Discharge, Batteries, Fuel cell/photovoltaic testing Techniques
5. GEIS, PEIS -Electrochemical Impedance Spectroscopy Technique
6. Corrosion software including LPR, Tafel etc.
7. Pulse software including DPV, NPV, RNPV, SWV etc
8. Equivalent EIS fitting circuit software from the same company
9. EIS Quality indicator to control the total harmonic distortion should be needed.
10. Graphic Representation of Equivalent Circuit with user selectable circuit elements and their values in the circuit
11. Impedance fitting tool with battery diffusion elements available (restricted diffusion, restricted modified diffusion, restricted linear diffusion)
12. The impedance fitting tool should have at least 3 different fitting algorithms

- 13. Modify on Fly should be available to update experimental setting parameters on current running experiment without pausing/stopping
- 14. EIS measurements simultaneously on the working and on the counter electrodes
- 15. RDE is needed. The RDE Device has to display both target and actual rates of rotation
- 16. The measured rotation speed should be displayed on a five-digit LCD screen
- 17. RDE should have below requirement:

Rotational range/rpm	100 to 10 000 (RRDE: 9000)
Accuracy/rpm	±1 over the whole rotational range
Runout/mm	<0.1
Minimum control step increment/rpm	10
Measurement resolution/rpm	1
Aux I/O for external control/measurement	Yes
Operating temperature/°C	10 to 40

**Warranty : Minimum one year .**

- System should have following accessories:
- 3 mm diameter Glassy Carbon disk electrode (M6 thread) with PEEK body
  - 2 mm diameter 99.9% Platinum disk electrode (M6 thread) with PEEK body
  - RE-1B Reference Electrode (Ag/AgCl – length: 80 mm – OD: 6 mm)
  - Platinum counter electrode (5 cm - wire diameter 0.5 mm)
  - DB9-8 BNC cable for auxiliary connection

*Jatinder Singh*