

Department of Physics, MLSU, Udaipur
Standard Bidding Document
Single Stage Online Bid under Two-Cover System

Mohanlal Sukhadia University, Udaipur
Department of Physics

NOTICE INVITING E-BID
PHY/CS/RUSA/E-Tender/2024/47 Dated:17/09/2024

Bidding Document

(For Procurement of Electrochemical Workstation)

Single Stage Online Bid under Two Cover Systems

Last Date for Bid Submission is 01st October September 2024



DEPARTMENT OF PHYSICS
MOHANLALSUKHADIA UNIVERSITY, UDAIPUR

Email:physics@mlsu.ac.in

NOTICE INVITING TENDER THROUGH E-PROCUREMENT

PHY/CS/RUSA/E-Tender/2024/47 Dated:17/09/2024

Online bids are invited from interested firms under single stage two bid system for procurement of **Workstation (Electrochemical)** at Mohanlal Sukhadia University Udaipur Rajasthan. Manual bids shall not be entertained. **Tender document may be downloaded** from on website SPPP Rajasthan (<https://sppp.rajasthan.gov.in/>), e-procurement <https://eproc.rajasthan.gov.in> and University website (<https://mlsu.ac.in>)

As per schedule as given in **CRITICAL DATE SHEET** as under.

Note: - Online single stage tender two bid system (technical and financial) must be uploaded strictly in accordance with all the terms & conditions of the University, otherwise the tender shall not be considered and shall be rejected outright. Counter conditions shall not be accepted. Bidders should read these conditions very carefully and comply strictly before submitting their tender. If a bidder has any doubts regarding the interpretation of any of the conditions or specifications mentioned in these documents, before submitting the tender, refer to the Head, Department of Physics and obtain clarification. The decision of the Head, Department of Physics regarding interpretation of the conditions and specification shall be final and binding on the bidders.

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Head
Department of Physics
Mohanlal Sukhadia University Udaipur



DEPARTMENT OF PHYSICS
MOHANLALSUKHADIA UNIVERSITY, UDAIPUR

Email:physics@mlsu.ac.in

A. CRITICAL DATE SHEET, TENDER FEE and EMD

Tender No and Date	PHY/CS/RUSA/E-Tender/2024/47 Dated 17/09/2024
Date of Issue	17-09-2024
Document Downloads/Sale Start Date & Time	18-09-2024 (09:00 AM)
Bid Submission Start Date & Time	18-09-2024 (09:00 AM)
Bid Submission End Date & Time	01-10-2024 (05:00 PM)
Bid Fees Submission Last date & Time	02-10-2024 (11:00 AM)
Date & Time for Opening of Technical Bids	02-10-2024 (01:00 PM)
Tender Fee and EMD	<p>RISL bid processing fees of Rs. 500/- for MD RISL, Jaipur payable at Jaipur (Managing Director, RajComp Info Services Ltd.) Rs. 1000/- (For Tender Fee) Rs. 40,000/- (For EMD 2%) (All Fees to be paid through RTGS/NEFT).</p> <p>Bank details of Beneficiary are as under: Name: HEAD DEPARTMENT OF PHYSICS, MLSU, Udaipur Bank Name: ICICI BANK Branch Address: Bapu Bazar, Udaipur Bank Account No.: 693301413619 IFSC Code: ICIC0006933 MICR Code: 520485782</p> <p>(This is mandatory that UTR Number is provided)</p>
Performance Security	5 %
Warranty	3 years
Bid Validity days	180 days
Address for Communication	Department of Physics, University College of Science, Mohanlal Sukhadia University, Durga Nursery Road Udaipur – 313001 (Rajasthan).



**DEPARTMENT OF PHYSICS
MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR**

Email:physics@mlsu.ac.in

(Abridged Form of Notice Inviting E-Bids to be published in newspapers with UBN Nos.)

DEPARTMENT OF PHYSICS, MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

NOTICE INVITING E- BID No.- PHY/CS/RUSA/E-Tender/2024/47 Date:17/09/2024

Two (02) single stage online unconditional bids under two-cover system are invited for the procurement of **Electrochemical Workstation** Research purpose (Estimated Cost 20 lakhs) from manufacturers/ authorized distributors/ authorized dealers up to 05:00 AM of 01-10-2024.

Details of required number of items, estimated cost, specifications and other terms and conditions etc. may be seen in the Bidding Documents on the website <https://sppp.rajasthan.gov.in/>, <https://eproc.rajasthan.gov.in> and University website www.mlsu.ac.in

NIB Code SUU2425A0019

UBN No SUU2425GLOB00034

Head, Department of Physics, Mohanlal Sukhadia University, Udaipur



TECHNICAL SPECIFICATIONS

S. No.	Item & specifications (Estimated Cost- INR-20,00,000/-)
1.	<p>Electrochemical Workstation</p> <ul style="list-style-type: none">➤ Electrochemical workstation (One channel with Bi-Potentiostat or Two channel) should provide with power supply 220V/50Hz, interface cable for serial port/USB port, cell cable, windows-based acquisitions software, manuals & installation etc.➤ This workstation should be able to study General Electrochemistry, Corrosion, Battery, Supercapacitor, Electro-catalysis, Photovoltaic/ Fuel cells, Sensors, Energy Applications etc.➤ This Electrochemical workstation should be able to perform two electrodes as well as three electrode tests.➤ This workstation should be coupled with rotating ring disk electrode (RRDE) and other accessories to perform various studies and capable for conducting reaction kinetic studies and hydrodynamic EIS studies on various catalysts using RRDE set-up.➤ This workstation must have provision for parallel measurements of 2 working electrodes in one Cell Setup with common Reference and common Counter Electrodes.➤ On site calibration of the channel with dummy should be available. <p>Specifications:</p> <ul style="list-style-type: none">➤ Electrode Connection : 2, 3, 4 (WE, S, CE and RE)➤ Floating/ Ground operation : User selectable➤ Maximum Current : ± 2 A or more➤ Compliance Voltage : ± 30 V or better➤ Applied Voltage Range : ± 10 V or better➤ Current Ranges : ± 10 nA to 1A or better (with several range)➤ Measured Current Resolution : 0.003% of current range or better➤ Measured Potential Resolution : 0.3 μV or better➤ Applied Potential Resolution : 150 μV or better➤ Current Accuracy : ± 0.2 % or better➤ Applied Potential Accuracy : ± 0.2 % or ± 2 mV or better➤ Electrochemical Impedance Spectroscopy: 1 Nos.➤ Frequency Range : 10μHz to 1MHz or better➤ Frequency Accuracy : 0.003% or better➤ Input Impedance : 1TΩ or better➤ Input Bias Current : <20pA or better➤ Bandwidth of Electrometer : > 4 MHz or better➤ Maximum Scan Rate : 1000 V/s or better (with several steps)➤ IR/Ohmic Drop Compensation : Current Interrupt, positive feedback➤ A/D Converter : 16 bit or better➤ Interface to PC : USB <p>Specifications of Complete Software Package with Measurement Techniques</p> <p>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, Complete battery and supercapacitor</p>

