**BHARATHIAR UNIVERSITY : COIMBATORE – 641 046**

**Re-TENDER NOTICE**

**No.BU/RUSA 2.0/2022/R3-R6/BCTRC/539-2 Date: 29.04.2022**

Sealed Tenders are invited by the Registrar, Bharathiar University, Coimbatore 641 046 **upto 3.00 P.M on 03.06.2022 (Separate Technical bid and Commercial bid)** from the reputed ISO Certified Firms for the supply of **Electrochemical and photochemical workstation with following accessories in “Separate Covers”** to the **RUSA Lab** underRUSA 2.0 BCTRC Project**.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl.**  **No.** | **Equipment Description** | | **TENDER COST** | **EMD COST** |
| **1** | **Electrochemical workstation RDE setup and Electrodes & Electrochemical cells** | | **Rs.7,080/-** | **Rs.28,500/-** |
| **2** | **Electrochemical workstation Bipotentiostat compatible to EQCM and Spectroelectrochemistry Setup** | | **Rs.7,080/-** | **Rs.25,000/-** |
| **LAST DATE FOR SUBMISSION OF TENDERS** | | **03.06.2022 up to 3.00P.M.** | | |
| **TECHNICAL BIDS OPENING DATE** | | **03.06.2022 at 4.00 P.M.** | | |

The Tender documents and details of terms & conditions can be downloaded from our website [www.b-u.ac.in](http://www.b-u.ac.in) **from 04.05.2022 to 03.06.2022.**

**REGISTRAR i/c**

**BHARATHIAR UNIVERSITY**

**BHARATHIAR UNIVERSITY – COIMBATORE 641 046.**

**TENDER TERMS AND CONDITIONS FOR THE SUPPLY AND INSTALLATION OF 1No. of ELECTROCHEMICAL AND PHOTOCHEMICAL WORKSTATION WITH following ACCESSORIES in “Separate Covers”**to the **RUSA LAB** under **RUSA 2.0 BCTRC Project**

1. Sealed Tenders will be received by the **Registrar, Bharathiar University from the ISO Certified Firms** up to **3.00 p.m. on 03.06.2022**  in two bids (Technical & Commercial) for the **supply and installation of 1No. of Electrochemical and photochemical workstation with following accessories in “Separate Covers”** to the **RUSA LAB** under **RUSA 2.0 BCTRC Project as specified in the schedule.**
2. Tender should be addressed to the Registrar, Bharathiar University and should be only in sealed covers by Registered post or in person. Tenders received in ordinary covers without seal will not be considered.
3. The tender shall be submitted in a sealed cover with **Ref. No. and superscribed** as “Tender for the supply and installation of the **1No. of Electrochemical and photochemical workstation with following accessories in “Separate Covers”** for the **RUSA Lab**, under RUSA2.0 BCTRC Project. **Due on 03.06.2022** with the **tenderers full address and contact number (MOBILE Number).** **Separate sealed covers should be used for technical and price bid and please be superscribed on the cover**. The covers received without such superscription will be rejected summarily.
4. **Technical Bids will be opened on 03.06.2022 at 4.00 p.m. by the Registrar or his/her nominee in the presence of the tenderers** or their representatives may be present at the time of opening. The representatives of the tendering firms who attends during opening of the tenders must produce their identification proof and authorization letter from the tendering firms.

**If the tenderers are unable to participate at the time of tender opening kindly be informed through mail** [**rusabharathiar@gmail.com**](mailto:rusabharathiar@gmail.com)

1. **Price bids will be opened after technical evaluation of bids which will be informed later.**
2. **Faxed Bids are liable to be rejected**
3. The tender shall be accompanied with the requisite following **Tender Cost** **and EMD Cost** in the form of **DD drawn in one of the Nationalized Banks** in the name of **“Registrar, Bharathiar University”** payable at Coimbatore. **Bank Guarantees or Cheques will not be accepted.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl.**  **No.** | **Equipment Description** | | **TENDER COST** | **EMD COST** |
| **1** | **Electrochemical workstation RDE setup and Electrodes & Electrochemical cells** | | **Rs.7,080/-** | **Rs.28,500/-** |
| **2** | **Electrochemical workstation Bipotentiostat compatible to EQCM and Spectroelectrochemistry Setup** | | **Rs.7,080/-** | **Rs.25,000/-** |
| **LAST DATE FOR SUBMISSION OF TENDERS** | | **03.06.2022 up to 3.00P.M.** | | |
| **TECHNICAL BIDS OPENING DATE** | | **03.06.2022 at 4.00 P.M.** | | |

1. Tenders without EMD shall be summarily rejected. EMD will not carry any interest. If tenderers specifically exempted by the Government from the payment of earnest money deposit /tender cost, necessary certificate (NSIC & MSME) in respect of the item for which the registration certificate has been obtained. Copy of the Registration Certificate alongwith the terms and conditions including validity time period should be enclosed and highlighted to considered the exemption. Offers submitted without proper Registration Certificate shall be rejected summarily.
2. The tenderer should meet the eligibility criteria laid down in the tender documents and the tender document should be duly signed in each page.

