



जवाहरलाल नेहरु उन्नत वैज्ञानिक अनुसंधान केन्द्र
(मान्यता प्राप्त विश्वविद्यालय)
JAWAHARLAL NEHRU CENTRE FOR ADVANCED SCIENTIFIC RESEARCH
(A Deemed University)

जक्कूर, बेंगलूर - 560 064, भारत / Jakkur P.O., Bengaluru - 560 064. INDIA
विज्ञान और प्रौद्योगिकी विभाग, भारत सरकार
Department of Science & Technology, Government of India

JNC/PUR/ICMS/TKM/2020-2021/FE-74

04/01/2021

REQUEST FOR QUOTATION

JNCASR intends to procure one number of "Electrochemical workstation with bipotential" as per broad specifications given in Annexure – 1 enclosed.

General Terms and Conditions:

1. Any item not specifically mentioned in the technical specification but essential for successful implementation of the system (in the opinion of the bidder) must be brought to our notice and quoted accordingly.
2. At the time of installation, if it is found that some additional items are required to meet operational requirement of the configuration, but not included in the bidder's original list of deliverables, the bidder shall supply such items to ensure completeness of the configuration at no extra cost.
3. Delivery period will be eight weeks from the date of Purchase Order. Once delivered to onsite, the installation, commissioning and acceptance period will be within two weeks from the date of delivery of equipment.
4. The successful bidder immediately after the award of the Purchase Order shall prepare a detailed plan of installation as proposed to be followed by placement of the equipment, etc.
5. System Installation and integration of all supplied equipment and software (if any) shall be done by the successful bidder. Subcontracting in any form is not allowed.
6. Bidders should clearly specify after sales/service/application support/AMC capabilities.
7. Warranty for the complete system to be for two years.
8. Provide all information as regards to pre-installation requirements (i.e. room, environment) for system installation, if necessary.


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वीर्य भंडार एवं क्रय अधिकारी/SR. STORES & PURCHASE OFFICER
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9. Bid security declaration as per format enclosed may be furnished on your letter head.
10. Performance Bank Guarantee: Successful bidder has to submit 10% PBG valid for two years immediately after installation and commissioning of equipment.
11. Payment terms: Preferred payment terms of JNCASR is Sight Draft. However payment would be done for 100% Irrevocable Letter of Credit, out of which 90% payment will be affected against documents through bank, balance 10% after installation, acceptance, commissioning and submission of Performance Bank Guarantee for 10% of Purchase Order value valid for two years from the date of installation/commissioning. JNCASR being DST, Government of India organization, advance payment will not be made for any supply.
12. Late & delayed quotations will not be considered.
13. As time is the essence of the contract, delivery period mentioned in the Purchase Order should be strictly adhered to. Otherwise the successful bidder will forfeit Security Deposit. If the supplier fails to supply, install and commission the system as per specifications mentioned in the Purchase Order within the due date, the supplier is liable to pay liquidated damage of 0.5% of Purchase Order value per every week of delay subject to a maximum of ten percent beyond the due date. Such money will be deducted from any amount due or which may become due to the supplier. JNCASR reserves the right to cancel the Purchase Order in case the delay is more than ten weeks. Penalties, if any, will be deducted from the Security Deposit. The maximum amount of penalty shall be ten percent. Liquidated damages shall be levied on the Purchase Order value, freight, insurance and duties.
14. The place of Applicable Law / Jurisdiction is Bengaluru, Karnataka. India.
15. Decision of the President, JNCASR will be final.

श्री. भास्कर राव / K. BHASKARA RAO
पूरे विज्ञान एवं प्रौद्योगिकी विभाग/ICMS STORES & PURCHASE OFFICER
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Price-bid:

16. Letter of Credit information: 100% Irrevocable Letter of Credit. 90% against documents through bank, balance 10% after installation & acceptance, commissioning and submission of Performance Bank Guarantee for 10% of Purchase Order value valid for two years from the date of installation/commissioning. However, LC will be opened only on receipt of Order Acceptance and upon submission of 10% of Purchase Order value as Performance Security. In case LC confirmation is required then the charges should be borne by the beneficiary. OEM shall give unconditional Bank Guarantee that when the equipment / material supplied by them is installed and commissioned at site, it shall achieve the desired objective and that in the event of performance of the system when installed not complying with the end objective or with the specifications, OEM shall provide further inputs to enable JNCASR to realize the end objectives with full compliance of the specifications contained in these documents. No additional payment will be made to the successful bidder for supply of any additional goods and services required in this regard.

