

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

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

NIT No: IACS/CSS/UM/20-21/46 Date: 04/03/2021

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

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 envelope, 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/CSS/UM/20-21/46 Date: 04-03-2021
Last date and time of submitting tender	24-03-2021 12.30 PM
Pre-bid meeting(date, time & place) to discuss technical specification	11--03-2021, 3.00 PM (online)
Date and time of opening tender (Technical Bids)	25-03-2021, 11.30 AM
Date and time of opening of Price Bid	25-03-2021, 04.00 AM
Contact	Email: urmimala.maitra@iacs.res.in Tel.+91 33 2473 4971 [Ext1202]

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 Battery Cycler".

Technical Specification for Battery Cycler:

No. of Independent channels required: 32

Technical Specification for channels 1-24:

1. **Voltage range:** 0-10 V or better
2. **Voltage accuracy:** 0.01% or better
3. **Voltage control resolution:** 150 μ V or better
4. **Maximum current:** at least $\pm$ 150 mA per channel
5. **Minimum current:** at least $\pm$ 10 μ A per channel
6. **Current ranges:** at least 4-5 current ranges (10 μ A ñ 150 mA) with automatic current ranging.
7. **Current accuracy:** <0.05% FSR or better
8. **Current control resolution:** 800nA or better

9. **Data Acquisition/ Sampling Rate:** 2ms or better
10. **High Precision Coulometry measurements:** 10 ppm or better
11. **Cell Connections:** 4 terminal leads

Technical Specification for channels 25 -32:

1. **Voltage range:** 0-10 V or better
2. **Voltage accuracy:** 0.01% or better
3. **Voltage control resolution:** 150 μ V or better
4. **Maximum current:** at least ± 1.5 A per channel
5. **Minimum current:** at least $\pm 100\mu$ A per channel
6. **Current ranges:** at least 4-5 current ranges (10 μ A ñ 150 mA) with automatic current ranging.
7. **Current accuracy:** <0.05% FSR or better
8. **Current control resolution:** 8 μ A or better
9. **Data Acquisition/ Sampling Rate:** 2ms or better
10. **High Precision Coulometry measurements:** 10 ppm or better
11. **Cell Connections:** 4 terminal leads
12. **Electrochemical Impedance Spectroscopy provision on all 8 channels**
13. **EIS Frequency range:** at least 10mHz -10KHz

Software related specifications:

Battery cycling software is required with options for the following tests:

1. Galvanostatic Charge / Discharge (Including C rate control) with voltage vs. time Graph plots
2. Voltage vs. Capacity plot during Charge/Discharge Cycles
3. Multigraph window capable of displaying up to 50 graphs within a single window
4. Customize variables graph plot for each axis
5. 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)
6. Multiple recording conditions with óORô commands
7. Industrial CC-CV Method (Constant Current ñ Constant Voltage)
8. Cyclic Voltammetry, Current Scan (Current/Galvano Dynamic), Voltage Scan (Potentio Dynamic)
9. Constant Power / Constant Resistance
10. GITT and PITT Techniques
11. Columbic Efficiency Determination with fitting tool
12. Current Interrupt
13. Rest Time

14. Multiple loops
15. Theoretical Capacity Determination
16. Provision to connect and control External devices like Furnace, Thermal chambers
17. Monitoring status of each Channel using Global Table/Summary Table
18. Modify on Fly should be available to update experimental setting parameters on
19. Current running experiment without pausing/stopping the channel/experiment
20. Profile Importation Option to study Urban Life Cycle Tests
21. Analysis tools like Integral, Circular or linear fit should be available

Technical specifications for Accessories:

Chassis: One multichannel modular chassis. The chassis should at least be expandable upto 48 Channels there should be option to set safety limit on each channel so that the channel can be shut down the channel in the event of experiment glitches. Manual emergency stop button should also be provided for the chassis to stop the whole equipment in case of emergency.

Connection kit details:

Cell Cables: atleast 2 Meter long each

Coin cell Holder: at least 40 Nos

Alligator clip (Blue, 2mm) ñat least 5nos

Alligator clips (Red, 2mm)- at least 5nos

Alligator clips (Blue, 4mm)- at least5nos

Alligator clips (Red, 4mm)- at least5nos

Warranty: Standard 1 year warranty or more with lifetime support

Service Facility within India is a must, while service engineering stationed at Kolkata will be preferred.

AMC Charges should be mentioned in quotation and after the end of warrantee, AMC should be applicable as per quotation.

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

Please SUBMIT ITEMIZED QUOTES with separate pricing for each accessory

Delivery and Taxes:

- Door delivery
- All Custom duty and service taxes must be paid by the respective company.

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. 1,00,000/- (Rupees One Lakh 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 Dr. Urmimala Maitra (urmimala.maitra@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.

Acting Registrar

NOTE:

- 1) **WARRANTY:** Minimum one-year warranty with additional AMC for the next two years. (as per requirement of the indenter)
- 2) **PRICE:** Price to be quoted on BOTH CIF Kolkata and FOB basis or as per the requirement of the indenter.
- 3) **BID SECURITY:** Amount of bid security may be accepted in the range between two percent to five percent of the estimated value of the goods to be procured.
- 4) **PERFORMANCE SECURITY:** Performance Security may be accepted for an amount of five to ten percent of the value of the contract as specified in the bid documents.
- 3) **TERMS OF PAYMENT:** As per nature of the transaction
- 4) **GENERAL INSTRUCTIONS :-**
Item No.- 5: Installation/Demonstration/Application training at site: This may be modified as per the requirement of the indenter/technical committee.

Item No. - 6: Service facility: This may be changed by the indenter as per requirement.