The tender should be substantially responsive to the technical specifications and commercial conditions set out in the tender documents.

1. Tenders which are found not to be substantially responsive under any of the above clauses shall be rejected for further scrutiny.
2. **The University is not responsible for any postal delay in receipt of tender. Delayed/Late bids will not be accepted at any circumstances. Any tender received after the due date will be returned to the tenderer.**
3. The tender shall be valid for a **maximum period of 180 days** from the date of opening of the tender in acceptance. If the tender validity is less than **180 days** the tender will be rejected as non-responsive tender.
4. Tenderer should not withdraw his tender after the tenders are opened. In case the tender is withdrawn after it is opened, the EMD will be forfeited and black listed.
5. The EMD of the unsuccessful tenders will be refunded after the tenders are disposed off by the competent authority.
6. **The technical bids should fulfill the following conditions:**
7. The brief description of the equipment with make and model should be mentioned.
8. A tenderer should be a manufacturer possessing a valid manufacturing license from the competent authority for manufacturing the items. (Documentary evidence to be furnished)
9. Manufacturer (OEM) / Authorized Dealer / Distributor / Supplier can also bid with authorization letter from the manufacturer.
10. Manufacturer should not authorize more than one dealer / distributor for participating in the tender.
11. ISO Certificate
12. Company Profile
13. Copy of the GST Registration Certificate and PAN
14. Average turnover in the last 3years & IT Return.
15. CE certification or any other relevant certification must be encloses
16. The tenderer should not have been blacklisted or debarred from participating in tenders by any Central/State Government agencies or autonomous bodies or universities / institutions. (An undertaking to this effect should be furnished)
17. Thebidders who fulfil the eligibility criteria will be considered for technical evaluation. The price bid of the technically qualified bidders will be opened for negotiation.
18. **PRICE BID :** Price shall be quoted as per the format given in Appendix-.

The tenderer shall not carry out any alteration in the format prescribed for Price Bid. The tenderer shall not enclose any other document or statement that will influence the price.In such an event,the tender inviting authority shall summarily reject the tender.

**Imported** :The tenderer shall quote the price in all Currencies for CIP Chennai / **FOR Coimbatore** up to the destination and should be indicated clearly both in words and figures.

I**ndigenous**: The tenderer shall quote the basic price plus GST, Packaging and Transportation. No separate charges for warranty period will be considered.

1. The rate should be quoted for item with specification and model if applicable and should be indicated clearly both words and figures. Any scoring or overwriting in the price bid should be attested by the bidder with full signature. The rate quoted should be firm and should not be subject to any variation clauses.
2. The rate should include excise duty, surcharge, sales tax, freight, insurance, delivery, installation and commissioning of the above work and such other levies that may be applicable. The bidder should clearly mentioned the details of their tax, customs and other charges, etc.
3. If the equipment is imported, Customs Duty, Clearance, delivery, transportation, Insurance charges should be mentioned clearly. The firm has to arrange the authorised customs clearing agent on behalf of University for customs clearance.
4. University shall not pay any increase in duties, taxes and surcharges on account of any revision by the Government at the time of supply and installation.
5. Supply shall be as per the specifications mentioned in the Appendix and accordingly at the time of supply.
6. The tender form (Annexure I & II) should be completed in all respects. Wherever the information is not relevant to your bid, the space should be appropriately filled with ‘NA or NIL’. No space shall be left blank. All pages of the tender documents should be enclosed otherwise the tenderers are likely to be rejected.
7. The commissioning and installation should be getting completed within the stipulated period mentioned in the supply order. If the supply is not made within the period, the supply order will be cancelled and the EMD & Security deposit will be forfeited.
8. Successful tenderer has to remit the **Security Deposit 6% to 6.5%** accordingly to the order value in the form of **Demand Draft drawn in favour of “The Registrar” Bharathiar University** payable at Coimbatore. The EMD of the Successful Bidder will be adjusted towards Security Deposit (SD). Security Deposit will be refunded at the end of warranty period as per the purchase order subject to the satisfaction of the University.
9. A**greement**:- Successful tenderer shall execute an agreement for the fulfilment of contract in Rs.100.00 Non judicial stamp paper of Tamil Nadu Government or any State Government. If failed to execute the agreement, the EMD will be forfeited. The conditions stipulated in the form should be strictly adhered to and violation of any of the conditions will entail termination of the contract without prejudice to be right of the University and to recover any consequential loss from the successful tenderer.
10. The materials are to be guaranteed for the warranty period mentioned as per the given specifications from the date of installation and commissioning against manufacturing defect and bad workmanship. The period of warranty and the Annual Maintenance Contract (AMC) are as per the given specifications and the specified period shall commence from the date of installation.
11. **PAYMENT**