cycling software facility with following options: Galvanostatic Charge / Discharge (Including C rate control) with voltage vs. time, Graph plots, Multigraph display option within a single window, Customize variables graph plot for each axis, Voltage vs. Capacity plot during Charge/Discharge Cycles, Atleast 3 limits and 3 recording conditions per sequence/cycle (ability to limit a cycle or changeover to next sequence with Time, Voltage/Current, Charge/Power all simultaneously), Multiple recording conditions. CC-CV Method (Constant Current – Constant Voltage), Cyclic Voltammetry, Current Scan (Current/Galvano Dynamic), Voltage Scan (Potentio Dynamic), Constant Power / Constant Resistance, GITT and PITT Techniques Battery Characterization - Polarization Curve measurement/IV Testing/ Linear Sweep Voltammetry should be available down to 0 Volt. OCV/OCP, Cyclic Voltammetry, Chrono Amperometry, Chrono Potentiometry, Staircase Voltammetry, Corrosion – Linear and Cyclic Polarization, Pitting, Corrosion, ZRA, Columbic Efficiency Determination with fitting tool, Current Interrupt, Rest Time, Multiple loops, Option to update the experimental setting parameters on current running experiment without pausing /stopping the channel/experiment, Stepwise Potential Fast Chronoamperometry: SPFC, Life Cycle Tests for battery and supercapacitor, Analysis tools like Integral, Circular or linear fit and Electro chemical EIS -Z fit should be available, Experimental Techniques like All Voltamperometric techniques including Levich Plot: Levitch etc. All Voltamperometric techniques Like: OCV, CV, CVA, LSV, CA/CC, CP, SV, ACV, Levitch, Impedance Spectroscopy: GEIS, PEIS, SGEIS, SPEIS, Pulsed techniques: DPV, SWV, NPV, RNPV, DNPV, DPA, Manual Control: Current Manual Control, Potential Manual Control, Ohmic Drop determination: Manual IR compensation, IR Compensation (PEIS), Current Interrupt, Batteries testing: BCD, CCCV, GCPL, GCPL, MB, CED, CLD, CPW, APGC, PPI, GPI, RPI, PWPI, CV, Bipotentiostat techniques: CV-CA, CP-CA, CA-CA, Corrosion: Ecorr versus Time, Linear Polarization Resistance – LPR, Tafel Plot, Cyclic Polarization, Cyclic, Potentiodynamic Polarization – Critical Pitting Temperature-CPT, Depassivation Potential, Potentiodynamic Pitting, Potentiostatic Pitting, Electrochemical Noise, Biased Electrochemical Noise, Photovoltaics/Fuel cells: I-VC, CLD, CPW, CstC, CstV, Supercapacitors: CV, CstV, CstC, CS, Other Applications: Polarization Resistance, Stepwise Potential Fast Chronoamperometry, Anodic Stripping Voltammetry, RRDE, User Building Techniques: Modular Potentio, Modular Galvano, Trigger In/ Out, Temperature Control, RRDE Control, External Device Control, Loop, Pause, Reverse Normal Pulse Voltammetry: RNPV, Differential Normal Pulse Voltammetry: DNPV, Differential Pulse Amperometry: DPA, Ohmic Drop determination, Potentiodynamic Cycling with Galvanostatic Acceleration: PCGA, Modulo Bat:MB, Polarization Resistance: PR, The RRDE software should have fully automated analysis and plotting option for Levich and Koutecky-Levich analysis etc.

Electrochemical Impedance Spectroscopy (EIS)

Real-time fit and simulation analysis as well as live data plotting option for simulation plot must be available as default software protocol. Real time needed for Lissajous curve, Nyquist, Bode, Admittance and Dielectric & Mott-Schottky. The fit and simulation software should include basic options such as find circle, element subtraction and an equivalent circuit library with all the modern EIS equivalent circuit models, multiple visible plots in real times. EIS Modelling with Equivalent Circuit Fits. Simultaneous impedance measurement at counter electrode and working electrode. EIS Quality Indicators should be provided. EIS measurements simultaneously on the working and on the counter electrodes. Graphic Representation of Equivalent Circuit with user selectable circuit elements and their values in the circuit. Impedance fitting tool with battery diffusion elements available (restricted diffusion, restricted modified diffusion, restricted linear diffusion). The impedance fitting tool should have different fitting algorithms. Modify on Fly should be available to update experimental setting parameters on current running experiment without pausing/stopping.

Rotating Ring Disk Electrode (RRDE) Setup

- Suitable for RRDE and RDE applications.
- The RRDE cell should have gas-purging option as well remotely controlled dosing pump.
- The rotor should have the capability for remote as well as manual control
- Rotation range: 100 to 10,000 rpm with applied resolution 1 rpm
- RDE/RRDE Kit (Rotator with driveshaft controlled remotely and manually, Motor-controller unit, Connection cable, Power adaptor, BNC cable, Rotator fixing bar etc): 1 No.
- RRDE cell stand (Base plate, stand rod, rotator clamp with sealer cap, O-ring etc.): 1 No.
- 150ml Voltametry Cell (with glass stopper, Inlet tube, Outlet tube, etc). : 1 No
- Pt Counter Electrode for RRDE: 1 No.
- Ag/AgCl Reference Electrode for RRDE: 1 No.
- Glassy Carbon RDE Electrode: 1 No.
- RRDE GC Disk / Pt. Ring Electrode – 1 No.
- Polishing Kit: 1 No.

Accessories

- Electrochemical Cell System with stand and base plate: 2 (50 and 100 ml) glass cells with one Cell tops with gas inlet/out tube
- Pt Working Electrode: 1 no
- GC Working Electrodes: 2 no (OD: 6mm –ID: 3mm)
- Ag/AgCl Reference Electrodes: 2 no (aqueous and non-aqueous).
- Pt Wire Counter Electrodes: 1 no (0.5 mm diameter)

Expandability Options/ Up-gradation with accessories

This workstation must have expandable options/up-gradation with accessories to cater for the future expansion need such as: Power Boosters, LED optical bench for photo-modulated electrochemical/EIS analysis with interchangeable LED holders, Programmable LED Sources, Battery Holder, Corrosion Kit, etc.

Installation & Commissioning

- Installation and commissioning of the equipment has to be carried out by supplier at our laboratory in Department of Physics, MLSU, Udaipur and the performance has to be demonstrated.
- Onsite training must be provided to our personnel on the installed equipment for operation and data processing.

Standard warranty

Three year for complete system along with accessories from date of installation of the equipment at site

Offer and documents

Vendor must provide supporting technical literature, proprietary/patent certificates wherever applicable.



TERMS AND CONDITIONS

1. Pre-condition for applying

The following criteria must be fulfilled by a bidder for submitting bid

- 1.1 The bidder must be a company/firm registered under the India Company Act, 1956 or a proprietary firm or a firm registered under partnership Act 1932. No consortium is allowed. Necessary certificates must be enclosed.
- 1.2 The bidder must be a manufacturer/authorised dealer /supplier of equipment/ software (as applicable in this bid) of reputed brand used in at least 5 Universities /Educational Institutions in the country.
- 1.3 The Manufacturer of the equipment/experiments/software should have been in the business during last three years with dealer/supplier network in different locations in the country.
- 1.4 The manufacturer should have own service engineers capable of installing/servicing equipments/ software at the site of the customer. A certificate from manufacturer must be attached.
- 1.5 The turnover of the company during last financial year must be Rs. 20 lakh or more.

2. Preparation of Bids:

The offer/bid should be submitted in online two bid systems (i.e.) Technical bid and financial bid. The technical bid should consist of two compliance sheets (Sheet A for bidder details and Sheet B for technical specification) along with commercial terms and conditions. Financial bid should indicate item wise price for the items mentioned in the technical bid in the given format i.e BOQ (Annexures -VIII A & VIII B).

Technical and Financial Bids are to be submitted online in PDF format only.

2.1. Technical Bid Format & Content: The Technical Bid shall not include any financial information. A Technical Bid containing material financial information shall be declared non-responsive.

2.2 The prospective bidders are requested to go through the Terms and Conditions of the contract carefully. The bid documents (Technical and Financial) are to be uploaded as per Annexure I and VIII A & VIII B. The rates quoted in the BOQ (VIII A and VIII B) should be inclusive of all charges such as labour, transportation, storage etc. but exclusive of applicable taxes. Incomplete or ambiguous uploaded bids without documentary proof will not be considered.

2.3 Format and Signing of Bid

- The bid forms/templates/annexure etc. wherever applicable in technical Bid shall be typed or written in indelible ink and shall be signed (all the pages) by a person duly authorized to sign, in token of acceptance of all the terms and conditions of the bidding document. This authorization shall consist of a written letter of Authorization as per Annexure-V.
- Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialled by the authorized person signing the bid.
- The bid, duly signed (digitally) by Authorized signatory, should be uploaded on the eProc portal in respective file/ format.

2.4 Bid opening/Opening of Tenders:

- The Bid Evaluation Committee will perform the bid opening, which is a critical event in the bidding process.
- The Technical Bids shall be opened online through e-procurement portal <https://eproc.rajasthan.gov>. Bidder may access the document online.
- All the bids uploaded up to specified date and time shall be opened online, on date and time at the specified place in the presence of bidders or their authorized representatives who may choose to be present as per procedure laid down in RTPP Rules 2013. Alternatively, the bidders may also view the bid opening status/ process online at eProc website.
- All the documents comprising of technical bid/cover shall be opened ONLINE on the eProc website (only for the bidders who have submitted the prescribed fee(s) intimated/ submitted transition reference to Head, Department of Physics, Mohanlal Sukhadia University, Udaipur).

2.5 Evaluation of Technical Bid

- The evaluation shall be completed by the Bid Evaluation Committee as early as possible after opening of technical bids.
- The eligible bidders whose bid is determined to be substantially responsive shall be considered to be qualified in the technical evaluation, unless disqualified pursuant to clause “Conflict of Interest” or “Disqualification.”
- The Technical Evaluation Committee will assess the ability of the agencies to render the requisite services based on its past record, profile and on such other criteria and only those found fit will be eligible for financial bid opening.
- The firms qualifying in technical evaluation will be informed.
- The bid evaluation committee shall have full powers to undertake negotiations if any.
- Tendering authority’s Right to accept/Reject any or all of the Bids: The tendering authority reserves the right to accept or reject any bid, and to cancel the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to the bidders.
- Price/purchase preference in evaluation: Price and/or purchase preference notified by the State Government shall be considered in the evaluation of bids and award of contract.