Shipping Terms: Price quoted should be on FCA basis for imported items. Also provide breakup for Ex-works and CIP.


Custom Duty: Please note that JNCASR is eligible for customs duty exemption under 51/96 notification and will issue a certificate to this effect. The prices can be quoted either in foreign denominations or in INR. Exchange rates as on the date of price bid opening will be taken into account for comparison purpose.

Formats for price-bid:

Corresponding to each Part in the technical bid there should be a pricing referring to the Part name in the technical bid and mentioning quantity, unit price and total price. If there are any other charges, they should be also added at the end. All pages have to be serially numbered. References if any to technical bid should be provided along with the exact location (page number, etc). You are required to use the price bid format given by us only for commercial tender.

Warranty Replacements:

Any replacements of defective items during Warranty period (three years) is the responsibility of the successful bidder. The expenditure involved like freight charges, customs duty, insurance charges, clearance charges etc. would be borne by JNCASR.


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Submission of Proposal

The proposal should be submitted in a sealed two bid system, one containing sealed technical bid and the other one a sealed price bid. The bidder name, the nature of the envelope (either technical bid or price bid) must be clearly mentioned on top of each of the envelope. The sealed proposals must be addressed to Senior Stores & Purchase Officer, JNCASR. The proposals should be submitted at the Stores & Purchase Department, JNCASR.

Evaluation of bids:

Price bids of technically qualified bidders only will be opened on date and time that will be decided by the JNCASR.

<u>IMPORTANT DATES</u>	
<u>Last date for submission of bids (Two-bid system)</u> (a) Technical specs, acceptance of commercial terms & EMD. (b) Price bid with complete specs & item wise rates to be indicated	: <u>January 23rd, 2021 up to 2:00 PM</u>
<u>Opening of technical bids</u>	: <u>January 24th, 2021 , 3:30 P.M.</u>


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Electrochemical workstation with Bi-Potentiostat Specifications.

ANNEXURE-1



Electrochemical Techniques:

General Techniques

- Cyclic Voltammetry (CV) with simulation/fitting programs
- Linear Sweep Voltammetry (LSV) with stripping
- Bulk Electrolysis with Coulometry (BE)

Trace Metal analysis & Pulse Techniques

- Differential Pulse Voltammetry (DPV) with stripping
- Normal Pulse Voltammetry (NPV) with stripping
- Square Wave-Osteryoung Voltammetry (SWV) with stripping

Corrosion

- Tafel Plot (TAFEL), potentiodynamic deactivation, pitting corrosion, corrosion rate, linear Polarisation, Corrosion current etc.

Fuel cell

- Multi-Potential Steps (STEP)
- Multi-Current Steps (ISTEP)
- Amperometric i-t Curve (i-t) – Lifetime testing
- Polarisation I-V curves Linear Sweep
- Open Circuit Potential – Time (OCPT)

Impedance

- AC Impedance (IMP)
- Impedance – Time (IMPT) (Mott-Scottsky)
- Impedance – Potential (IMPE)
- Impedance Simulator with fitting
- Open Circuit Potential – Time (OCPT)

Battery Charge/Discharge

- Galvanostatic Charge discharge single/multiple cycle -Chrono Potentiometry (CP) with potential limits, polarity by potential or time, no. of cycles etc
- Voltage vs current density curves

Deposition Studies

- Single or Multi potential steps with charge limits, single or multi current steps, mixed voltage/current control using macro

Photovoltaic studies

- I-V measurements, I max, Pmax, Fill factor etc

General Useful Techniques

- Chrono Amperometry (CA)
- Chrono Coulometry (CC)
- AC Voltammetry (ACV) with stripping
- Differential Normal pulse Voltammetry (DPNV) with stripping
- Second Harmonic AC Voltammetry (SHACV) with stripping
- Differential Pulse Amperometry (DPA)
- Double Differential Pulse Amperometry (DDPA)
- Triple Pulse Amperometry (TPA)
- Integrated Pulse Amperometry Detection (IAPD)
- Hydrodynamic Modulation Voltammetry (HMV)
- Sweep-Step Functions (SSF)
- Chronopotentiometry with Current Ramp (CPCR)
- Potentiometric Stripping Analysis (PSA)
- Staricase Voltammetry (SCV) with stripping
- Auxiliary Signal Measurement Channel
- **RDE control (0-10V output)**
- IR Compensation
- External Potential Input

The corresponding Polarographic and stripping modes for most Voltammetry techniques are available.
Should be use for Bio Sensors applications.

