



CENTRE FOR NANO AND SOFT MATTER SCIENCES

Arkavathi, Survey No. 7 Shivanapura, Dasanapura Hobli,
Bengaluru North 562162

Autonomous Institution under the Dept. of Science & Technology, Govt. of India

INVITATION TO TENDER

No.PI2/000045/21-22

Date: 27.09.2021

To

The Centre invites sealed tender/bid from your firm for supply, installation and commissioning of the following scientific equipment.

Electrochemical Work Station

The Tender Form in Annexure I to V may be submitted along with relevant Fees and Earnest Money Deposit (EMD). The terms and conditions may clearly be noted before submission of the tender.

The form in Annexure II may duly be completed and submitted in a **sealed outer cover**, containing two **separate sealed envelopes**, clearly marked as **“Techno-Commercial Bid (Annexure III)”** and **“Price Bid (Annexure IV)”**, for identification.

The tender shall be addressed to **The Administration and Finance Officer, Centre for Nano and Soft Matter Sciences, Arkavathi, Survey No. 7, Shivanapura, Dasanapura Hobli, Bengaluru North 562162** marked with our tender reference number, due date and due time with stamp. The completed tender bids must reach this office in the combined sealed cover on or before **17.30 Hrs. of 11 October 2021**, through Speed Post / Courier / Registered Post/hand delivery.

Yours faithfully,

Sd/

Administration and Finance Officer

Encl: as above.

GENERAL INSTRUCTIONS

1. Definitions :

- a. The terms 'Purchaser' shall mean The Administration and Finance Officer, Centre for Nano and Soft Matter Sciences, Arkavathi, Survey No. 7, Shivanapura, Dasanapura Hobli, Bangalore North 562162.
- b. The term 'Supplier' shall mean the person, firm or company with whom or with which the order for the supply of Items/Equipment is placed.
- c. The terms 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by an officer duly authorized intimating the acceptance on behalf the Purchaser on the terms and conditions mentioned or referred to in the said communications accepting the tender or offer of the supplier for supply of Items/Equipment.

2. **Delivery of tender:** The offer in response to the tender invitation shall be made in two separate envelopes, the first envelope containing Annexure III along with Compliance Statement. The second envelope shall contain only Annexure IV. The two envelopes shall be super scribed with "**Techno-Commercial Bid**" and "**Price Bid**" respectively. The two envelopes may be put in one outer cover, sealed and addressed to **The Administration and Finance Officer, Centre for Nano and Soft Matter Sciences, Arkavathi, Survey No. 7, Shivanapura, Dasanapura Hobli, Bengaluru North 562162.** The tender reference number, due date and due time should be clearly mentioned on the outer cover.

The tender should be accompanied by Tender Application Fee of INR 2,000 and Earnest Money Deposit (EMD) of Rs. 1,20,000/- through SBI Collect (link : onlinesbi.com/sbicollect).

Procedure for paying through SBI Collect :- For EMD Please Select State : Karnataka/Type: Govt. Department/ Name: Centre for Nano and Soft Matter Sciences/Category : MISC Fee/ Purpose : Earnest Money Deposit. For TAF same procedure as above but choose purpose as TAF. The EMD will be refunded to unsuccessful bidders without any interest thereon. A copy of the SBI Collect receipt should be attached with the quotation in proof of remittance of EMD. Overseas bidders may remit an equivalent EMD to the Centre's Bank A/CNo.10838600274, Bank Name : State Bank of India, Jalahalli branch, IFSC Code : SBIN00963 SWIFT Code: SBININBB177.

3. **Receipt of tender:** The tender must reach this office by **17.30 hours** on the due date. Late and delayed Tenders will be liable to be rejected.
4. **Validity of the offer:** (a) The quotation should be valid for a minimum period of 120 days from the date of opening of tender. If the day up to which the offer is to remain open is declared a closed holiday, the offer shall remain open for acceptance till the next working day.