2.6 Evaluation of Financial Bids

- The Financial bids/cover or bidders who qualify in technical evaluation shall be opened ONLINE at the notified time, date and place in the presence of the bidders or their representatives who choose to be present. Alternatively, the bidders may also view the

- financial bid opening status/process online on e-proc website.
- The process of opening of financial bids/covers shall be similar to that of technical bids.
 - Acceptance of the Tender/Bid:
 - The tendering authority shall award the Contract to the bidder whose proposal/bid has been determined to be the lowest value bid.
 - As soon as a bid is accepted by the tendering authority, its written intimation (LOA) would be sent to the concerned bidder asking to execute an agreement.
 - The acceptance of an offer is complete as soon as the letter of communication is posted to the last notified address/correct address of the bidder(s).
 - The acceptance of the bid shall also be placed on website of www.mlsu.ac.in.

2.7. The rates once finalized will not be enhanced/reduced during the purchase process. In case of foreign item, bidder must quote the price in INR.

2.8. In case the rates quoted by the tenderers are very high or do not suit the University, negotiation may be undertaken for reducing the quoted rates.

2.9. Merely quoting of lowest rates does not mean that order shall be given to that firm. The purchase committee /competent authority will finally decide on the basis of quality and performance of past installations.

2.10. Approved tenderer will have to execute an agreement in prescribed format on a non-judicial stamp of Rs. 1000/- at his own cost within 15 days from receipt of the order along with security money.

3. EMD:

3.1 The Tenderer should submit an EMD amount through RTGS/NEFT/DD. The Technical Bid without EMD would be considered as UNRESPONSIVE and will not be accepted. The EMD will be refunded without any interest to the unsuccessful tenderers after the award of contract

3.2 In case of successful bidder shows inability at any stage, after the contract is finalized and awarded, for whatsoever reason(s), to honour the contract, the EMD / performance security deposited would be forfeited.

4. Refund of EMD:

The EMD will be returned to unsuccessful tenderers only after the Tenders are finalized. In case of successful Tenderer, it will be retained till the successful, complete installation of the equipment and receipt of performance security.

5. Acceptance/ Rejection of bids:

The Institute reserves all rights to reject any bid not fulfilling the eligibility criteria.

6. Eligibility Criteria:

6.1 Tenderer should be the manufacturer / authorized dealer. Letter of Authorization from original equipment manufacturer (OEM) specific to the tender should be enclosed.

6.2 An undertaking from the OEM is required stating that they would facilitate the tenderer on a regular basis with technology/product updates and extend support for the warranty as well. (Ref. Annexure-II)

6.3 OEM should be Nationally/Internationally reputed Company.

6.4 Non-compliance of tender terms, non-submission of required documents, lack of clarity of the specifications, contradiction between tenderer specification and supporting documents etc. may lead to rejection of the bid.

6.5 In the tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.

6.6 If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.

7. Performance Security:

The firm, to whom the tender will be awarded, will have to deposit the performance security equal to 5 % of total amount at the time of installation of equipment. If services are not found to be satisfactory, the performance security liable to be forfeited. No interest will be paid on performance security.

8. Force Majeure:

The Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

8.1 For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

8.2 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

9. Risk Purchase Clause:

In event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from the other source on the total risk of the supplier under risk purchase clause.

10. Packing Instructions:

- Each package will be marked on three sides with proper paint/indelible ink, the following:
- Item Nomenclature
- Order/Contract No.
- Country of Origin of Goods
- Supplier's Name and Address
- Consignee details
- Packing list reference number

11. Delivery and Documents:

Delivery of the goods should be made within 06 months from the date of placement of purchase order. Within 24 hours of shipment, the supplier shall notify the purchaser and the

insurance company by cable/telex/fax/e mail the full details of the shipment including contract number, railway receipt number/ AAP etc. and date, description of goods, quantity, name of the consignee, invoice etc. The supplier shall mail the following documents to the purchaser with a copy to the insurance company:

- Four Copies of the Supplier invoice showing contract number, goods' description, quantity.
- Unit price and total amount.
- Insurance Certificate if applicable.
- Manufacturer's/Supplier's warranty certificate.
- Inspection Certificate issued by the nominated inspection agency, if any.
- Supplier's factory inspection report.
- Certificate of Origin (if possible, by the beneficiary).
- Two copies of the packing list identifying the contents of each package.
- The above documents should be received by the Purchaser before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses.

12. Liquidated Damages (L.D):

If a supplier fails to execute the order in time as per the terms and conditions stipulated therein, it will be open to the purchaser to recover liquidated damages for delay in delivery and installation from the supplier as per the provisions of Rajasthan Transparency in Public Procurement Act 2012 (Act No.21 of 2012) Rules 2013 Govt. of Rajasthan / GF& AR. The L.D charges can be increased in case of gross violation of the purchase order terms as decided by the Comptroller of the Institute.

13. Prices:

Bidder must quote the final price in INR only for F.O.R, Department of Physics, MLS University Udaipur, including air/sea freight, insurance, custom duty against CDEC (DSIR Certificate), custom clearing charges and transportation up to MLSU Udaipur. The final price should be inclusive of all charges including taxes.

14. Progress of Supply:

Wherever applicable, supplier shall regularly intimate progress of supply, in writing, to the Purchaser as under:

- 14.1. Quantity offered for inspection and date;
- 14.2. Quantity accepted/rejected by inspecting agency and date;
- 14.3. Quantity dispatched/delivered to consignees and date;
- 14.4. Quantity where incidental services have been satisfactorily completed with date;
- 14.5. Quantity where rectification/repair/replacement effected/completed on receipt of any communication from consignee/Purchaser with date;
- 14.6. Date of completion of entire Contract including incidental services, if any; and
- 14.7. Date of receipt of entire payments under the Contract (In case of stage-wise inspection, details required may also be specified).

15. Resolution of Disputes:

The dispute resolution mechanism would be as follows:

- 15.1. In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to the Comptroller, MLSU, Udaipur and if he is unable or unwilling to act, the sole arbitration of some other person appointed by him

willing to act as such Arbitrator. The award of the arbitrator so appointed shall be final, conclusive and binding on all parties to this order.

15.2. In the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by arbitration in accordance with provision of sub-clause (i) above. But if this is not acceptable to the supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules.

15.3 The venue of the arbitration shall be the place from where the order is issued.

16. Applicable Law:

The place of jurisdiction would be Udaipur, Rajasthan.

17. Right to Use Defective Goods:

If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the goods proves to be unsatisfactory, the purchaser shall have the right to continue to operate or use such goods until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the purchaser's operation.

18. Transfer and Subletting:

The supplier shall not sublet, transfer, assign or otherwise part with the acceptance to the tender or any part thereof, either directly or indirectly, without the prior written permission of the Purchaser.

19. Supplier Integrity:

The Supplier is responsible for and obliged to conduct all contracted activities in accordance with the Contract using state of the art methods and economic principles and exercising all means available to achieve the performance specified in the contract.

20. Installation & Demonstration:

20.1. The supplier is required to do the installation and demonstration of the equipment within two weeks of the arrival of materials at the site of installation at MLS University; otherwise the penalty clause will be the same as per the supply of materials.

20.2. In case of any 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. MLS University, will not be liable to any type of losses in any form.

21. Insurance:

For delivery of goods at the purchaser's premises, the appropriate insurance shall be obtained by the supplier from "warehouse to warehouse" (final destinations) on "All Risks" basis including War Risks and Strikes.

22. Warranty:

22.1. Warranty period shall be (as stated in "technical specifications" of this tender) from date of installation of Goods at MLS University. The Supplier shall, in addition, comply with the performance and/or consumption guarantees specified under the contract. If for reasons

attributable to the Supplier, these guarantees are not attained in whole or in part, the Supplier shall at its discretion make such changes, modifications, and/or additions to the Goods or any part thereof as may be necessary in order to attain the contractual guarantees specified in the Contract at its own cost and expense and to carry out further performance tests. The warranty should be comprehensive on site.

22.2. The Purchaser shall promptly notify the supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall arrange to repair or replace the defective goods or parts within 15 days free of cost in MLS University. The Supplier shall take over the replaced parts/goods at the time of their replacement. No claim whatsoever shall lie on the Purchaser for the replaced parts/goods thereafter. The period for correction of defects in the warranty period is 15 days. If the supplier having been notified fails to remedy the defects within 15 days, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expenses and without prejudice to any other rights, which the purchaser may have against the supplier under the contract.