**Imported:** 100% payment will be made through Irrevocable Letter of Credit (LC) in favour of the Principal Supplier, Foreign Demand Draft (or) Currency wire transfer after supply in favour of the Principal supplier. Advance payment is not applicable

**Indigenous**: The payment will be made only after supply and installation of the equipment either by Cheque or RTGs.

1. **CUSTOMS DUTY & TAXES :**

**Imported :** The equipment purchased is for Research and Development activities. University is registered with DSIR and exempted from customs duty for all research equipments as per the Government Notification No: 51/ 96 Customs Dt.23.7.1996.and Government Notification No.10/97 Central Excise Dt: 1.3.1997.

**Indigenous:** The GST and IGST will be paid as per Govt Notification No.45/2017 –Central Tax (Rate) & 47/2017-Integrated Tax(Rate) dated 14.11.2017 : NO. 9/2018-Central Tax(Rate), No.09/2018- Union Territory Tax (Rate) & No.10/2018 – Integrated Tax(Rate) dated 25.01.2018: and State Tax(Rate).

1. If the equipment has Customs Duty as per Customs Tariff of India, the tenderer should mention HSN Code for the said equipment.
2. The customs clearance, transportation and delivery charges has to be borne by the supplier. Local supplier shall arrange an authorized customs clearing agent on behalf of the University. The University shall provide all the necessary documents under this notification to enable the supplier to clear the goods whenever required after receipt of invoice, airway bill /shipping notice and packing list from the principal supplier.
3. No demurrage will be paid by the University for Customs clearing delay.
4. Any dispute arising out of this contract shall be settled only at the court having jurisdiction of Coimbatore.
5. The authority competent to accept the tender reserves the right to reject or accept any tender without assigning any reasons thereof.
6. Regarding the acceptance of supply with reference to the specification and quality of materials supplied, the decision of Registrar shall be final.
7. **Loss or Damage**: External damages or shortages that are prima facie the results of rough handling in transit or due to defective packing will be intimated within a fortnight from the date of receipt of the material, Internal defects, damages of any internal parts that cannot ordinary be exhibited on superficial inspection though due to bad handling in transit or defective packing will be intimated within two months from the date of receipt of the stores. In either case the damaged or defective stores will have to be taken back at supplier’s cost and risk.
8. **Guarantee**: The Supplier shall undertake to repair free of charge or replace any defective part of the equipment supplied due to defective or faulty design or bad workmanship during the warranty period from the date of installation of the equipment.
9. **Leaflets and Descriptive Literature**: Full descriptive particulars and manuals of the equipment offered should accompany the tender. Information regarding the country of manufacturer or origin of materials in the manufacture of articles should be furnished.
10. **Tests:** Manufacturer’s certificate for the routine tests specified in the BSS of the test issue or as per manufacturer’s standard practice should be forwarded in duplicate. The materials will be rejected, if the test results are not satisfactory.
11. **Penalty Clause**: The delivery should be guaranteed by the tenderer under the penalty clause mentioned hereunder:

“When delivery is delayed by strike, lockouts, fire accidents or any cause whatsoever, beyond the reasonable control of the contractor and whether such delay or impediment occurs before or after the time or extended time for dispatch or completion, a reasonable extension time shall be granted.

If the contractor fails in due performance of this contract, within the time fixed by the contractor the extension thereof, the contractor is liable at discretion of the purchaser to a penalty of 4% per month of the contract value of such portion only of materials as cannot, in consequence of the delay, be used during each month between the appointed or extended time as the case may be and the actual time of acceptance, and such penalty shall be in full satisfaction of the contractor’s liability for the delay but shall no in any case exceed 25 % of the contract value of such portion of the materials”.

1. The material should be supplied strictly in accordance with the specifications given in the Appendix and should fulfil the successful tests carried out by the Competent Authority of the University. The supply and installation should be made as per the delivery schedule The guarantee period shall take effect from the date of installation. Successful tenderer shall be liable to change any defective part during the warranty period. In either case the damaged or defective items will have to be taken back at supplier’s cost and risk.
2. The installation and training charges if any are to be borne by the firm.
3. Incomplete Tenders: Tenders without the complete particulars will not be considered.
4. No communications from any tenderer adding to/adhering or explaining any terms of the tender will be considered prior to the submission or after opening of the tenders by the competent authority.
5. **Amendment:**

Tender Inviting Authority may amend the tender wherever it is felt that such an amendment is absolutely necessary.