(b) Quotations qualified by vague and indefinite expressions such as 'Subject to immediate acceptance', 'subject to prior sale' or any other riders will not be considered.
5. **Opening of tenders:** The firm shall be at liberty to authorize a representative to be present at the opening of the tender at the time and date as specified in the schedule. The name and address of the representative who would be attending the opening of the tender on behalf of the firm should be indicated in the tender or a proper letter of authority be produced before the meeting.
6. **Right of acceptance:** This Centre does not pledge itself and reserves to itself the right of accepting the whole or any part of tender or portion of the quantity offered and the firm shall supply the same at the rate quoted. In case any MOQ (Minimum Order Quantity or MOU (Minimum Order Unit) is applicable, the same should be mentioned specifically.
 - (a) No correspondence /discussions /visits whatsoever will be entertained on the subject unless specifically called by this office after opening the tenders for technical discussions/ price negotiations. Any violation of this will render the quotations invalid and the firm is liable to be blacklisted.
 - (b) The Purchaser reserves the right to call for techno-commercial/price negotiations. The firm should depute competent representative for such discussion / negotiations whenever called for and he shall be competent to take on the spot decisions.
 - (c) The firm may give any of their commercial terms, if required in their techno-commercial offer only, and price quotation should contain only price.
 - (d) Office stamps of tenderers must be affixed below their signatures.
 - (e) Corrections, if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amounts quoted in words and figures, amount quoted in words shall prevail.
 - (f) The firm shall provide Banking information for payment or any other purpose

7. **Delayed supplies:** In case of delayed supplies, liquidated damages at the rate of 0.5 percent per week or part thereof of delay with a maximum of 5 percent of the value of supply order/contract will be levied.
8. **Extension of delivery time:** As soon as it is apparent that supply dates cannot be adhered to, an application shall be sent by the Supplier to the Purchaser. If failure, on the part of the Supplier to deliver the Items/Equipment in proper time shall have arisen from any cause which the Purchaser may admit as reasonable ground for an extension of the time (and his decision shall be final he may allow such additional time as he considers it to be justified by the circumstances of the case). In case of Letter of Credit the banking charges for the LC amendment will be on suppliers account.
9. **Guarantee and replacement:** The Supplier shall guarantee that the Items/Equipment supplied shall comply fully with the specifications laid down, for material workmanship and performance. The Guarantee should be as mentioned in the specification.
10. **Acceptance of items/equipment:**
- a) Items supplied are subject to inspection and acceptance and the supplier should collect/replace the rejected items at his cost and risk.
 - b) The Items/Equipment shall be tendered by the Supplier for inspection at such places as may be specified by the purchaser at the Suppliers own risk, expenses and cost.
- It is expressly agreed that the acceptance of Items/Equipment is subject to final approval by the Purchaser, whose decision shall be final.
11. **Banking charges:** All banking charges applicable outside India will be on **suppliers account**.
12. Please note that faxed/email quotations shall not be accepted under any circumstances.

NOTE : Preference will be given to 'Class-I local supplier' as per the Government of India Notification No. P-45021/2/2017-PP (BE-II) dated. 04 June 2020. Accordingly relevant documents should be submitted.

A statement showing local content is Mandatory

TENDER FORM

Tender Ref. No.

To

**The Administration and Finance Officer,
Centre for Nano and Soft Matter Sciences,
Arkavathi, Survey No. 7, Shivanapura, Dasanapura Hobli,
Bengaluru North 562162**

I/We agree to furnish required supplies/services as detailed in the Techno-Commercial Bid or such portions thereof as you may specify in the Acceptance of Tender/Supply Order at the prices given in the Price Bid in accordance with the General Terms and Conditions governing the contract/supply order enclosed hereto duly accepted on receipt of order for the same.

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

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

I/We have understood the specifications and have drawn up the Techno-Commercial Bid in accordance with the requirements and have accordingly submitted the Price Bid.

I/We understand that CeNS reserves the right to reject any or all offers without assigning any reasons. It is also understood that the offers may be accepted either in whole or in part.

The details of remittance of Tender Application Fee and EMD are as under:

Details	Demand draft enclosed	Details of EMD Remittance		
		SBI Collect Ref No & Date		
(i) Tender Application Fee (INR 2000/-)	Yes/No			
(ii) Earnest Money Deposit: (INR 1,20,000/-)	Yes/No			

If (ii) above is 'No', details of Certificate of exemption:

Date:

Signature and Seal of Supplier

Name & Address

TECHNO-COMMERCIAL BID

Tender Ref. No. : PI2/000045/21-22 dated 27.09.2021

1. Name of Tenderer:
2. Due date & due time: **11 October 2021 @ 17.30 hours**
3. Opening date & time : **Will be notified in our website.**
4. The tender shall remain valid for acceptance for 120 days, from the date of tender opening.
5. Amount of EMD – INR 1,20,000/- } SBI Collect Ref No.
6. Amount of Tender fee – INR 2,000 }
7. Schedule of requirements:

Sl. No.	Description	Quantity	Destination	Technical Specifications
			Split rates should be shown separately for (i) FOB/Ex-works, freight & insurance and for (ii) CIF/CIP Bengaluru, INDIA	

CONDITIONS FOR TECHNO-COMMERCIAL BID**TECHNICAL**

1. a) All available Technical Literature(s), Catalogue(s) and other data in support of the specifications and details of the item(s) should be furnished along with the offer.
- b) Approximate net and gross weight of the items offered shall be indicated in the offer. Packaging dimensional details should also be indicated in the offer.
- c) Insurance against all the transit and handling risks on a 'WAREHOUSE to WAREHOUSE' basis for a sum equivalent to 110% of C & F Cost shall be separately indicated.

d) SPECIFICATIONS:

Items/Equipment offered should strictly conform to our specifications indicated in Annexure V. Deviations, if any should be clearly indicated by the Supplier in their quotation. The Supplier should also indicate the Make/type and provide catalogue(s), Technical literature(s) and sample(s), wherever necessary along with the quotations. Test certificates wherever necessary should be forwarded along with the supplies.

2. Any firm representing the principal supplier should submit authorized dealership certificate in original from the principal company.
3. Full details of supplies of the same equipment(s) made to users in India, if any shall be enclosed.
4. Full details of facility of service after sales available in India for the period covered by warranty and thereafter shall be furnished.
5. A complete set of instruction and operation manual should be supplied at the time of installation.
6. Final performance should be guaranteed at the site.
- 7. Compliance Statement for the point-wise specifications in the format (Annexure-V) should mandatorily be enclosed.**
8. The Centre reserves the right to make its own assessment on any of the technical details provided and decide on the suitability of the equipment offered.

COMMERCIAL

1. Terms of payment:

A. For Imports:

- i. 90% through Letter of Credit with usance period of 30 days on proof of arrival of consignment OR through Wire Transfer against delivery. The balance 10% payment will be released after expiry of the applicable Warranty period.
- ii. The balance 10% can be considered for payment earlier, provided, a Performance Bank Guarantee for an equivalent amount of 10% of the Invoice value, having validity up to three months from the date of expiry of the applicable Warranty period, is submitted soon after installation and commissioning the equipment.

B. For Domestic Suppliers:

The payment in INR shall be made through NEFT/RTGS after successful installation and against submission of Performance Bank Guarantee equal to 10% value of the equipment, having validity up to a period of 3 months after expiry of Warranty. Complete details such as the bank account number/IFSC/SWIFT/Bank Address, etc. should be provided along with the price bid.

2. Duties, Taxes where legally leviable and intended to be claimed should be distinctly shown in the Tender.
3. **Duty Exemption:** Please note that the Purchaser is eligible for concessional Customs Duty, under the Govt. of India Notification **No. 11/280/1993-TU-V dated 18 March 2019.**
4. **Delivery period:** Delivery is the essence of the contract. The supplier should adhere to delivery schedule as indicated in the Purchase order, failing which Clause 7 of Annexure-I shall be enforced.
5. **Delivery terms:** Delivery should be upto customs Bangalore Airport in case of CIP (Bangalore) incoterms.
6. Provide List of user details in India.
7. In case Items/Equipment offered requires maintenance after the expiry of the warranty, the approximate charges for comprehensive as well as on-call basis

maintenance should be indicated. Details of availability of local support should also be given.

8. **Packing, forwarding and insurance:** The supplier will be responsible for the stores being sufficiently and properly packed for transport by air, to withstand transit hazards and ensure safe arrival at the destination. The packing and marking shall be done by and at the expenses of the supplier. The Purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the Supplier and the Purchaser shall pay only for such Items/Equipment as are actually received in good condition, in accordance with contract.
9. **Test certificate:** Wherever required, Test Certificate should be sent along with the relevant dispatch documents.
10. Prices are required to be quoted according to the units indicated in the annexed tender form. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.