23. Governing Language:

The contract shall be written in English language. English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the same language.

24. Duties

Mohanlal Sukhadia University is exempted from paying custom duty under notification No.51/96 and necessary "Custom Duty Exemption Certificate" will be provided if needed (since the University has DSIR Certificate) along with other documents as follows:

24.1. Shipping details i.e. Master Airway Bill No. and House Airway No. (if exists)

24.2 Forwarder details i.e. Name, Contact No., etc.

25. Payment:

The payment to the supplier will be made after successful installation of the equipment.

26. User list:

Brochure detailing technical specifications and performance, list of industrial and educational establishments where the items enquired have been supplied must be provided (Ref. Annexure-III).

27. Site Preparation:

The supplier shall inform to the Institute about the site preparation, if any, needed for the installation of equipment, immediately after the receipt of the purchase order. The supplier must provide complete details regarding space and all the other infrastructural requirements needed for the equipment, which the Institute should arrange before the arrival of the equipment to ensure its timely installation and smooth operation thereafter.

The supplier may visit the Institute and see the site where the equipment is to be installed and may offer his advice and render assistance to the Institute in the preparation of the site and other pre-installation requirements.

28. Spare Parts:

The Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier. Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract. In the event of termination of production of the spare parts; Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if requested.

Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares. Other spare parts and components shall be supplied as promptly as possible, but in any case, within six months of placement of order.

29. Defective Equipment:

If any of the equipment supplied by the Supplier 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 Supplier with 18% interest if such payments for such equipment have already been made. 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. In case supplier fails to replace above item as per above terms & conditions, MLS University may consider "Banning" the supplier.

30. Termination for Default:

The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:

- If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the order, or within any extension thereof granted by the Purchaser.
- If the Supplier fails to perform any other obligation(s) under the Contract.
- If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract. For the purpose of this Clause: "Corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution. "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the borrower, and includes collusive practice among Tenderer (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.
- In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue the performance of the Contract to the extent not terminated.

31. Downtime:

- During the warranty period, not more than 2% downtime will be permissible. For every day exceeding permissible downtime, penalty of 1/365 of the 1% of the value will be imposed. Downtime will be counted from the date and time of the filing of complaint within business hours.
- Supplier should clearly mention about their service set up in India (preferably in Northern part of India) for prompt service support along with contact details of service engineers specially trained on the offered system.

32. Training of Personnel:

The supplier shall be required to undertake to provide the technical training to the personnel involved in the use of the equipment at the Institute premises, immediately after completing the installation of the equipment as per Annexure VII

33. Compliancy certificate:

This certificate must be provided indicating conformity to the technical specifications.
(Annexure-I)

34. Award of Contract:

Mohanlal Sukhadia University shall award the contract to the eligible bidder whose technical bid has been accepted and determined as the lowest evaluated commercial bid based on the Grand Total calculated of all items + taxes etc. of the Price Bids. However, MLS University reserves the right and has sole discretion to reject the lowest evaluated bid.

If more than one bidder happens to quote the same lowest price, MLS University reserves the right to decide the criteria and further process for awarding the contract, decision of MLS University shall be final for awarding the contract.

35 Additional Points:

- If the ITEMS supplied by the Bidder fail during the warranty period, the supplier is required to repair/replace faulty devices or components. If the ITEMS show frequent failure and requires frequent repair during warranty period, the supplier is required to replace the system free of cost.
- If there is any updation/ additional information in the submitted tender. A corrigendum will be published on the university website (www.mlsu.ac.in) only. Bidder should take into account of the corrigendum published on university website before submitting the bids online.



DEPARTMENT OF PHYSICS
MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

ANNEXURE-I

To: Head, Department of Physics, Mohanlal Sukhadia University, Udaipur – 313001

Name of Item: **Electrochemical Workstation**

Quantity: **1 No.**

Name of Supplier:

- (i) Bidder must submit technical bid (Compliance Sheets A and B) with supporting documents along with EMD as prescribed under terms and conditions.
(ii) The Bidder must write Yes/No against each. Any deviation may be mentioned explicitly).

TECHNICAL BID FORM

Compliance Sheet-A for Bidder

S. No.	Particulars	Information to be provided by the Bidder	Check (Yes/No)	Page No.
1.	Name of the Bidder with complete address and Telephone/Mobile number			
2.	Earnest Money Deposit in favour of Head Department of Physics, MLSU, Udaipur	Tender fee. Amount DD/NEFT/RTGS No. RISL Processing Fee Amount DD/NEFT/RTGS No. EMD Amount DD/NEFT/RTGS No.		
3.	Registration Number & Date of establishment of the firm.	Copy of registration should be attached as a proof.		
4.	The tenderer must be manufacturer or authorized dealer, if the tenderer is authorized dealer then the letter of authorization from the original equipment manufacturer must be attached	Copy of manufacturer certificate / authorization letter		
5.	The company should have executed at least three orders of Rs. 20 lacs or more to government/reputed organizations /university during last three years.	Attach the copy of the orders.		
6.	The turnover of bidder company should more than Rs. 20 lakhs in each year for the last three financial	Attach the copy of balance sheets.		

	years.			
7.	GST, PAN, SSI/MSME Registration and PF & ESIC registration number of the firm etc.	Enclose copy		
8.	Whether your firm has been blacklisted by any Government/PSU/Board/University.	Submit an Undertaking on judicial stamp of Rs. 100/-		
9.	Bank details.	Attach copy of cancel cheque.		
10.	Provide the name(s) of your prestigious customers with their phone nos. for whom the order has been placed during last three years	Attach list (Annexure III)		

COMPLIANCE SHEET - B

Technical Specification for Electrochemical Workstation

S.No.	Item & specifications	Make and Model	Compliance (Yes / No)	Deviations, if any
1	<p>Electrochemical Workstation</p> <ul style="list-style-type: none"> ➤ Electrochemical workstation (One channel with Bi-Potentiostat or Two channwl) should provide with power supply 220V/50Hz, interface cable for serial port/USB port, cell cable, windows-based acquisitions software, manuals & installation etc. ➤ This workstation should be able to study General Electrochemistry, Corrosion, Battery, Supercapacitor, Elecro-catalysis, Photovoltaic/ Fuel cells, Sensors, Energy Applications etc. ➤ This Electrochemical workstation should be able to perform two electrodes as well as three electrode tests. ➤ This workstation should be coupled with rotating ring disk electrode (RRDE) and other accessories to perform various studies and capable for conducting reaction kinetic studies and hydrodynamic EIS studies on various catalysts using RRDE set-up. ➤ This workstation must have provision for parallel measurements of 2 working electrodes in one Cell Setup with common Reference and common Counter Electrodes. ➤ On site calibration of the channel with dummy should be available. <p>Specifications:</p> <ul style="list-style-type: none"> ➤ Electrode Connection : 2, 3, 4 (WE, S, CE and RE) ➤ Floating/ Ground operation: User selectable ➤ Maximum Current : ± 2 A or more 			