1. In case of any modifications in specifications/terms and conditions/ any clarifications to the bid document it will be uploaded in the website only and bidders are requested to verify the amendments before the submission of the tender provided no such change could be effected 48 hours prior to the time fixed for opening of the tender
2. The tender shall be submitted along with the downloaded tender documents subject to and agreeing the above conditions duly attested and certified.

**Place:-** **SIGNATURE OF THE TENDERER WITH SEAL**

**Date:-** **Name & Designation:-**

**Mobile No:-**

**SCHEDULE**

1. **Technical Specification for the 1No. of Electrochemical workstation RDE setup and Electrodes & Electrochemical cells**

|  |  |  |
| --- | --- | --- |
| **Si.No** | **Description** | **Quantity** |
| 1. | **ELECTROCHEMICAL WORKSTATION**  Consists of Potentiostat, Galvanostat, Impedance Analyser, Cable set, Software  **Specification:**   * Electrode mode: 4 Electrodes WE, CE, RE, S * Compliance voltage: ± 10V * Maximum Current: ± 1A * Applied potential range: ± 10 Volts * Current ranges: ± 10nA to ± 1A in multiple ranges * Current Resolution: better than 1.5pA * Potential resolution: ± 400 nano volt * Scan rate: 1μV/sec to 10,000V/sec * Signal Collection: Dual 16bit ADC * Sampling speed: 1,00,000 samples/sec * Current accuracy: 0.2% * Potential accuracy: 0.2% * Electrometer bandwidth: 5 MHz * Input Impedance: 1000 G Ohm * Input bias current: 20pA * External inputs & outputs: 2 Analog inputs and 1 analogue output * Channel-XY input to record impedance from peripheral devices * PC interface: USB * The Potentiostat should support Rotating disk electrode system * Should work with the operating temperature from 10 to 50ºC * Should work with inlet gas pressure upto 5 psi or better * Should provide the necessary cables to connect Potentiostat and RDE controller   **Measurement Techniques:**  Electro analytical Voltammetry techniques, Pulse Voltammetry Techniques, Chrono techniques, Coulometry, Electrochemical Impedance Spectroscopy (option), Simulation & Fitting (option), Bio-sensing, Corrosion measurement & analysis, Battery testing, Fuel cell/ Supercap testing, Solar cell testing, Spectroelectrochemistry, User defined techniques, etc. | **1No.** |
| 2 | **Rotating Disk Electrode Setup with accessories**  RDE Cell Stand with Gas Purge Capabilities and with standard Accessories Kit  **Specification:**   * Rotation Range: 50-10,000 RPM * Accuracy: <1% at >1,000 RPM, <2% at <1,000 RPM * Inlet Gas Pressure: 5 psi * Power: 100-240 VAC, 50/60 Hz * Weight: 12 lbs   **Includes:**   * Power Cord * Glassy Carbon Electrode, 3.0 mm Dia for RDE (1) * RDE Shaft Assembly | **1No** |

|  |  |  |
| --- | --- | --- |
|  | * Cell Top * FEP Tubing 0.025” ID X 1/16” OD * Coiled Platinum Wire Auxiliary Electrode for RDE (1) * Glass Cell Vial (12) * Ag/AgCl (3M NaCl) Reference Electrode (3) * Control Cable 37 Pin Female to 37 Pin Male (1) * PK-4 Polishing Kit (1) * Gas Inlet Barb Fitting (1) * Reference Electrode Storage Vial w/Cap (1) * Cell Top Plug (1) * Cell Lead Clips Kit (1) |  |
| **3** | **Additional accessories for RDE:**   1. Cell base for RDE-2 cell stand 2. Offset cell cap for RDE-2 cell stand 3. RDE Carbon Steel Metal Insert – 6.35 mm diameter (5 mm long) 4. RDE Carbon Steel Metal Insert – 6.35 mm diameter (40 mm long) 5. RDE Double-threaded Electrode Body (25 mm long) 6. RDE Double-threaded Electrode Body (60 mm long) 7. 100 mL water-jacketed glass cell 8. 100mL glass cell | **1No.** |
| **4** | **Standard Electrochemical Cell:**  Includes:   * Teflon coated stir bar * Ag/AgCl electrode * Coiled Pt wire aux. electrode * 100mL glass cell * BE teflon cell top * Auxiliary electrode chamber * Auxiliary electrode bushing * Glassy carbon working electrode – 3 mm diameter * Teflon tubing 1/16" OD * O-ring for BE cell aux chamber | **1No.** |
| **5** | **Water-jacketed Standard Electrochemical Cell:**  Includes:   * Teflon coated stir bar * Ag/AgCl electrode * Coiled Pt wire aux. electrode * 100 mL water-jacketed glass cell * BE teflon cell top * Auxiliary electrode chamber * Auxiliary electrode bushing * Glassy carbon working electrode – 3 mm diameter * Teflon tubing 1/16" OD * O-ring for BE cell aux chamber | **1No** |
| **6** | **Screen print electrodes:** |  |
|  | 1. Screen printed electrode Carbon   (Working & counter Carbon and silver chloride ref.) | **60 Nos.** |
| 1. Screen printed electrode Gold   (Working & counter Gold and silver chloride ref.) | **60 Nos.** |
| 1. Cable for Screen printed electrode | **2 Nos.** |