PRICE BID

Tender Ref. No. : PI2/000045/21-22 dated 27.09.2021

1. Name of tenderer :
2. Due date & due time : **11 October 2021@ 17.30 hours**
3. Opening date & time : **Will be notified in our website.**
4. The tender shall remain valid for acceptance for 120 days, from the date of tender opening.
5. Rates for items given in Techno-commercial offer at Schedule of Requirements are as follows. (Adhering to the Format given below is a pre-requisite for considering the quotations):

Sl.No.	Description	Product / Catalogue No.	Qty.	Unit Price	Total Cost
(i)	Brief description, basic price, without duties / taxes if any, of complete Items/Equipment with all accessories				
(ii)	Duties / Taxes				
(iii)	Packing & Forwarding				
(iv)	Freight & Insurance	CIP Bangalore			
		Ex-works			
(v)	Handling charges, if any				
(vi)	Any other (please specify)				
(vii)	Total cost (in figures & words)				

OTHER CONDITIONS FOR PRICE BID

1. The price should be indicated on unit basis only. No unilateral revision in price will be admissible.
2. In case any of the subheads are included in the total cost, the same should be specified. Any exemption of duties / taxes / any other should be indicated. The Centre is eligible for concessional Customs Duty, under the Govt. of India Notification No. 11/280/1993-TU-V dated 18 March 2019.
3. Any optional item indicated in techno-commercial bids must be priced separately.
4. Currency in which the price is quoted must clearly be mentioned.

Specifications for Electrochemical Work Stations

Specifications for “Single (or more) channel Electrochemical Test Station”	
Application	<ul style="list-style-type: none"> • Supercapacitor, Battery, Corrosion, Electrodeposition, Electrocatalysis • Electrochemical Impedance Spectroscopy Studies (EIS)
General Description	<ul style="list-style-type: none"> • Single (or more) Channel Electrochemical work station for testing Battery, Supercapacitor, Corrosion, Electrodeposition, Electrocatalysis • Electrochemical Impedance Spectroscopy Studies (EIS) • High Precision Coulombic Efficiency Determination • Internal Resistance Determination • Software Controlled Data Acquisition with Minimum Sampling rate
Specifications for Channels	<ul style="list-style-type: none"> • Cell Connection: 2, 3, 4 or more electrode (+ ground) • Compliance voltage: ± 10 V or better per channel • Applied Voltage: ± 10 V or better per channel • Maximum Output Current: ± 400 mA or better at ± 10 V per channel • Current Ranges: ± 10 nA to 400 mA or better • Accuracy of applied and measured current: ± 0.1 % Full scale range or better • Resolution of applied potential: 5 μV or better • Voltage accuracy: 0.1 % of Full scale range or better • Measured current resolution: 1 pA or better • Potentiostat Rise/fall Time: <1 μs or better • Frequency range: 10 μHz to 1 MHz or better • Impedance accuracy of 1% & 1° at 1Hz • Input Impedance: 100 GΩ or better • Bandwidth of electrometer: 1 MHz or better • Input bias current: 20 pA or better • Cyclic Voltammetry with scan rates 1 mV/Sec to 100V/Sec or better • Floating mode Floating mode should be available Interface for connection with PC: Ethernet LAN • Local Area Network to access Multiple Computers • Possibility to upgrade to high current up to 20 A using external booster • The system must have capability for hybrid measurements such as Spectro-electrochemistry, IMPS-IMVS, EQCM, etc. It should have TTL triggering, ADC, DAC based communication ports.
Electrochemical Cell Accessory	<ul style="list-style-type: none"> • Dummy cell for internal validation (1no.) • Electrochemical cell with base plate, stand rod and lid (1no.) • polishing set (1no.) • Platinum (Pt) counter electrode (1 no.) • Ag/AgCl reference electrode (2 no.) • Platinum (Pt) electrode (3no.) • Glassy carbon electrode (3 no.)