<ul style="list-style-type: none"> ➤ Compliance Voltage : ± 30 V or better ➤ Applied Voltage Range : ± 10 V or better ➤ Current Ranges : ± 10 nA to 1A or better (with several range) ➤ Measured Current Resolution : 0.003% of current range or better ➤ Measured Potential Resolution : 0.3 μV or better ➤ Applied Potential Resolution : 150 μV or better ➤ Current Accuracy : ± 0.2 % or better ➤ Applied Potential Accuracy : ± 0.2 % or ± 2 mV or better ➤ Electrochemical Impedance Spectroscopy: 1 Nos. ➤ Frequency Range : 10μHz to 1MHz or better ➤ Frequency Accuracy : 0.003% or better ➤ Input Impedance : 1TΩ or better ➤ Input Bias Current : <20pA or better ➤ Bandwidth of Electrometer : > 4 MHz or better ➤ Maximum Scan Rate : 1000 V/s or better (with several steps) ➤ IR/Ohmic Drop Compensation : Current Interrupt, positive feedback ➤ A/D Converter : 16 bit or better ➤ Interface to PC : USB <p>Specifications of Complete Software Package with Measurement Techniques</p> <p>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, Complete battery and supercapacitor cycling software facility with following options: Galvanostatic Charge / Discharge (Including C rate control) with voltage vs. time, Graph plots, Multigraph display option within a single window, Customize variables graph plot for each axis, Voltage vs. Capacity plot during Charge/Discharge Cycles, Atleast 3 limits and 3 recording conditions per sequence/cycle (ability to limit a cycle or changeover to next sequence with Time, Voltage/Current, Charge/Power all simultaneously), Multiple recording conditions. CC-CV Method (Constant Current – Constant Voltage), Cyclic Voltammetry, Current Scan (Current/Galvano Dynamic), Voltage Scan (Potentio Dynamic), Constant Power / Constant Resistance, GITT and PITT Techniques Battery Characterization -Polarization Curve measurement/IV Testing/ Linear Sweep Voltammetry should be available down to 0 Volt. OCV/OCP, Cyclic</p>			
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<p>Voltammetry, Chrono Amperometry, Chrono Potentiometry, Staircase Voltammetry, Corrosion – Linear and Cyclic Polarization, Pitting, Corrosion, ZRA, Columbic Efficiency Determination with fitting tool, Current Interrupt, Rest Time, Multiple loops, Option to update the experimental setting parameters on current running experiment without pausing/stopping the channel/experiment, Stepwise Potential Fast Chronoamperometry: SPFC, Life Cycle Tests for battery and supercapacitor, Analysis tools like Integral, Circular or linear fit and Electro chemical EIS -Z fit should be available, Experimental Techniques like All Voltamperometric techniques including Levich Plot: Levitch etc. All Voltamperometric techniques Like: OCV, CV, CVA, LSV, CA/CC, CP, SV, ACV, Levitch, Impedance Spectroscopy: GEIS, PEIS, SGEIS, SPEIS, Pulsed techniques: DPV, SWV, NPV, RNPV, DNPV, DPA, Manual Control: Current Manual Control, Potential Manual Control, Ohmic Drop determination: Manual IR compensation, IR Compensation (PEIS), Current Interrupt, Batteries testing: BCD, CCCV, GCPL, GCPL, MB, CED, CLD, CPW, APGC, PPI, GPI, RPI, PWPI, CV, Bipotentiostat techniques: CV-CA, CP-CA, CA-CA, Corrosion: Ecorr versus Time, Linear Polarization Resistance – LPR, Tafel Plot, Cyclic Polarization, Cyclic Potentiodynamic Polarization – Critical Pitting Temperature-CPT, Depassivation Potential, Potentiodynamic Pitting, Potentiostatic Pitting, Electrochemical Noise, Biased Electrochemical Noise, Photovoltaics/Fuel cells: I-VC, CLD, CPW, CstC, CstV, Supercapacitors: CV, CstV, CstC, CS, Other Applications: Polarization Resistance, Stepwise Potential Fast Chronoamperometry, Anodic Stripping Voltammetry, RRDE, User Building Techniques: Modular Potentio, Modular Galvano, Trigger In/ Out, Temperature Control, RRDE Control, External Device Control, Loop, Pause, Reverse Normal Pulse Voltammetry: RNPV, Differential Normal Pulse Voltammetry: DNPV, Differential Pulse Amperometry: DPA, Ohmic Drop determination, Potentiodynamic Cycling with Galvanostatic Acceleration: PCGA, Modulo Bat:MB, Polarization Resistance: PR, The RRDE software should have fully automated analysis and plotting option for Levich and Koutecky-Levich analysis etc.</p> <p>Electrochemical Impedance Spectroscopy (EIS) Real-time fit and simulation analysis as well as live data plotting option for simulation plot must be available as default software protocol. Real time needed for Lissajous curve, Nyquist, Bode, Admittance and Dielectric & Mott-</p>			
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<p>Schottky. The fit and simulation software should include basic options such as find circle, element subtraction and an equivalent circuit library with all the modern EIS equivalent circuit models, multiple visible plots in real times. EIS Modelling with Equivalent Circuit Fits. Simultaneous impedance measurement at counter electrode and working electrode. EIS Quality Indicators should be provided. EIS measurements simultaneously on the working and on the counter electrodes. Graphic Representation of Equivalent Circuit with user selectable circuit elements and their values in the circuit. Impedance fitting tool with battery diffusion elements available (restricted diffusion, restricted modified diffusion, restricted linear diffusion). The impedance fitting tool should have different fitting algorithms. Modify on Fly should be available to update experimental setting parameters on current running experiment without pausing/stopping.</p> <p>Rotating Ring Disk Electrode (RRDE) Setup</p> <ul style="list-style-type: none"> ➤ Suitable for RRDE and RDE applications. ➤ The RRDE cell should have gas-purging option as well remotely controlled dosing pump. ➤ The rotor should have the capability for remote as well as manual control ➤ Rotation range: 100 to 10,000 rpm with applied resolution 1 rpm ➤ RDE/RRDE Kit (Rotator with driveshaft controlled remotely and manually, Motor-controller unit, Connection cable, Power adaptor, BNC cable, Rotator fixing bar etc): 1 No. ➤ RRDE cell stand (Base plate, stand rod, rotator clamp with sealer cap, O-ring etc.): 1 No. ➤ 150ml Voltametry Cell (with glass stopper, Inlet tube, Outlet tube, etc). : 1 No ➤ Pt Counter Electrode for RRDE: 1 No. ➤ Ag/AgCl Reference Electrode for RRDE: 1 No. ➤ Glassy Carbon RDE Electrode: 1 No. ➤ RRDE GC Disk / Pt. Ring Electrode – 1 No. ➤ Polishing Kit: 1 No. <p>Accessories</p> <ul style="list-style-type: none"> ➤ Electrochemical Cell System with stand and base plate: 2 (50 and 100 ml) glass cells with one Cell tops with gas inlet/out tube ➤ Pt Working Electrode: 1 no ➤ GC Working Electrodes: 2 no (OD: 6mm –ID: 3mm) ➤ Ag/AgCl Reference Electrodes: 2 no (aqueous and non- 			
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	<p>aqueous).</p> <p>➤ Pt Wire Counter Electrodes: 1 no (0.5 mm diameter)</p> <p>Expandability Options/ Up-gradation with accessories This workstation must have expandable options/up-gradation with accessories to cater for the future expansion need such as: Power Boosters, LED optical bench for photo-modulated electrochemical/EIS analysis with interchangeable LED holders, Programmable LED Sources, Battery Holder, Corrosion Kit, etc.</p> <p>Installation & Commissioning Installation and commissioning of the equipment has to be carried out by supplier at our laboratory in Department of Physics, MLSU, Udaipur and the performance has to be demonstrated. Onsite training must be provided to our personnel on the installed equipment for operation and data processing.</p> <p>Standard warranty Three year for complete system along with accessories from date of installation of the equipment at site</p> <p>Offer and documents Vendor must provide supporting technical literature, proprietary/patent certificates wherever applicable.</p>			
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Signature of Tenderer

Name: _____

Designation: _____

Organization Name: _____

Contact No.: _____

<< Organization Letter Head >>
DECLARATION SHEET

We, _____ hereby certify that all the information and data furnished by our organization with regard to these tender specifications are true and complete to the best of our knowledge. I have gone through the specifications, conditions and stipulations in details and agree to comply with the requirements and intent of specification.

I/We hereby unconditionally accept the tender conditions of above mentioned tender document(s)/corrigendum(s) in its totality/entirety.

This is certified that our organization has been authorized (Copy attached) by the OEM to participate in Tender. We further certify that our organization meets all the conditions of eligibility criteria laid down in this tender document. Moreover, OEM has agreed to support on regular basis with technology / product updates and extend support for the warranty.

The corrigendum(s) issued from time to time by your department/organization too have also been taken into consideration, while submitting this acceptance letter.

We, further specifically certify that our organization has not been Black Listed/De Listed or put to any Holiday by any Institutional Agency/ Govt. Department/ Public Sector Undertaking in the last three years.

The prices quoted in the financial bids are subsidized due to academic discount given to MLSU-Udaipur.

NAME & ADDRESS OF THE Vendor/ Manufacturer / Agent	
Phone	
Fax	
E-mail	
Contact Person Name	
Mobile Number	
TIN Number	
PAN Number (In case of on-line payment of Tender Fees)	
UTR No. (For Tender Fee) (In case of on-line payment of EMD)	
UTR No. (For EMD)	

(Signature of the Tenderer)

Name:
Seal of the Company

ANNEXURE-III

LIST OF GOVT. ORGANIZATION/DEPARTMENT.

List of Government Organizations for whom the Tenderer has undertaken such work during last three years (must be supported with work orders)		
Name of the organization	Name of Contact Person	Contact No.

Name of application specialist / Service Engineer who have the technical competency to handle and support the quoted product during the warranty period.		
Name of the organization	Name of Contact Person	Contact No.

Signature of Tenderer

Name: _____

Designation: _____

Organization Name: _____

Contact No.: _____

ANNEXURE- IV

FORMAT FOR PERFORMANCE BANK GUARANTEE

(To be typed on Non-judicial stamp paper of the value of Indian Rupees of One Hundred) (TO BE ESTABLISHED THROUGH ANY OF THE NATIONAL BANKS (WHETHER SITUATED AT UDAIPUR OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT UDAIPUR OR ANY SCHEDULED BANK (OTHER THAN NATIONALISED BANK) SITUATED AT UDAIPUR. BONDS ISSUED BY CO-OPERATIVE BANKS ARE NOT ACCEPTED.)