|  |  |  |
| --- | --- | --- |
| 7 | **Electrodes and Electrochemical cells:** |  |
|  | 1. Glassy carbon electrode, 3mm diameter | **3 Nos.** |
| 1. Platinum Working electrode, 1.6mm diameter | **3 Nos.** |
| 1. Gold working electrode, 3mm diameter | **3 Nos.** |
| 1. Electrode holder clips | **3 Nos.** |
| 1. Ag/AgCl (3M KCl) Reference electrode with flexible connector | **3 Nos.** |
| 1. Coiled Platinum wire auxiliary electrode (23 cm) with gold plated connector, mounted in CTFE cylinder | **3 Nos.** |
| 1. Platinum wire auxiliary electrode ( 6.5 cm) with gold plated connector | 1. **Nos.** |
| 1. **20ml Voltammetry cell kit**   Consists of: Glass cell vials (7), Cell top with platinum auxiliary electrode and 1/16” OD Teflon tubing | **1 No.** |
| 1. Cell cable | **1 No.** |
| 1. PK4 Polishing kit | **1 No.** |
| 1. 10ml cell vial with Teflon lid with holes for electrodes | **5 Nos.** |
| 1. 20ml cell vial with Teflon lid with holes for electrodes | **5 Nos.** |
| 8 | **Computer** **Specification:**  i7 Processor; 2.1 GHz Processor; 8 GB RAM; 1 TB HDD; Graphics- Intel HD- USB Port – 8; 21inch LED Display; Keyboard and Mouse; Genuine Licensed Widows OS; WiFi / networking facility; HP Laserjet Pro M132A Mono Multi-function Laser Printer;  **Should be provide Indian marked company** | **1No.** |

**Terms and conditions:**

* **Warranty: 3 Years Manufacturer’s Warranty Certificate. Vendor should be an authorized provider of sophisticated high-precision potentiostat/galvanostat systems for past 15 Years or more with:**
* A proven track record in multiple countries and national institutes
* 5+ past installations of similar systems in India.
* Compliance statement should be enclosed with the quotation.
* The installation should be done at free of cost. Hands-on training for 1 day for two trainees (Faculty and scholars) must be provided on operation, maintenance and troubleshooting to two-three persons at the site of installation. If required, hands-on training must also be given to our faculty/scholar at a later stage, without any financial commitment to University.
* The technical details of the quoted instrument must be available on the official website of the principal supplier.
* The vendor should provide the list of end-users (Recent) with contact details. The vendor must submit the latest reference letters from their previous users.
* Trained Service engineers in India (with suitable certificates) for the quoted model must be readily available to resolve the technical problems.
* A list of recent scientific publications in reputed journals from the user institutions where the quoted model is available should be enclosed along with the quotation for reference.
* Suitable high-end computer systems must be provided included in the default accessories.
* Electrical Mains supply: All equipment & accessories should be compatible with 220 -230 V, 50 Hz power supply as per Indian Standard.
* All the necessary accessories such as electrode polishing cleaning kits, cells and bench mark electrodes and suitable connecting wires should be provided.
* All necessary safety features for power failures etc. should be provided for the struggle free continuous operation in all environmental conditions.
* One year of comprehensive replacement warranty including all replacement parts, labour & service charges, applicable taxes and duties, shipping costs as required without any additional cost for the whole workstation must be provided from the date of installation.
* A minimum of 10 years of operation must be ensured from the date of installation. During the installation if anything happens, free replacements should be carried with a short period of time, without any financial commitment (like the cost of the part, custom duty, packaging and transport) to Bharathiar University and for this written guarantee must be provided from the vendor. If there is any delay (exceeds a month) in attending the service and replacement, then that period of delay should be counted as the extended warranty.
* Pre-Installation requirements must be provided at the appropriate time. It means that the vendors must specify the requirements of building floor with professional civil and electrical details in advance.
* Vendor must conduct free of cost advanced site survey with the necessary instrumentation facility to monitor the vibration and electromagnetic interference levels at no additional cost.
* Necessary manpower/heavy lifting facilities must be taken care of by the vendor for the installation purpose, without any additional cost to Bharathiar University.
* **Compliance Statement:** The supplier must submit technical brochures and proper application notes adequately explaining and confirming the availability of the features in the model of the equipment being quoted.
* The supplier must submit a table indicating the compliance of the features of the model of the equipment being quoted with those given in the indent. Features not matching– must be clearly indicated.
* Additional features and Features in the quoted equipment which are better than those in the indent–may are clearly explained.

