

**DR. S.S. BHATNAGAR UNIVERSITY INSTITUTE OF
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**TENDER DOCUMENT FOR THE PURCHASE OF
Electrochemical Workstation**

Last Date for Receipt of Tender: **30 March, 2017 4:00 PM**

DATE & TIME OF OPENING: **31st March, 2017, 11:00 AM**

PRICE Rs. 1000/-

SECTION – I

PROCEDURE FOR SUBMISSION OF BIDS

1. There will be **Two bid system** for this Tender: *Techno-Commercial bid* and *Financial bid*
2. The Techno-Commercial Bid of the Tender should be covered in one sealed cover superscribing the words “Techno-Commercial Bid”.

Likewise, the Financial Bid should also be covered in a **separate** sealed cover superscribing the words “Financial Bid”.

The two documents viz., Techno-Commercial bid and Financial bid covers prepared as above should be enclosed in a single sealed cover marked as under:

Tender for the supply of **Electrochemical Workstation**

Due on ...30th March, 2017 (last date for submission).

Name & Address of the Tenderer.....

Note: Price should not be indicated in the Techno-Commercial bid otherwise the Tender will be rejected

3. Tenders received after the due date will not be accepted. If the last date for submission of Tender falls on any declared holiday in the University, the next working day will be considered as the last date for the same.
4. The bids prepared by the Tenderer and all correspondence and documents relating to the bids, shall be written in English language
5. The contract for the supply of the items is non-transferable.
6. Tender/Offer should be type written, other wise the same will be rejected
7. Each page of the tender document should be signed by the authorized signatory.
8. Each offer should be complete in all respects.
9. Telegraphic/electronic/conditional offers will not be accepted.

SECTION – II
TERMS AND CONDITIONS

1. **Opening of bids:** Techno-Commercial bids will be opened by the Committee after the closing date and studied. The Tenderers will be invited for presentation and clarifications if needed. Financial bids of the Tenderers complying with the prescribed Techno-commercial specifications will be opened by the Committee. Tenderers or their authorized agents may be present if they so desire during opening of the Tenders.
2. **Rejection of bids:** The Committee reserves the right to reject any or all offers without assigning any reason.
3. **EMD:** The Tender bid should accompany an EMD of minimum 50,000/-. The EMD should be made by means of an A/c payee DD in favour of the *Registrar, Panjab University, Chandigarh – 160014* payable at Chandigarh. No interest is payable on EMD.
4. **Refund of EMD:** The EMD will be returned to unsuccessful Tenderer only after the Tenders are finalized. In case of successful Tenderer, it will be retained till the successful and complete installation of the equipment.
5. **CIF value and comparison of Financial bids:** FOR value upto SSBUI CET, Panjab University, Chandigarh (*shipment by air upto Delhi and insured up to the installation site*) should be quoted and will be considered for comparison of bids. Bids quoted in foreign currency will be converted into Indian Currency at the exchange rate applicable on the day of opening of the financial bids for comparison purposes.
6. **Warranty Period:** The warranty period should be *one year (with spares)* from the date of installation with satisfactory performance as per specifications.
7. **PBG:** Tenderer selected for supply of equipment, will have to provide Performance Bank Guarantee (PBG) on any *scheduled bank situated in India, equivalent to 10 percent of the cost of the equipment* which should be valid until the expiry of the Warranty period. The PBG will be provided by the Company along with the letter of acceptance of the order by the Principals. In case of import, LC will be opened in favour of the Principals only after obtaining the PBG.
8. **Terms of Payment:**
 - a. In case of import, LC will be opened for the 100% value of the equipment, 90% of the amount will be released after the shipment and remaining 10% after the installation of the equipment.
 - b. In case of Indian supplier, 90% payment will be released on dispatch of full equipment and 10% will be released on satisfactory installation of equipment.
9. **Delivery period:** Delivery should be made within *4 to 6 weeks* from confirmed order.

10. **Delayed delivery:** If the delivery is not made within the due date for any reason, the Committee will have the right to impose penalty as under::
- i First extension for one month or part thereof @ 2%.
 - ii Second extension for an additional month or part thereof @ 3%

Non delivery beyond extended period: If the Tenderer fails to execute the order within the second extension mentioned above or mutually agreed time frame, the order will be cancelled and EMD forfeited by the Dept. He will also be liable for all damages imposed by SSBUICT for non supply of equipment including the liability to pay the difference between the price accepted by him and those ultimately paid by the SSBUICT for the equipment, Such damages will be assessed by the Committee for the purchase of **Electrochemical Workstation.**