Note
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Hardware Specification:

- Potentiostat / Galvanostat, 2- or 3- 4- or 5-electrode configuration
- Maximum potential: $\pm 10V$, Maximum current: $\pm 250 \text{ mA}$ & $\pm 350 \text{ mA}$ peak
- Compliance Voltage: $> \pm 13V$, Potentiostat rise time: 0.6 us
- Galvanostat applied current range: $3 \text{ nA} - 250 \text{ mA}$, Applied current accuracy: 20 pA
- Input bias current: $< 20 \text{ pA}$,
- **CV and LSV scan rate: 0.000001 to $10,000 \text{ V/s}$** two channels simultaneously.
- CA and CC pulse width: 0.0001 to 1000 sec
- IMP frequency: 0.00001 to 1 MHz (for impedance $10-1000 \text{ ohm}$),
- IMP amplitude: $0.00001V$ to $0.7V \text{ RMS}$
- Automatic and manual iR compensation, Flash memory for quick software update
- Serial port or USB port selectable for data communication
- The system should be capable to connect the RRDE system.

AC Impedance / Impedance Time / Impedance - Potential Plots

Bode : $\log Z$ vs $\log (\text{freq})$, Bode : Phase , vs $\log (\text{freq})$, Bode : $\log Z''$ & Z' vs $\log (\text{freq})$
Bode : $\log Y$ vs $\log (\text{freq})$, Nyquist ; Z'' vs Z' , Interactive 3D Plots, Admittance; Y'' vs Y'
Warburg: Z'' & Z' vs $w^{1/2}$ w-angular frequency, Z' vs $w Z''$, Z' vs Z''/w , Cot (phase) vs $w^{1/2}$

Software Features: Windows based software for data processing.

- a) **Graphic Display**
- b) Present data plot, 3D surface plot: Overlay plots: several sets of data overlaid for comparison, add data to overlay: adding data files to overlay plot, parallel plots, etc
- c) **Up-gradation of the software will be done once a year or as and when updated versions of software is available.**

Warranty: 2 Year warranty

Training:

Training should be provided to the students & staff who will be operating the system.

Optional Items should be quoted separately

- 1) 3mm dia Glassy Carbon Working Electrode
- 2) Glassy carbon rod OD:2mm L:100mm
- 3) GCE Glassy carbon electrode OD:10mm ID:5.0mm

ಶ್ರೀ. ಕಾಶ್ಯಪ್ಪ ರಾವ್ / KASHYAP RAO
ಸ್ಟೋರ್ಸ್ ಮತ್ತು ಕ್ರಯ ಅಧಿಕಾರಿ / SR. STORES & PURCHASE OFFICER
ಜ್ವಾಲಾಹರಿ ಮೆಹರು ಅಭಿವೃದ್ಧಿ ವೈಜ್ಞಾನಿಕ ಅನುಸಂಧಾನ ಕೇಂದ್ರ
JWALAHARI MEHRU CENTRE FOR ADVANCED SCIENTIFIC RESEARCH
ಜಕ್ಕುರ ಬೆಂಗಳೂರು - 560 064 / JAKKUR, BENGALURU-560 064.

Date: [insert date (as day, month and year)]

Bid No.: [ADB/ITB/.....]

We, the undersigned, declare that: We understand that, according to your tender conditions, bids must be supported by a Bid-Securing Declaration. We accept that we will automatically be suspended from being eligible for bidding in any future tenders of JNCASR for the period of time of 3 years starting from December 2020, if we are in breach of our obligation(s) under the bid conditions, because we: (a) have withdrawn our Bid during the period of bid validity specified in the Letter of Bid; or (b) having been notified of the acceptance of our Bid by JNCASR during the period of bid validity, (c) modify or change technical specifications of our bid (d) fail or refuse to execute the Contract, if required, or (d) fail or refuse to furnish the Performance Security, in accordance with tender condition.

We understand this Bid-Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of our Bid.

Signed: [insert signature of person whose name and capacity are shown] In the capacity of [insert legal capacity of person signing the Bid-Securing Declaration]

Name: [insert complete name of person signing the Bid-Securing Declaration] Duly authorized to sign the bid for and on behalf of:

[insert complete name of Bidder] Dated on _____ day of _____, _____ [insert date of signing] Corporate Seal (where appropriate)

[Note: In case of a Joint Venture, the Bid-Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid.]

Price Bid Format:

Part Name (1 to 10)	Item Description (as mentioned in technical bid)	Qty	Unit Price	Total Price
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
	Grand Total (INR)			
	Grand Total (Foreign Currency)			

