

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

2A & 2B , Raja S.C. Mullick Road, Jadavpur, Kolkata-700032

NIT No.: IACS/SCSAM/22-23/58

Date: 18/01/2023

Sealed tender in two bids system (technical bid and price bid) is invited from bonafide, resourceful and eligible manufacturer/exclusive distributor/vendors for ONE **Electrochemical Analyzer/Workstation**.

Part-I (Technical Bid) of the tender should contain technical specifications in detail as well as commercial terms and conditions. Part-II (Price Bid) should clearly indicate group-wise price, if needed, as mentioned in the technical bid. The Technical Bid and Price Bid are to be submitted in separately sealed envelopes, distinctly marked accordingly and both to be put inside another envelop, that should be sealed and superscribed with tender notice no. and due date. The bidders may submit bids duly signed in their own letterheads.

Completed tender bids should reach the office of the **Registrar, Indian Association for the Cultivation of Science (IACS), 2A & 2B Raja S. C. Mullick Road, Jadavpur, Kolkata-700032** on or before the scheduled date and time specified below:

Tender Notice No.	NIT No. IACS/SCSAM/22-23/58 Date: 18-01-23
Last date and time of submitting tender	03.02.2023 at 1:00 P.M.
Pre-bid meeting (date, time & place) to discuss technical specification	25.01.2023 at 3 PM in the office of Prof. Amit Majumdar, School of Chemical Sciences, IACS
Date and time of opening tender (Technical Bids)	03.02.2023 at 3:30 P.M.
Place of opening tender	In the office of Prof. Amit Majumdar, School of Chemical Sciences, IACS
Date and time of opening of Price Bid	The Price Bids of the bidders qualifying the technical bid will only be opened, the date of which will be intimated to the short-listed bidders at their email addresses. The rest of the bids will be rejected.
Contact	Email: icam@iacs.res.in Tel: +91 33 2473 4971 (Ext 1165)

The technical bids will be opened first to judge/evaluate the technical specifications of the said instrument and thereafter the price bids of only technically qualified bidders will be opened.

Technical Bid Evaluation: The Technical Bids will be evaluated in the presence of the representatives of intending bidders who will be able to clarify technical aspects of their bids, if any, required by the Technical Evaluation Team.

Opening of price-bid: The Price Bids of the bidders qualifying the technical bid will only be opened, the date of which will be intimated to the short-listed bidders at their email addresses. The rest of the bids will be rejected.

Please note that IACS will not provide any accommodation or reimburse any expenses to any of the bidders for attending opening of technical bid.

Quotations received incomplete or beyond the stipulated time will be summarily rejected.

Bidders should submit their past experience for supplying and successful installation of similar units to other research Institutes/Universities/other organizations in India and abroad. Please provide documentary

proofs of such successful installation and supportive documents that the instruments are running successfully.

1. TECHNICAL BID

The technical bid should contain technical specifications and should be kept in a separate sealed envelope duly superscribed as 'TECHNICAL BID' on the outer cover of the envelope as already detailed above. **It should be clearly mentioned on the envelope as "Technical Specification for Inert Atmosphere Glove Box ".**

Technical Specifications for Electrochemical Workstation

The Electrochemical Analyzer / Workstation and the accessories should be manufactured and sold by the same parent company or its agents.

General specifications:

1. The Electrochemical Analyzer / Workstation and the accessories should be manufactured and sold by the same parent company or its agents.
2. Stable and accurate potential and current control, dual channel data acquisition at high speed.
3. Windows based acquisition software, including power supply, interface Cable for USB port, cell cable, manuals. Licensed and full version of software for all the functions and procedures, software upgradation should be provided free of cost as and when necessary, after selling.
4. The Electrochemical Analyzer / Workstation must include all of the following measurement techniques and related accessories:
 - (i) Cyclic Voltammetry (CV)
 - (ii) Linear Sweep Voltammetry (LSV)
 - (iii) Chrono Amperometry (CA)
 - (iv) Chrono Coulometry (CC)
 - (v) Differential Pulse Voltammetry (DPV)
 - (vi) Normal Pulse Voltammetry (NPV)
 - (vii) Square Wave Voltammetry (SWV)
 - (viii) Bulk Electrolysis with Coulometry (BE)
 - (ix) Open Circuit Potential – Time (OCPT)
 - (x) CV simulator
 - (xi) IR Compensation
 - (xii) External Potential Input
 - (xiii) Auxiliary Signal Measurement Channel
5. **Electrochemical Cell System** must include at least one unit (except multiple glass cells) for all of the following items:
 - (i) At least 4 glass cells with one Cell top
 - (ii) Pt Working Electrode
 - (iii) GC Working Electrode
 - (iv) Ag/AgCl Reference (aq)
 - (v) Ag/AgCl Reference (non aq)