<p>Complete software facility with following specifications</p>	<p>Below mentioned specifications are minimum requirement. However, it is not limited to it.</p> <p>Galvanostatic Charge / Discharge (Including C rate control) with voltage vs. time</p> <p>Graph plots</p> <p>Multigraph graph window capability</p> <p>Customize variables graph plot for each axis</p> <p>Voltage vs. Capacitance plot during Charge/Discharge Cycles</p> <p>Cyclic Voltammetry, Current Scan (Current/Galvano Dynamic), Voltage Scan (Potentio Dynamic) Constant Power / Constant Resistance</p> <p>Provision to connect and control External devices like Furnace, Thermal chambers</p> <p>Monitoring status of each Channel using Global Table/Summary Table</p> <p>Option to update the experimental setting parameters on current running experiment without pausing/stopping the channel/experiment</p> <p>Profile Importation to study Urban Life Cycle Tests</p> <p>Analysis tools like Integral, Circular or linear fit and Electrochemical EIS -Z fit should be available</p>
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<p>Techniques to be performed</p>	<ul style="list-style-type: none"> • Complete Electrochemistry Software with Cyclic Voltammetry, Linear Sweep Voltammetry, Staircase Voltammetry, Chronoamperometry, Differential Pulse Voltammetry (DPV), AC Voltammetry (ACV), Chrono Coulometry (CC), Open Circuit Potential-Time (OCPT), Chrono Potentiometry, Galvanostatic Charge / Discharge (Including C rate control) with voltage vs. time, Tafel Plot (TAFEL), Cyclic Charge Discharge (CCD), Amperometry i-t Curve (i-t), Sweep-Step Functions (SSF), Multi-Potential Steps (STEP), Mott Schottky, Impedance Simulator, IR Compensation, External Potential Input, Auxiliary Signal Measurement Channel, AC Impedance Plots $\log Z$ vs $\log(\text{freq})$, Phase vs $\log(\text{freq})$, $\log Z''$ & Z' vs $\log(\text{freq})$, $\log Y$ vs $\log(\text{freq})$, Nyquist Z'' vs Z', 3D Plots, Admittance Y'' vs Y', Warburg Z'' & Z' vs $w^{1/2}$, w-angular frequency. Z' vs w, Z'' vs w, $\cot(\text{phase})$ vs $w^{1/2}$, Electrochemical Reactivation, Multigraph window capability, Voltage vs. Capacity plot during Charge/Discharge Cycles, potential window should be available for the reference Electrode, Analysis tools (peak, convection wave, integral), with classical fits (linear, circular) and CV fitting tool. • EIS measurements simultaneously on the working and on the counter electrodes, EIS Software with facility for Equivalent Circuit fitting and simulation. Data presentation: Nyquist, Bode, Admittance, Dielectric, Mott-Schottky, Data analysis: Fit and Simulation, Find circle, Element subtraction, Kramers-Kronig, • Graphic Representation of Equivalent Circuit with user selectable circuit elements and their values in the circuit • Real-time fit and simulation analysis as well as live data plotting option for simulation plot must be available as default software protocol. The fit and simulation software should include basic options such as find circle, element
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	subtraction and an equivalent circuit library with all the modern EIS equivalent circuit models. EIS Modelling with Equivalent Circuit Fits. Simultaneous impedance measurement at counter electrode and working electrode.
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Computer Station	A suitable branded Computer /Laptop for system control & data acquisition should be offered with the system. It should have following minimum specs: CPU Intel Core i5, RAM 8 GB RAM, HDD 500 GB, GPU DirectX 9.0c compliant display adapter with 1GB RAM, Monitor, Keyboard, Optical Mouse, 3 USB Ports. Software should be freely upgradable in future. The model and the software capability offered should be well documented in the brochure/catalogue and should be available at Principal website.
Power requirement	Electrochemical system and associated computer should work with standard Indian power outlets/supply (230 V/50 Hz)
Warranty	One Years Standard Warranty after installation and commissioning
Maintenance	The channels Should be plug & play type and easy to install or to be removed.
Training	Training on operation, maintenance and troubleshooting should be imparted to two-three persons at the site of installation
Compliance Statement	<ul style="list-style-type: none"> • The supplier must submit technical brochures and proper application notes adequately explaining and confirming the availability of the features in the model of the equipment being quoted. • The supplier must submit a table indicating the compliance of the features of the model of the equipment being quoted with those given in the indent. Features not matching – must be clearly indicated. • Additional features and Features in the quoted equipment which are better than those in the indent – may be clearly explained.
About Supplier/Vendor	<ul style="list-style-type: none"> • Vendor should be an authorized provider of sophisticated high-precision potentiostat/galvanostat systems for past 5 Years or more with a • A proven track record of supply in national institutes • Standard quality certifications such (ISO 9001) • 10+ past installations of similar systems in India. • Vendor must provide the contact details of the customers where similar system supplied in the past details. • The vendor should have service station within the state (preferably in Bangalore) for speedy service resolution. • AMC should be provided after warranty period. • Installation training & demo of the instrument to be provided.