11. Increased statutory levies and duties above the rate quoted in the offer will not be an excuse for the Tenderer to delay the supply beyond the date specified in the Tender.
12. **Validity of rates:** Rates quoted should be valid for at least *4 months* from the closing date of the tenders.
13. **Consistent pricing:** The rates quoted for the Equipments by the supplier shall in no case exceed the lowest price at which the supplier of this Equipments of identical description made to any other person/organization/Institution during the above said period and should attach an undertaking in this regard
14. **Installation requirements:** The Supplier will clearly mention installation requirements on our part in the *Techno-Commercial bid.*
15. **Installation time:** The Company must install the equipment *within a period of one month* of the date of delivery of the equipment at *Dr. S.S.Bhatnagar University Institute of Chemical Engineering & Technology, Chandigarh.*
16. **Free Installation:** The equipment should be installed and tested to the specifications *free of cost.*
17. **Supporting Equipment:** The Tenderer will provide all requisite supporting equipments like isolation transformer, step down transformer, chiller *if needed.* We need the complete installed system.
18. Tenderers are advised to study all technical aspects and terms & Conditions, of the Tender documents. Submission of Tender shall be deemed to have been done after careful study and examination of the Tender Document with understanding of its implications.
19. **Only Manufacturers or Authorized dealers to bid:** The offering firm should clearly mention whether they are the manufacturer or authorized agent/dealer of the

manufacturer. In case of agent for overseas manufacturer, a letter of authorization from the manufacturer should be submitted along with the offer. The Tenderer can also enclose the rates on the letterhead of the manufacturer if he has been authorized to do so by the manufacturer.

20. **Descriptive literature:** A set of specifications, description and illustrated literature of the equipment and related peripherals *should accompany the Techno-Commercial bid.*
21. **User and Service Manuals:** A set of User's manuals and Service manuals of the main instrument, attachments and related equipment should be supplied with the equipment
22. **Equipment must be new:** The Tenderer must ensure that the equipment being offered is a new one and not refurbished or repaired one.
23. **Defective Equipment:** If any of the equipment supplied by the Tenderer is found to be substandard, refurbished, unmerchantable or not in accordance with the description /specification or otherwise faulty, the committee will have the right to reject the equipment or its part. The prices of such equipment shall be refunded by the Tenderer with 18% interest if such payments for such equipment has already been made to him.
24. All damaged or unapproved goods shall be returned at suppliers cost and risk and the incidental expenses incurred thereon shall be recovered from the supplier. Defective part in equipment, if found before installation and/or during warranty period, shall be replaced within 30 days on receipt of the intimation from this office at the cost and risk of supplier including all other charges.
25. **Damage during transit:** In case of any mishappening/damage to equipment and supplies during the carriage of supplies from the origin of equipment to the installation site, the supplier has to replace it with new equipment/supplies immediately at his own risk. Supplier will settle his claim with the insurance company as per his convenience. The *Dr. S.S.Bhatnagar University Institute of Chemical Engineering & Technology* will not be liable to any type of losses in any form.
26. **Legal jurisdiction:** Any dispute in this regard of any term of the offer and on the supply of equipment is subject to *Chandigarh jurisdiction* only.
27. **Training:** one week training on equipment usage & maintenance, should be provided free of charge at the premises of *Dr. S.S.Bhatnagar University Institute of Chemical Engineering & Technology, Panjab University, Chandigarh -160 014.*
28. **Availability of Spares:** The Tenderer must assure the availability of spares for servicing of equipment *for at least 10 years.* Supplier should give an undertaking that spares parts will be supplied within the specified periods as and when ordered.
29. **SSB UICET Infrastructure:** SSB UICET will provide required air conditioned space, *single phase power supply* with required electricity outlets.

30. **Clearance:** In case of import, the Principals will do all types of clearance work to deliver the equipment at the site of installation. Department will provide all types of documentary support including Customs Duty Clearance. Principals will themselves have to procure any requisite permission from the Govt. of country of origin of equipment.
31. **Bank Charges:** Bank charges in India will be borne by the Panjab University and Bank charges abroad will be borne by the suppliers.
32. **Similar Models installed:** The Tenderer must mention in the *Techno-Commercial bid* the similar model of equipment installed in India *during the last three years* and the *addresses of contact persons at these places*.
33. **Application Specialist:** The Tenderer should mention in the *Techno-Commercial bid* the availability and *names* of *Application Specialist* and *Service Engineers* in the nearest regional office.
34. **Response Time:** The Tenderer should mention in the *Techno-Commercial bid* the response time for attending to a complaint about the equipment.
35. **Change of Indian Representatives:** In case of imported equipment, the original manufacturer/Principals should give an undertaking that the aforementioned warranty and availability of spares clauses will be valid even in the case of change of their representatives in India.