**SIGNATURE OF TENDERER**

**2. Technical Specification for the 1No. of Electrochemical workstation Bipotentiostat compatible to EQCM and Spectroelectrochemistry Setup**

|  |  |
| --- | --- |
| **Si.No.** | **Specification** |
| **1** | **Hardware specification:**   * Potentiostat / Galvanostat * 2- or 3- or 4-electrode configuration * Potential range:  -10 to 10V * Potentiostat rise time:  < 2 μs * Compliance voltage:  ±12 V * Current range:  ±250 mA continuous, ±350 mA peak * Sensitivity scale:  1x10-12 - 0.1 A/V in 12 ranges * Input bias current:  < 50 pA * Current resolution: 0.0015% of current range, min 0.3 fA * QCM maximum sampling rate: 1 kHz and resolution : <0.1Hz * Typical QCM should measure a mass change of 0.1-1ng/cm2 * Automatic and manual iR compensation * CV and LSV scan rate:  0.000001 to 5000 V/s * CA and CC pulse width: 0.0001 to 1000 sec * CA and CC minimum sample interval: 1 μs * CA and CC Steps: 320 * Automatic potential and current zeroing |
| **2** | **Electrochemical Analyser with Quartz Microbalance :**   * Power Supply (220V/50Hz) * Cell Cable * Interface Cable for USB Port * Windows based s/w * Manuals & Installation * EQCM cell & a set of Electrodes * Cyclic Voltammetry (CV) * Linear Sweep Voltammetry Plots :-  1. Current – E 2. Linear Pol Res Solar Plot (Isc, Voc, Pwr Max (W)FF 3. Voltage max (V)) 4. Power – E  * Staircase Voltammetry (SCV) * Tafel Plot (TAFEL) * Chrono Amperometry (CA) * Chrono Coulometry (CC) * Differential Pulse Voltammetry (DPV) * Normal Pulse Voltammetry (NPV) * Differential normal Pulse Voltammetry (DPNV) * Square Wave Voltammetry (SWV) * AC Voltammetry (ACV) * 2nd Harmonic AC Voltammetry (SHACV) * Amperometric I-t Curve (I-t) * Differential Pulse Amperometry (DPA) * Double Differential Pulse Amperometry (DDPA) * Triple Pulse Amperometry (TPA) * Bulk Electrolysis with Coulometry (BE) * Hydrodynamic Modulation Voltammetry (HMV) |

|  |  |
| --- | --- |
|  | * Sweep-step Functions (SSF) * Multi-Potential Steps (STEP) * Chronopotentiometry (CP) * Chronopotentiometry with Current Ramp (CPCR) * Potentiometric Stripping Anlysis (PSA) * Open Circuit Potential – Time (OCPT) * Quartz Crystal Microbalance (QCM) * Galvanostat * RDE control (0-10V output) * Full version of CV simulator * iR Compensation * Photovoltaic studies :-  1. I-V measurements 2. I max 3. Pmax 4. Fill factor |
| 3 | **Electrochemical Cell System should include :**   * Polished, Bounded, Mounded 100A Cr+ 1000 A Gold Crystal for EQCM -10 No.s * 4 glass cells with Two Cell top * Pt Working Electrode -3 No.s * GC Working Electrode -3 No. s * Ag/AgCI Reference (aq) -3 No. s * Ag/AgCl Reference (non aq) -3 No. s * Calomel Reference Electrode -3 No. s * Pt Wire Counter Electrode - 3 No. s * Electrode Polishing Kit * Cell stand with Faraday Cage with SVC-3:-  1. Easy Input gas line connection 2. Manual or Remote on-off control of gas purge-blanket 3. Manual control of gas purge blanket rate 4. Manual or remote on-off control of magnetic stirrer 5. Manually controlled adjustments of magnetic stirrer rate 6. Voltammetry cell cap 7. Small volume glass cell vials 8. Mounted cell top compatible with electro-chemical accessories. |
| **Spectrometer and accessories Specifications**  **Spectrometer for measuring Absorption, Transmission and Emission mode.** | |
| **4** | **Cell Assemblies for Spectroelectrochemistry:**   * Cell Top * Pt. Gauge Electrode (Flag Type) & Pt.Counter Electrode * 10 mm path quartz cuvette. * Spectroelectrochemistry software to bridge the spectrophotometer with electrochemical setup. Integration of Spectrometer & Potentiostat for SECS & its Accessories |