To,

Mohanlal Sukhadia University
Udaipur-313001
India

LETTER OF GUARANTEE

WHEREAS Mohanlal Sukhadia University (Buyer) have invited Tenders vide Tender No.....dt..... for purchase of

and whereas the said tender document requires that any eligible successful tenderer (seller) wishing to supply the equipment /machinery etc. in response thereto shall establish an irrevocable Performance Guarantee Bond in favour of **“Mohanlal Sukhadia University, Udaipur”** in the form of Bank Guarantee for Rs and valid till **three years** from the date of issue of Performance Bank Guarantee may be submitted within 21 (Twenty-One) days from the date of acceptance as a successful tenderer.

NOW THIS BANK HEREBY GUARANTEES that in the event of the said tenderer (seller) failing to abide by any of the conditions referred in tender document / purchase order / performance of the equipment / machinery, etc. this bank shall pay to Mohanlal Sukhadia University on demand and without protest or demur Rs (Rupees.....).

This bank further agrees that the decision of Mohanlal Sukhadia University, Udaipur (Buyer) as to whether the said Tenderer (Seller) has committed a breach of any of the conditions referred in tender document / purchase order shall be final and binding.

We, (name of the bank & branch) hereby further agree that the guarantee herein contained shall not be affected by any change in the constitution of the Tenderer (Seller) and/ or Mohanlal Sukhadia University, Udaipur (Buyer).

Notwithstanding anything contained herein:

1. Our liability under this Bank Guarantee shall not exceed Rs.(Indian Rupees only).
2. This Bank Guarantee shall be valid up to (date) and

3. We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only if Institute serve upon us a written claim or demand on or before(date).

This Bank further agrees that the claims if any, against this Bank Guarantee shall be enforceable at our branch office at situated at (Address of local branch).

Yours truly,

Signature and seal of the guarantor:

Name of Bank:

Address:

Date:

Instruction to Bank: Bank should note that on expiry of Guarantee Period, the Original Guarantee will not be returned to the Bank. Bank is requested to take appropriate necessary action on or after expiry of bond period.

ANNEXURE-V

MANDATE FORM FOR ELECTRONIC FUND TRANSFER/RTGS TRANSFER

Date: / /

The Head

Department of Physics

Mohanlal Sukhadia University, Udaipur

Udaipur-313001

Sub: Authorization for release of payment / dues from Mohanlal Sukhadia University, Udaipur through Electronic Fund Transfer/RTGS Transfer.

1. Name of the Party/Firm/Company/Institute:
2. Address of the Party:
3. Particulars of Bank

Bank Name		Branch Name	
Branch Place		Branch City	
PIN Code		Branch Code	
MICR No			
(9 Digit number appearing on the MICR Bank of the Cheque supplied by the Bank, please attach a Xerox copy of a cheque of your bank for ensuring accuracy of the bank name, branch name and code number)			
IFS Code:(11 digit alphanumeric code)			
Account Type	Savings	Current	Cash Credit
Account Number:			

DECLARATION

I hereby declare that the particulars given above are correct and complete. If any transaction delayed and not effected for reasons of incomplete or incorrect information, I shall not hold Registrar, Mohanlal Sukhadia University, Udaipur responsible. I also undertake to advise any change in the particulars of my account to facilitate updating of records for purpose of credit of amount through NEFT/RTGS Transfer.

Place: _____

Date: _____

Signature & Seal of the Authorized Signatory of the Party

Certified that particulars furnished above are correct as per our records

Bankers Stamp:

Date: _____

Signature of the Authorized Official from the Bank

N.B: Please fill in the information in CAPITAL LETTERS, computer typed; please TICK wherever it is applicable.

ANNEXURE VI

(to be printed on Supplier's letterhead)

INTEGRITY PACT

General

This pre-bid pre-contract Agreement hereinafter called the Integrity Pact is made on.....

day of the month of, between, on one hand, the Governor of Rajasthan acting through Registrar, Mohanlal Sukhadia University, Udaipur

Udaipur-313001 hereinafter called the "BUYER" of the first part and M/s..... represented by Shri, Director /Chief Executive Officer/ General Manager hereinafter called the "TENDERER/Seller" of the second part.

WHEREAS the BUYER proposes to procure (Name of the Stores/Equipment/Item) and the TENDERER/Seller is willing to offer/has offered the stores and WHEREAS the TENDERER is a private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is an Autonomous Body/Department of the Government of India performing its functions on behalf of the President of India.

NOW, THEREFORE, to avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to enabling the BUYER to obtain the desired said stores / equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and Enabling Tenderer to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

1. Commitments of the BUYER:

1.1 The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the TENDERER, either for themselves or for any person, organization or third party related to the

contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the Contract.

1.2 The BUYER will, during the pre-contract stage, treat all Tenderer alike, and will provide to all tenderer the same information and will not provide any such information to any particular TENDERER which could afford an advantage to that particular TENDERER in comparison to other Tenderer.

1.3 All the officials of the Buyer will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

1.4 In case any such preceding misconduct on the part of such official (s) is reported by the TENDERER to the BUYER, with full and verifiable facts and the same is prima facie found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the BUYER the proceedings under the contract would not be stalled.

2. Commitments of TENDERER:

The TENDERER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:

2.1 The TENDERER will not offer, directly or through intermediaries, any bribe, consideration, gift, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the Contract.

2.2 The TENDERER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the Contract or any other Contract with the Government for showing or For bearing to show favour or disfavour to any person in relation to the Contract or any other Contract with the Government.

2.3 Tenderer shall disclose the name and address of agents and representatives and Indian Tenderer shall disclose their foreign principals or associates.

2.4 Tenderer shall disclose the payments to be made by them to agents / brokers or any other intermediary, in connection with this bid/contract.

2.5 The TENDERER further confirms and declares to the BUYER that the TENDERER is the original manufacturer/ integrator/ authorized government sponsored export entity of the defines stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER, or any of its functionaries, whether officially or unofficially to the award of the contract to the TENDERER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

2.6 The TENDERER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

2.7 The TENDERER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.

2.8 The TENDERER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

2.9 The TENDERER shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The TENDERER also undertakes to exercise due and adequate care lest any such information is divulged.

2.10 The TENDERER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

2.11 The TENDERER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

2.12 If the TENDERER or any employee of the TENDERER or any person acting on behalf of the TENDERER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an officer of the BUYER has financial interest/stake in the TENDERER's firm, the same shall be disclosed by the TENDERER at the time of filing of tender. The term relative for this purpose would be as defined in Section 6 of the Companies Act 1956.

2.13 The TENDERER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

3. Previous Transgression

3.1 The TENDERER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify TENDERER's exclusion from the tender process

3.2 The TENDERER agrees that if it makes incorrect statement on this subject, TENDERER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

4. Earnest Money Deposit

4.1 While submitting bid, the TENDERER shall deposit an amount mentioned in tender document as Earnest Money, with the University through the following instruments:

4.1.1 The tenderer should submit an EMD amount through NEFT/RTGS. The Technical Bid without EMD would be considered as UNRESPONSIVE and will not be accepted. The EMD will be refunded without any interest to the unsuccessful tenderer after the award of contract.

4.2 No interest shall be payable by the BUYER to the TENDERER on Earnest Money for the period of its currency.

4.3 In case of successful TENDERER, EMD will be returned within 30 days from the date of submission of Performance Bank Guarantee.

5. SECURITY DEPOSIT /PERFORMANCE GUARANTEE:

5.1 Performance Bank Guarantee is mandatory.

5.2 Successful tenderer/ tenderer should submit performance guarantee as prescribed above to be received in the Department of Physics, Mohanlal Sukhadia University on or before 30 days from the date of issue of order acknowledgement. The performance bank guarantee to be furnished in the form of Bank Guarantee as per Annexure-IV of the tender documents, for an amount covering 5% of the purchase order value.

5.3 The Performance Bank Guarantee should be established in favour of" Head, Department of physics, Mohanlal Sukhadia University through any Bank situated at Udaipur or outstation with a clause to enforced the same on their local branch at Udaipur. Performance Bank Guarantee shall be for the due and faithfully performance of the contract and shall remain binding, notwithstanding such variations, alterations for extensions of time as may be made, given, conceded or agreed to between the successful tenderer and the purchaser under the terms and conditions of acceptance to tender.

5.4 The successful tenderer is entirely responsible for due performance of the contract in all respects according to the speed, intent and meaning of the terms and conditions and specification and all other documents referred to in the acceptance of tender.