- (vi) Calomel Reference Electrode
- (vii) Pt Wire Counter Electrode
- (viii) Electrode Polishing Kit
- (ix) Cell Stand

Potentiostat specifications:

- (i) Zero resistance ammeter
- (ii) Standard configuration (2- or 3- or 4-electrode)
- (iii) Maximum potential: At least $\pm 10\text{V}$
- (iv) Maximum current: At least $\pm 250\text{ mA}$ continuous, $\pm 350\text{ mA}$ peak
- (v) Compliance Voltage: At least $\pm 12\text{V}$ or better
- (vi) Potentiostat rise time: At least $< 1\text{ }\mu\text{s}$
- (vii) Applied potential ranges: At least $\pm 10\text{mV}$ to $\pm 10\text{V}$
- (viii) Potential resolution: 0.002 % of potential range or higher resolution
- (ix) Potential accuracy: $\pm 1\text{ mV}$ or better
- (x) Potential noise: $< 10\text{ }\mu\text{V}$ rms or lower
- (xi) Preferred current range: At least $\pm 10\text{ pA}$ to $\pm 0.25\text{ A}$
- (xii) Preferred current resolution: 0.002 % of current range or higher resolution
- (xiii) Current measurement accuracy: Less than 0.5% (in the current range $\geq 1\text{e-}6\text{A/V}$)
- (xiv) Input bias current: At least $< 20\text{ pA}$

Galvanostat specifications:

- (i) Galvanostat applied current range: $3\text{nA} - 250\text{mA}$ or larger range
- (ii) Applied current accuracy: Less than 0.5% (in the current range $> 3\text{e-}7\text{A}$)
- (iii) Applied current resolution: Less than 0.05% of applied current range
- (iv) Preferred potential range: $\pm 0.025\text{V}$ to $\pm 10\text{V}$ or larger range
- (v) Preferred potential resolution: 0.002 % of measured range or higher resolution

Experimental Parameters:

- (i) CV and LSV scan rate: 0.000001 to 10,000 V/s or better
- (ii) Potential increment during scan: 0.1 mV @ 1,000 V/s or better
- (iii) CA and CC pulse width: 0.0001 to 1000 sec or better
- (iv) CA and CC minimum sample interval: 1 μsec or lower
- (v) DPV and NPV pulse width: 0.001 to 10 sec
- (vi) SWV frequency: 1 to 100 kHz
- (vii) i-t sample interval: minimum 1 $\mu\text{ sec}$ or lower

Other specifications:

- (i) Flash memory for quick software update
- (ii) Serial port or USB port selectable for data communication
- (iii) Cell control: purge, stir
- (iv) Digital CV simulator, user defined mechanisms

Previous records:

- (1) International installation records.

(2) More than 10 successful installations in Kolkata or eastern region in addition to any standing purchase orders or on-going processes. Proper proof for such installations in eastern region should also be furnished.

(3) Customer satisfaction reports for at least 5 individual users should be furnished.

NOTE THAT only mentioning of complied/meeting specification will not lead to technical qualification. Proper reference/documentation need to be attached.

Service: Local service should be available. Details of experienced service engineer including contact details should be provided.

Warranty: Minimum one year warranty with additional one year free of cost AMC.

Installation: Free installation and user training at IACS.

The following optional items should be quoted separately.

OPTIONAL Items to be Quoted.

1. **Computer:** One fully functional computer from reputed brand with original OS and softwares. Minimum configuration should be i5 core, 16 GB RAM, 1 TB HDD, or better.
2. **Coulometry cell assembly:** Must include at least one unit for all of the following items:
 - (i) Teflon cell cap
 - (ii) Voltammetry, spectral cum coulometry cell
 - (iii) Pt. Working electrode
 - (iv) Pt.flag counter electrode
 - (v) Pt.wire guage WE for coulometry

Please SUBMIT ITEMIZED QUOTES with separate pricing for each accessory. Bidders are requested to provide price in FOB, CIF as well as FORD IACS basis. The quote must include insurance charges for the instrument and this should be clearly mentioned.