|  |  |
| --- | --- |
| 5 | **Spectrometer Module:**   * Wavelength Range: 200nm - 1.025μm * Optical Resolution: 1.69 nm FWHM (typical) * Pixels: 2048 * Detector: linear silicon CCD array * Detector Collection Lens: Yes * Entrance slit: 25 µm * Signal to noise ratio: 250:1 * Dynamic Range: 1300:1 for single acquisition * Integration time: 1ms – 65 seconds * UV/VIS Collimating Lens * Compatible —with insight light sources, accessories * Easy to use software— plug and play via the micro USB connection User interchangeable slit * Resolution variation * Indicator LEDs to indicate power and data transfer status * Balanced Deuterium Tungsten Source, 210-1700 nm, 1000 hrs * Spectroscopy software with graphical user interface; 1 license (2 installations, accessible) |
| 6 | **Adsorption/Transmission:**   * Square One cuvette holder * 3 collimators, 1-cm path * 2 filter holders * Integrated cover 200-2000 nm * Quartz optical fiber 400um & 100um one each * Diode lasers 3mW 405, 532, 635, 650, 780, 840 nm one each with Power supply for excitation for Fluorescence measurement. * Wavelength Range: ~230nm - 2.5μm * Source: Deuterium & Tungsten Halogen * Nominal Bulb Power: 25 W (deuterium), 20 W (tungsten halogen) * Shutter: Yes * Fiber Connector: SMA 905 |
| 7 | **Desktop Computer** :   * i5 Processor * 2.1 GHz Processor * 8 GB RAM * 1 TB HDD * Graphics- Intel HD- USB Port – 8 * gigabit, DVD R/W Dual * 23” LED Monitor- Display (1920 × 1080 pixel, DVI) * Keyboard and Mouse * Genuine Licensed Widows OS * HP Laserjet Pro M132A Mono Multi-function Laser Printer * Should be procured from India |

|  |  |
| --- | --- |
| 8 | **Software Features:**   * Software should have Integrated digital CV simulator and fitting program * Graphic Display Present data plot, 3D surface plot: Overlay plots: several sets of data overlaid for comparison, add data to overlay: adding data files to overlay plot, parallel plots, etc * Up-gradation of the software will be done once a year or as and when updated versions of software are available**.** * **Spectroscopy software with graphical user interface** |
| 9 | **Provide Additional required Optional items** |

## Terms and Conditions for Electrochemical workstation Bipotentiostat compatible to EQCM and Spectroelectrochemistry Setup:

* **Warranty: 3 Years Manufacturer’s Warranty Certificate. Vendor should be an authorized provider of sophisticated high-precision potentiostat/galvanostat systems for past 15 Years or more with:**
* A proven track record in multiple countries and national institutes
* Standard quality certifications such (ISO 9001)
* 5+ past installations of similar systems in India.
* Compliance statement should be enclosed with the quotation.
* The installation should be done at free of cost. Hands-on training for 1 day for two trainees (Faculty and scholars) must be provided on operation, maintenance and troubleshooting to two-three persons at the site of installation. If required, hands-on training must also be given to our faculty/scholar at a later stage, without any financial commitment to University.
* The technical details of the quoted instrument must be available on the official website of the principal supplier.
* The vendor should provide the list of end-users (Recent) with contact details. The vendor must submit the latest reference letters from their previous users.
* Trained Service engineers in India (with suitable certificates) for the quoted model must be readily available to resolve the technical problems.
* A list of recent scientific publications in reputed journals from the user institutions where the quoted model is available should be enclosed along with the quotation for reference.
* Suitable high-end computer systems must be provided included in the default accessories.
* Electrical Mains supply: All equipment & accessories should be compatible with 220 -230 V, 50 Hz power supply as per Indian Standard.
* All the necessary accessories such as electrode polishing cleaning kits, cells and bench mark electrodes and suitable connecting wires should be provided.
* All necessary safety features for power failures etc. should be provided for the struggle free continuous operation in all environmental conditions.
* One year of comprehensive replacement warranty including all replacement parts, labour & service charges, applicable taxes and duties, shipping costs as required without any additional cost for the whole workstation must be provided from the date of installation.
* A minimum of 10 years of operation must be ensured from the date of installation. During the installation if anything happens, free replacements should be carried with a short period of time, without any financial commitment (like the cost of the part, custom duty, packaging and transport) to Bharathiar University and for this written guarantee must be provided from the vendor. If there is any delay (exceeds a month) in attending the service and replacement, then that period of delay should be counted as the extended warranty.
* Pre-Installation requirements must be provided at the appropriate time. It means that the vendors must specify the requirements of building floor with professional civil and electrical details in advance.
* Vendor must conduct free of cost advanced site survey with the necessary instrumentation facility to monitor the vibration and electromagnetic interference levels at no additional cost.
* Necessary manpower/heavy lifting facilities must be taken care of by the vendor for the installation purpose, without any additional cost to Bharathiar University.
* **Compliance Statement:** The supplier must submit technical brochures and proper application notes adequately explaining and confirming the availability of the features in the model of the equipment being quoted.
* The supplier must submit a table indicating the compliance of the features of the model of the equipment being quoted with those given in the indent. Features not matching– must be clearly indicated.
* Additional features and Features in the quoted equipment which are better than those in the indent–may be clearly explained.