5.5 The performance bank guarantee shall be kept valid during the period of contract and shall continue to be enforceable for a period of two years from the date of order acknowledgement.

6. Sanctions for Violations

6.1 Any breach of the aforesaid provisions by the TENDERER or any one employed by it or acting on its behalf (whether with or without the knowledge of the TENDERER) shall entitle the BUYER to take all or any one of the following actions, wherever required:

6.1.1 To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the TENDERER. However, the proceedings with the other TENDERER(s) would continue.

6.1.2 The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bank Guarantee (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason therefore.

6.1.3 To immediately cancel the contract, if already signed without giving any compensation to the TENDERER.

6.1.4 To recover all sums already paid by the BUYER, and in case of an Indian TENDERER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a TENDERER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the TENDERER from the BUYER in connection with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.

6.1.5 To encase the advance bank guarantee and performance guarantee/warranty bond, if furnished by the TENDERER, in order to recover the payments, already made by the BUYER, along with interest.

6.1.6 To cancel all or any other contracts with the TENDERER. The TENDERER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the TENDERER.

6.1.7 To debar the TENDERER from participating in future bidding processes of the Government of India for a minimum period of two years, which may be further extended at the discretion of the BUYER.

6.1.8 To recover all sums paid in violation of this pact by the TENDERER(s) to any middleman or agent or broker with a view to securing the contract.

6.1.9 In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the TENDERER, the same shall not be opened.

6.1.10 Forfeiture of Performance Bank Guarantee in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

6.2 The BUYER will be entitled to take all or any of the actions mentioned at para 6.1.1 to 6.1.10 of this Pact also on the Commission by the TENDERER or any one employed by it or acting on its behalf (whether with or without the knowledge of the TENDERER), of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the BUYER to the effect that a breach of the provisions of this pact has been committed by the TENDERER shall be final and conclusive on the TENDERER. However, the TENDERER can approach the independent monitor(s) appointed for the purposes of this pact.

7. Fall Clause

The TENDERER undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/ Department of the Government of India or PSU and if it is found at any stage that similar product/system or subsystem was supplied by the TENDERER to any other Ministry/Department of the Government of India or PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the TENDERER to the BUYER, if the contract has already been concluded.

8. Independent monitors

8.1 The BUYER has appointed Independent Monitors (hereinafter referred to as Monitors) for this pact in consultation with the Central Vigilance Commission (Chief Vigilance Officer, Indian Institute of Technology Jammu).

8.2 The task of the Monitor shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this pact.

8.3 The Monitor shall not be subject to instructions by the representatives of the parties and performs their functions neutrally and independently.

8.4 Both the parties accept that the Monitor have the right to access all the documents relating to the project/procurement, including minutes of the meetings.

8.5 As soon as the Monitor notices, or believes to notice, a violation of this pact, he will so inform the Authority designated by the BUYER.

8.6 The TENDERER(s) accepts that the Monitor has the right to access without restriction to all project documentation of the BUYER including that provided by the TENDERER. The TENDERER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the TENDERER/Subcontractor(s) with confidentiality.

8.7 The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

8.8 The Monitor will submit a written report to the designated Authority of BUYER/ Secretary in the Department/within 08 to 10 weeks from the date of reference or intimation to him by the BUYER / TENDERER and, should the occasion arise, submit proposals for correcting problematic situations.

9. Facilitation of Investigation

In case of any allegation of violation of any provisions of this pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of

Accounts of the TENDERER and the TENDERER shall provide necessary information & documents in English and shall extend all possible help for the purpose of such examination.

10. Law and Place of Jurisdiction

This Pact is subject to Indian Law. The place of performance and Jurisdiction is the Seat of the BUYER.

11. Other Legal Actions

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

12. Validity

12.1 The validity of this Integrity Pact shall be from date of its signing and extend upto 3 years or the complete execution of the contract to the satisfaction of both the BUYER and the TENDERER/Seller, including warranty period, whichever is later. In case TENDERER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

12.2 Should one or several provisions of this pact turn out to be invalid, the remainder of this pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

13. The parties hereby sign this Integrity Pact.

BUYER

TENDERER

Mohanlal Sukhadia University, Udaipur

Signature with seal

Date & Place:

Date & Place:

Witness

Witness

1. _____

1. _____

(Indenter)

ANNEXURE -VII

Training Requirement

1.	Product Description	Fluorescence Spectrophotometer
2.	No of Attendees	10
3.	Type of Training	a. Operational Training
		b. End User Training
		c. Maintenance Training

TENDERER

Signature with seal



DEPARTMENT OF PHYSICS
MOHANLALSUKHADIA UNIVERSITY, UDAIPUR

Email: physics@mlsu.ac.in

BID SUBMISSION

Online Bid Submission:

The Online bids (complete in all respect) must be uploaded online in **Three** Envelops as explained below:-

Envelope – 1			
(Following documents to be provided as single PDF file)			
Sl. No.	Documents	Content	File Types
1.	Fee Documents	NEFT/RTGS/UTR No and Date/Bank Details Bid Fess RISL Processing Fee EMD Details etc.	.PDF
Envelope – 2			
(Following documents to be provided as single PDF file)			
Sl. No.	Documents	Content	File Types
1.	Technical Bid	Compliance Sheet as per Annexure – I	.PDF
2.		Organization Declaration Sheet as per Annexure – II	.PDF
3.		List of organizations/ clients where the same products have been supplied (in last two years) along with their contact number(s). (Annexure-III)	.PDF
4.		Format For Performance Bank Guarantee (Annexure IV)	.PDF
5.		Mandate Form for Electronic Fund Transfer/RTGS Transfer (Annexure V)	.PDF
6.		Integrity Pact (Annexure VI)	.PDF
7.		Technical supporting documents in support of all claims made at Annexure-I	.PDF
8.		Submit an Undertaking regarding non-blacklisting of firm on judicial stamp of Rs. 100/-	.PDF
Envelope – 3			
Sl. No.	TYPES	Content	File Type
1.	Financial Bid	Price bid Annexure-VIIIA	BOQ
		Annexure-VIIIB	BOQ
2.		Financial Bid Documents	.PDF



DEPARTMENT OF PHYSICS
MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

Email: physics@mlsu.ac.in

Annexure-VIIIA

DEPARTMENT OF PHYSICS
Mohanlal Sukhadia University, Udaipur, 313001

Date: XX/XX/XXXX

Subject: Purchase of <Item> (Following format is used for imported items)

S. No.	Currency	Description and Specification of the Item	Qty. in Units	Unit Price (a)	Discount (b)	Ex-works price (c=a-c)	Packing + Handling + DOC + Inland Freight + FCA (d)	FOB/FCA Airport Price (e=c+d)	Insurance + Freight (f)	CIF Price, (e+f)	FOR, Udaipur, Price
1		Electrochemical Workstation as per specification	1 no								

Note: At any circumstances, it is the responsibility of the foreign supplier to hand over the system to forwarder at the origin airport after completing all the inland clearing and ensure the supply at MLSU, Udaipur. No Ex-works consignment will be entertained.



DEPARTMENT OF PHYSICS
MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

Annexure-VIIB

For indigenous items please quote as per following format.

S. No.	Description and Specifications of the Item (As per specifications given in 'Technical Specifications')	Qty. in Units	Unit Price in Rs	Taxes as applicable against DSIR Certificate	Total Price in Rs.
1.	Electrochemical Workstation as per specification	1 Nos.			

Note: The above financial template should be strictly followed. Any deviation from the above template (in terms of description and specification of the item) may lead to cancellation of the tender.