Electrochemical Workstation

Specifications:

Compliance voltage: ± 20 V or better at ± 400 mA

Maximum Output Current: ± 400 mA expandable up to 8A with booster at ± 20 V (Booster should be quoted for same in option)

Output Voltage Range: ± 10 V

Current Ranges: smallest current range: ± 10 nA to current range 100 mA in different ranges

Measured current resolution: 40 fA on 10 nA full scale range

Potentiostat Rise/fall Time: 350 ns or lower

Interface: USB/ethernet interface for connection with PC

Input bias current: < 1 pA

Input Impedance of electrometer: $>100G\Omega$

EIS module

Hardware and software for EIS measurements in potentiostatic and galvanostatic control, over frequency range of 10 μ Hz to 1 MHz. It should be possible to perform EIS measurements over entire frequency range from 10 μ Hz to 1 MHz upto 400 mA currents and upto 8 A with booster, Frequency range in 10 μ Hz - 1 MHz combination with potentiostat galvanostat. Frequency resolution 0.003%, Input range ± 10 V. Data presentation: Nyquist, Bode, Admittance, Dielectric, Mott-Schottky, Data analysis: Fit and Simulation, Find circle, Element subtraction. Impedance spectroscopy software to find L, C, R, tan delta parameters.

Apart from the classical EIS, it should be possible to modulate other outside signals such as rotation speed of a rotating disk electrode or the intensity of a light source to perform electrohydrodynamics or photo-modulated impedance spectroscopy.

Electrochemistry Cell: It should consist of the following:

50 mL Glass cell 2 no, disc working electrodes with active area diameter 2 mm of GC, 1no, Pt wire Counter electrode 1 mm dia 40 mm length, 1 no, Ag/AgCl reference electrode double junction type for use in Aqueous and Non-Aqueous media 1 no each, Suitable Lid for the cell and purge tube with valve.

Electrochemical Software:

Software should have facility to record additional signal viz EQCM, bi-potentiostat etc. Import/export ASCII. Ready-to-use Vis & Generic interface for .Net applications should be included. It should have facility to display up to 4 plots simultaneously. The software should support following basic electrochemical measurements: Cyclic Voltammetry, Sampled DC Voltammetry. Tafel Plots, Differential Pulse Voltammetry, Square Wave Voltammetry. Electrochemical methods like Chrono-Amperometry, Chrono-Coulometry & Chrono-Potentiometry. It should have corrosion software including LPR, cyclic polarization, critical potential, tafel etc. Solar Photovoltaic software, Battery/Fuel cell software, Equivalent circuit fitting software. Battery/Super capacitor testing software including Impedance measurement facility, constant load discharge, constant current constant power etc. Voltammetry software (including CV, LSV etc.)

Polarography instrument for the determination of transition metals based on Voltammetry principal (wide-band low-noise amplifier & potentiostat and galvanostat

Voltage Range: ± 25 V, Sweep potential range: ± 5 V, Current Range: ± 224 mA, Resolution of measured current (in the smallest measuring range): 6 fA

Multimode Electrode System comprising of three user selectable modes namely SMDE, HMDE and DME with choice of nine drop sizes and requiring minimum amount of mercury. Flexible & comprehensive windows based software is provided with facilities for fully quantitative or qualitative analysis & following measurement techniques:

Differential Pulse (DP), Square-wave (SQW) .Cyclic Voltammetry (CVS), CP (Chronopotentiometry, galvanostatic and for measuring the open-circuit potential).

Measuring cell for higher volume of samples (10 – 70mL) Stirrer with the speed setting of 100 – 3000 revolution per minute (Speed Stability $\pm 5\%$)

Software -The Software should provide facilities for RDE control, Electrochemical Methods like differential Pulse voltammetry {DPS}, Square Wave voltammetry. The software provides automatic signal evaluation, versatile baseline correction (linear, exponential or polynomial), full graphics display of voltammograms and calibration curves, data storage and recalculation on single sample result or batch of samples, unlimited methods and data storage, programme sequences for cleaning of rotating disc electrode. The software also provides a special mode for rapid methods development based by scanning and analysis of voltammograms. It should extend facility of calibration with manual or automatic standards addition. All data processing and reporting have full GLP compliance.

Computer & Printer:

Compatible branded PC(i5, 8GB RAM, 2 GB Graphics, 1 TB HDD, 19" LED), Printer 2No (duplex, colored, tankjet, network ready), 2KVA Online UPS with one hour back up 2 No, Nitrogen Cylinder with regulator

Optional Current Booster: Current booster to enhance the maximum current of the system. Specifications: Max Compliance Voltage: ± 20 Volts, Maximum Output Potential: ± 10 Volts, Maximum Current: ± 8 Amp, Accuracy: $\pm 0.5\%$, Operation Mode: Potentiostatic and Galvanostatic. All cables should be noiseless with adequate length.

WARRANTY: Minimum 1 year standard warranty followed by 1 more year non-comprehensive warranty is required.