**SIGNATURE OF TENDERER**

**ANNEXURE - I**

**BHARATHAIR UNIVERSITY : COIMBATORE – 46**

**TECHNICAL BID**

Tender reference No :-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Name and address of Bidder
2. TENDER Cost :- Rs. \_\_\_\_\_\_\_\_\_\_, DD No. \_\_\_\_\_\_\_\_\_\_, dt.

Amount of EMD :- Rs. \_\_\_\_\_\_\_\_\_\_, DD No. \_\_\_\_\_\_\_\_\_\_, dt.

Bank:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Due Date of bid :
2. The bid shall remain valid for acceptance for 180 days, from the date of tender opening.
3. Schedule of Requirements:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sl.  No | Brief description of stores | | | | Qty  Required | Qty  Offered | Delivery | Unit  price  (Rs) | Total Cost  (Rs) |
|  |  | | | |  |  | At Bharathiar University  Coimbatore | To be filled in Annex:II | To be filled in Annex:II |
| (i) | GST |  | % |  | | - | - |  |  |
| (ii) | Warranty:- | **3years Comprehensive Warranty** | | | |  |  |  |  |
| (iii) | Other charges, if any | | | | | - | - |  |  |
| Grand total cost in Rs. | | | | | | | |  | |
| Total cost (in words) Rupees. | | | | | | | | | |

**Note:-**

1. All columns must be filled up.
2. Adhering to the format given above is a pre- requisite for considering your bid.
3. Please indicate applicability.

I/certify that I/We have completely read and understood and agree to all the terms & conditions given in Part II.

Date:- Signature of Bidder :-

Office Stamp Signing as :-

Name in block letters :-

Tele No. Fax No. e mail:-

**ANNEXURE: II**

**BHARATHAIR UNIVERSITY : COIMBATORE – 46**

**PRICE BID**

Tender reference No:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Name and address of Bidder
2. TENDER Cost :- Rs. \_\_\_\_\_\_\_\_\_\_, DD No. \_\_\_\_\_\_\_\_\_\_, dt.

Amount of EMD :- Rs. \_\_\_\_\_\_\_\_\_\_, DD No. \_\_\_\_\_\_\_\_\_\_, dt.

Bank:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Due Date of bid :
2. The bid shall remain valid for acceptance for 180 days, from the date of tender opening.
3. Rates for items given in Techno-commercial offer at Schedule of requirements are as follows:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sl.  No | Brief description of stores | | | | Qty  Offered | Delivery | Unit  price  (Rs) | Total Cost  (Rs) |
|  |  | | | |  | At Bharathiar University  Coimbatore |  |  |
| (i) | GST |  | % |  | - | - |  |  |
| (ii) | Other charges, if any | | | | - | - |  |  |
| Grand total cost in Rs. | | | | | | |  | |
| Total cost (in words) Rupees. | | | | | | | | |

Warranty:

**Note:-**

1. **All columns must be filled up.**
2. **The base price of the product and the GST rate should be mentioned separately. DSIR will be provided for the concessional rate of 5% along with the purchase order, since our university is an educational institution.**
3. **Adhering to the format given above is a pre- requisite for considering your bid.**
4. **Please indicate applicability.**

Date:- Signature of Bidder :-

Office Stamp Signing as :-

Name in block letters :-

Tele No. Fax No. e mail:-

**BHARATHIAR UNIVERSITY : COIMBATORE – 46**

**LETTER OF ACCEPTANCE**

Tender No.

Date :

To

THE REGISTRAR

Bharathiar University

Coimbatore – 641 046.

I/We agree to furnish required supplies / services as detailed in the Tender schedule or such portions thereof as you may specify in the Acceptance of Tender in accordance with the General Terms and Conditions governing the contract / supply order enclosed hereto duly accepted on receipt of the order for the same.

I /We agree to hold this offer open until and shall be bound to supply / omission /erect the equipment and despatch the same within the specified period.

I/ We agree to supply and commission /erect the equipment and complete the whole of the work and hand over to the purchaser within the period of weeks. From the date of receipt of intimation from you regarding acceptance of this tender / receipt of supply order.

Signature of the bidder

With office stamp

Name & Address

Station:-

Date :-