Installation/Demonstration/Application training at site: Installation & user training at IACS, free of cost by the supplier.

Service facility: In India, preferably Kolkata, supplier should mention their details of service setup and man powers who are responsible for after sales support. Response time should be within 24 hrs.

A compliance table (see below) must be prepared and submitted along with the technical bid.

Sr. No	Tender specification	Your offered instrument specification	Extent of compliance

Tender will not be accepted if the technical compliance chart is NOT provided following the above format.

2. PRICE BID

The financial bid indicating (item-wise) price for the item(s) mentioned in the technical bid should be kept in a separate sealed envelope duly super scribed as 'PRICE BID' on the outer cover of the envelop as already detailed above. Price bids of only technically qualified bidders will be opened and they will be intimated the date and time of the opening of price bid at their e-mail ids. Rest of the bidders will stand rejected.

PRICE: Price to be quoted on BOTH CIF Kolkata and FOB basis.

3. BID SECURITY:

An Account payee Demand Draft of any of the Commercial Banks for Rs. 30,000/- (Rupees thirty thousand only) drawn in favour of "Indian Association for the Cultivation of Science (State Bank of India, Jadavpur University Branch, A/C No. 11079699211, IFSC: SBIN000093, MICR Code: 700002048)" is to be furnished by the bidders along with Technical Bid, except Micro and Small Enterprises (MSEs) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) or are registered with the Central Purchase Organisation or the concerned Ministry or Department.

Alternatively, the bidder shall have the option to furnish EMD in the form of Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee from any of the Commercial Banks. The Bid-Security should have at least 90 (ninety) days validity period beyond the final bid validity period.

In case of non-award of the work the Bid Security money would be returned to the unsuccessful Bidders.

4. PERFORMANCE SECURITY:

An Account Payee Demand Draft on any commercial bank of India or Bank Guarantee (BG) of any Commercial Bank preferably located at Kolkata of 10% of the order value in the name of "Indian Association for the Cultivation of Science" is to be furnished by the successful bidder as Performance security. Performance security money should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the supplier including warranty obligations. Bid security money or EMD will be refunded to successful bidder on receipt of the Performance security money.

5. TERMS OF PAYMENT:

Payment will be made through irrevocable Letter of Credit in two instalments. 90% of the money will be released on submission of shipping of documents. Remaining 10% will be released after successful installation of the instrument.

6. GENERAL INSTRUCTIONS:

1. Validity of tender: Tender submitted should remain valid for at least six months from the date of opening the tender. Validity beyond six months from the date of opening of the tender shall be lapsed by mutual consent.
2. The tender should accompany a compliance chart.
3. Incomplete and conditional tenders as well as tenders received after the due date will be summarily rejected without assigning any reasons thereof.
4. At any time prior to the bid due date, IACS may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder during pre-bid meeting, modify the bidding documents. The amendment(s) will be notified on the institute website. Prospective bidders are advised to occasionally to visit the website (www.iacs.res.in/tender) for any amendment.

5. Installation/Demonstration/Application training at site: Installation & user training at IACS, free of cost by the supplier.
6. Service facility: In India, preferably Kolkata, supplier should mention their details of service setup and man powers who are responsible for after sales support. Response time should be within 24 hrs.
7. The model number, make and a printed literature of the product should be submitted positively.
8. Proposed delivery schedule should be mentioned clearly.
9. Manufacturers / exclusive distributors / vendors should have history of supplying this type of instruments to this or other scientific organizations. Availability of a list in this regard would be preferred.
10. Authorized dealership certificate should be provided in case of principal manufacturing company is not quoting directly.
11. Guarantee certificate, users manuals etc. are to be handed over to the user after successful commissioning of the system.
12. In the event of date being declared a closed holiday for purchaser's office, the due date for submission of bids and opening of the technical bids will be the following working day at the appointed time.
13. In case of any dispute, the decision of IACS authority shall be final and binding on the bidders.
14. In case of any litigation the matter will be dealt within the jurisdiction of the High Court of Calcutta only
15. For any clarification regarding technical specifications, information etc., please send your queries to Prof. Amit Majumdar (icam@iacs.res.in).
16. The authority of IACS reserves the right to reject any or all of the tenders received without assigning any reason thereof.

Registrar