FINANCIAL BID FORM (Please submit in PDF item wise rate)

To: Head, Department of Physics, Mohanlal Sukhadia University, Udaipur - 313001

Name of Supply: **Electrochemical Workstation**

Name of Supplier:

S. No.	Item & specifications	Rate per unit including all cost (F.O.R., Udaipur) excluding taxes	Custom Duty and other taxes as applicable against DSIR certificate	Total Price (F.O.R Udaipur)
1.	<p>Electrochemical Workstation</p> <ul style="list-style-type: none"> ➤ Electrochemical workstation (One channel with Bi-Potentiostat or Two channel) should provide with power supply 220V/50Hz, interface cable for serial port/USB port, cell cable, windows-based acquisitions software, manuals & installation etc. ➤ This workstation should be able to study General Electrochemistry, Corrosion, Battery, Supercapacitor, Electro-catalysis, Photovoltaic/ Fuel cells, Sensors, Energy Applications etc. ➤ This Electrochemical workstation should be able to perform two electrodes as well as three electrode tests. ➤ This workstation should be coupled with rotating ring disk electrode (RRDE) and other accessories to perform various studies and capable for conducting reaction kinetic studies and hydrodynamic EIS studies on various catalysts using RRDE set-up. ➤ This workstation must have provision for parallel measurements of 2 working electrodes in one Cell Setup with common Reference and common Counter Electrodes. ➤ On site calibration of the channel with dummy should be available. <p>Specifications: Electrode Connection : 2, 3, 4 (WE, S, CE and RE)</p> <ul style="list-style-type: none"> ➤ Floating/ Ground operation : User selectable ➤ Maximum Current : ± 2 A or more ➤ Compliance Voltage : ±30 V or better ➤ Applied Voltage Range : ±10 V or better ➤ Current Ranges : ± 10 nA to 1A or better (with several range) 			

<ul style="list-style-type: none"> ➤ Measured Current Resolution : 0.003% of current range or better ➤ Measured Potential Resolution : 0.3 μV or better ➤ Applied Potential Resolution : 150 μV or better ➤ Current Accuracy : \pm 0.2 % or better ➤ Applied Potential Accuracy : \pm 0.2 % or \pm2 mV or better ➤ Electrochemical Impedance Spectroscopy: 1 Nos. ➤ Frequency Range : 10μHz to 1MHz or better ➤ Frequency Accuracy : 0.003% or better ➤ Input Impedance : 1TΩ or better ➤ Input Bias Current : <20pA or better ➤ Bandwidth of Electrometer : > 4 MHz or better ➤ Maximum Scan Rate : 1000 V/s or better (with several steps) ➤ IR/Ohmic Drop Compensation : Current Interrupt, positive feedback ➤ A/D Converter : 16 bit or better ➤ Interface to PC: USB <p>Specifications of Complete Software Package with Measurement Techniques</p> <p>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, Complete battery and supercapacitor cycling software facility with following options: Galvanostatic Charge / Discharge (Including C rate control) with voltage vs. time, Graph plots, Multigraph display option within a single window, Customize variables graph plot for each axis, Voltage vs. Capacity plot during Charge/Discharge Cycles, Atleast 3 limits and 3 recording conditions per sequence/cycle (ability to limit a cycle or changeover to next sequence with Time, Voltage/Current, Charge/Power all simultaneously), Multiple recording conditions. CC-CV Method (Constant Current – Constant Voltage), Cyclic Voltammetry, Current Scan (Current/Galvano Dynamic), Voltage Scan (Potentio Dynamic), Constant Power / Constant Resistance, GITT and PITT Techniques Battery Characterization -Polarization Curve measurement/IV Testing/ Linear Sweep Voltammetry should be available down to 0 Volt. OCV/OCP, Cyclic Voltammetry, Chrono Amperometry, Chrono Potentiometry, Staircase Voltammetry, Corrosion – Linear and Cyclic Polarization, Pitting, Corrosion, ZRA, Columbic Efficiency Determination with fitting tool, Current Interrupt, Rest Time, Multiple loops, Option to update the experimental setting parameters on current running experiment without</p>			
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<p>pausing /stopping the channel/experiment, Stepwise Potential Fast Chronoamperometry: SPFC, Life Cycle Tests for battery and supercapacitor, Analysis tools like Integral, Circular or linear fit and Electro chemical EIS -Z fit should be available, Experimental Techniques like All Voltamperometric techniques including Levich Plot: Levitch etc. All Voltamperometric techniques Like: OCV, CV, CVA, LSV, CA/CC, CP, SV, ACV, Levitch, Impedance Spectroscopy: GEIS, PEIS, SGEIS, SPEIS, Pulsed techniques: DPV, SWV, NPV, RNPV, DNPV, DPA, Manual Control: Current Manual Control, Potential Manual Control, Ohmic Drop determination: Manual IR compensation, IR Compensation (PEIS), Current Interrupt, Batteries testing: BCD, CCCV, GCPL, MB, CED, CLD, CPW, APGC, PPI, GPI, RPI, PWPI, CV, Bipotentiostat techniques: CV-CA, CP-CA, CA-CA, Corrosion: Ecorr versus Time, Linear Polarization Resistance – LPR, Tafel Plot, Cyclic Polarization, Cyclic, Potentiodynamic Polarization – Critical Pitting Temperature-CPT, Depassivation Potential, Potentiodynamic Pitting, Potentiostatic Pitting, Electrochemical Noise, Biased Electrochemical Noise, Photovoltaics/Fuel cells: I-VC, CLD, CPW, CstC, CstV, Supercapacitors: CV, CstV, CstC, CS, Other Applications: Polarization Resistance, Stepwise Potential Fast Chronoamperometry, Anodic Stripping Voltammetry, RRDE, User Building Techniques: Modular Potentio, Modular Galvano, Trigger In/ Out, Temperature Control, RRDE Control, External Device Control, Loop, Pause, Reverse Normal Pulse Voltammetry: RNPV, Differential Normal Pulse Voltammetry: DNPV, Differential Pulse Amperometry: DPA, Ohmic Drop determination, Potentiodynamic Cycling with Galvanostatic Acceleration: PCGA, Modulo Bat:MB, Polarization Resistance: PR, The RRDE software should have fully automated analysis and plotting option for Levich and Koutecky-Levich analysis etc.</p> <p>Electrochemical Impedance Spectroscopy (EIS) Real-time fit and simulation analysis as well as live data plotting option for simulation plot must be available as default software protocol. Real time needed for Lissajous curve, Nyquist, Bode, Admittance and Dielectric & Mott-Schottky. The fit and simulation software should include basic options such as find circle, element subtraction and an equivalent circuit library with all the modern EIS equivalent circuit models, multiple visible plots in real times. EIS Modelling with Equivalent Circuit Fits. Simultaneous impedance measurement at counter electrode and working</p>			
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<p>electrode. EIS Quality Indicators should be provided. EIS measurements simultaneously on the working and on the counter electrodes. Graphic Representation of Equivalent Circuit with user selectable circuit elements and their values in the circuit. Impedance fitting tool with battery diffusion elements available (restricted diffusion, restricted modified diffusion, restricted linear diffusion). The impedance fitting tool should have different fitting algorithms. Modify on Fly should be available to update experimental setting parameters on current running experiment without pausing/stopping.</p> <p>Rotating Ring Disk Electrode (RRDE) Setup</p> <ul style="list-style-type: none"> ➤ Suitable for RRDE and RDE applications. ➤ The RRDE cell should have gas-purging option as well remotely controlled dosing pump. ➤ The rotor should have the capability for remote as well as manual control ➤ Rotation range: 100 to 10,000 rpm with applied resolution 1 rpm ➤ RDE/RRDE Kit (Rotator with driveshaft controlled remotely and manually, Motor-controller unit, Connection cable, Power adaptor, BNC cable, Rotator fixing bar etc): 1 No. ➤ RRDE cell stand (Base plate, stand rod, rotator clamp with sealer cap, O-ring etc.): 1 No. ➤ 150ml Voltametry Cell (with glass stopper, Inlet tube, Outlet tube, etc). : 1 No ➤ Pt Counter Electrode for RRDE: 1 No. ➤ Ag/AgCl Reference Electrode for RRDE: 1 No. ➤ Glassy Carbon RDE Electrode: 1 No. ➤ RRDE GC Disk / Pt. Ring Electrode – 1 No. ➤ Polishing Kit: 1 No. <p>Accessories</p> <ul style="list-style-type: none"> ➤ Electrochemical Cell System with stand and base plate: 2 (50 and 100 ml) glass cells with one Cell tops with gas inlet/out tube ➤ Pt Working Electrode: 1 no ➤ GC Working Electrodes: 2 no (OD: 6mm –ID: 3mm) ➤ Ag/AgCl Reference Electrodes: 2 no (aqueous and non-aqueous). ➤ Pt Wire Counter Electrodes: 1 no (0.5 mm diameter) <p>Expandability Options/ Up-gradation with accessories</p> <p>This workstation must have expandable options/up-gradation with accessories to cater for the future expansion need such as: Power Boosters, LED optical bench for photo-modulated electrochemical/EIS analysis with</p>			
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	<p>interchangeable LED holders, Programmable LED Sources, Battery Holder, Corrosion Kit, etc.</p> <p>Installation & Commissioning Installation and commissioning of the equipment has to be carried out by supplier at our laboratory in Department of Physics, MLSU, Udaipur and the performance has to be demonstrated. Onsite training must be provided to our personnel on the installed equipment for operation and data processing.</p> <p>Standard warranty Three year for complete system along with accessories from date of installation of the equipment at site</p> <p>Offer and documents Vendor must provide supporting technical literature, proprietary/patent certificates wherever applicable.</p>			
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Signature of Tenderer

Name: _____

Designation: _____

Organization Name: _____

Contact No.: _____