

CENTRAL UNIVERSITY OF PUNJAB

Established vide Act No. 25 (2009) of Parliament

Tender No.: M-34(2014)



Tender Notice for Purchase of Network Analyzer & Potentiostat/Galvanostate

Release Date : August 18, 2014

Last Date : September 12, 2014; 5:00P.M.

City Campus, Mansa Road, Bathinda- 151001,
E-mail: registrar@cup.ac.in, Tel/Fax: 0164-2864106,

Central University of Punjab, Bathinda

Central University of Punjab invites sealed tenders from Reputed Manufacturers/Authorized Dealers for supply of *Network Analyzer & Potentiostat/Galvanostate*.

Tender Notice Number	:	M-34(2014)
Release Date of the Tender	:	August 18, 2014
Last date for the submission of Tender	:	September 12, 2014; 5:00P.M.
Opening date of Tender	:	The Tenders/Quotations will be opened at the University campus on the day following the last date of receiving of tender at 3.00 P.M.
Name and Address of the University	:	Registrar, Central University of Punjab, City Campus, Mansa Road, Bathinda – 151001, Punjab, India.
Tel. /Fax	:	0164-2864106
E-Mail Address	:	registrar@cup.ac.in

Tender Fee (Non-Refundable) & EMD must be drawn in favour of **Central University of Punjab, Bathinda** as follow:

Sr. No.	Name of Items	Tender Fee	EMD
1.	Network Analyzer	1,000	36,000
2.	Potentiostat/ Galvanostate	1,000	40,000

INDEX

Sr. No.	Contents	Annexures
I.	GUIDELINES FOR PREPARATION OF TENDER	Annexure-A
II.	GENERALFINANCIAL TERMS AND OTHER CONDITIONS	Annexure-B
III.	TECHNICAL SPECIFICATIONS AND COMPLIANCE SHEET OF NETWORK ANALYZER	Annexure-C
IV.	TECHNICAL SPECIFICATIONS AND COMPLIANCE SHEET OF POTENTIOSTAT/GALVANOSTATE	Annexure-D
V.	APPLICATION FORM	Annexure-E
VI.	DECLARATION BY SUPPLIER	Annexure-F
VII.	CHECK LIST	Annexure-G

GUIDELINES FOR PREPARATION OF TENDER

- 1 Separate Tender fee along with Earnest Money Deposit (EMD) and all other necessary documents should be submitted for the equipment. The main envelop should super- scribe: “*Tender for Network Analyzer & Potentiostat/Galvanostate Last date of submission September 12, 2014, 5:00 P.M.*”.
- 2 The proposals shall be submitted in two parts, viz. **Technical bid and Financial bid** in two separate sealed envelopes (with respective marking super-scribed in bold).
- 3 The first envelope (envelope 1) marked “**Technical bid**” should include the technical specifications. The first envelope should not contain any cost information whatsoever.
- 4 The second envelope (envelope 2) marked “**Financial bid**” should contain the detailed price offer in prescribed format.
- 5 Both the sealed envelopes Technical bid and financial bid should be placed in a bigger sealed cover. The top of cover must also contain Name and Address of the tenderer, telephone and other contact details for further correspondence.
- 6 Financial bid and Technical compliance sheet for each instrument should be strictly as per tender format, and signed on each page.
- 7 Blank Tender Forms for the above items along with details can be downloaded from *www.centralunipunjab.com or www.cup.ac.in*. The non-refundable application fee of Rs. 1000/- must be accompanied with tender.
- 8 Tenders must accompany a copy of the “*Eligibility Criteria and General Terms and Conditions*” section of this document, signed and stamped on each page indicating that they agree to these.
- 9 Last date of submission of tender along with requisite fee, EMD and all documents is **September 12, 2014**.
- 10 The DD for application fee, EMD or any other must be drawn in favour of Central University of Punjab, Bathinda.
- 11 The Tenders/Quotations will be opened at the University campus on the day following the last date of receiving of Tenders/Quotations at 5.00 P.M. If the last date of submission is declared holiday in CUP (in exceptional cases), the date of submission and tender opening will be next working days, respectively. .

12 The tenders received late, without tender fee, without earnest money, without required documents or incomplete in any respect / Misleading will out rightly be rejected. Electronic submission of documents (by facsimile, email and so on) is not acceptable.

13 If the supplier/firm is manufacturer/authorized dealer/sole distributor of any item, the certificate to this effect should be attached.

14 Availability of Spares: The tenderer must give certificate duly signed and stamped by manufacturer for the availability of spares and servicing of instrument for at least 10 years. Supplier should give an undertaking that spares parts will be supplied within the specified periods as and when ordered.

15 Apart from all these terms and conditions, specific terms as specified for each instrument must also be complied.

16 The tender competing in technical evaluation will only be considered for financial evaluations. The price envelops of others will not be considered. At second stage, financial bids of only technically acceptable offers should be opened for further evaluation and ranking before awarding the contract.

17 The financial proposal shall be opened in the presence of the tenderers or their representative who choose to attend. The prior information in this regard will be given to the qualified tenderers. The printed literature and catalogue/brochure giving full technical details should be included with the technical bid to verify the specifications quoted in the tender.

GENERAL FINANCIAL TERMS AND OTHER CONDITIONS

1. **Prices:** Quoted prices should be firm and FOR Central University of Punjab (CUPB), City Campus, Mansa Road, Bathinda and complete break up of all taxes and duties payable by the university should be clearly defined otherwise it will be presumed that the rates quoted are inclusive of all these charges and nothing extra will be paid. **Special Discount/ Rebates, whichever applicable to an educational Institution, may also be specifically indicated.**
2. **Payment terms:** 100% payment will be made through RTGS/by cheque after delivery, installation and demonstration of goods in good condition and satisfactory inspection report of the Indenter.
3. **Taxes:** All kinds of Statutory Taxes will be paid by the purchaser on the basis of supportive Documentary Evidence. However, no service tax will be paid as the University is exempted from the payment of the same as per Government of India Notification No. 25/2012 dated June 20, 2012.
4. **Validity:** Tenders/Quotations should be valid for three months from the last date of its submission.
5. **Opening of Tenders:** Tenders complete in all respect will only be considered. Tenders/Quotations will be opened at the University campus on the day following the last date of receiving of tender at 3.00 P.M., if the Tender opening day happens to be official Holiday then the tenders will be opened on the next working day, in the presence of bidders whosoever may wish to be present.
6. **Incomplete or Misleading Tenders / Quotations:** Tenders/Quotations duly sealed and sent only by post/courier will be considered. Tenders/Quotations received late or incomplete in any respect/ misleading without earnest money& without required documents will out rightly be rejected. No responsibility with regard to postal delays due to any reason whatsoever will be accepted.
7. **Right to reject:** The CUPB reserves right to accept/reject any or all the Tenders/Quotation sat any time without assigning any reason.
8. **Delivery Schedule:** Delivery schedule should be clearly mentioned in the Tenders/Quotations. In case of imported item, the supplier their Indian agent will be responsible for delivery of the material from the place of discharge of material to final point.
9. **Installations:** Installations and Training of the equipment under purchase, if any, will be of free of cost.

10. **Penalty for non/late delivery of material:** If the supplier fails to deliver the material/equipment within the stipulated delivery period of the Supply/Purchase order/contract the same is liable to pay penalty charges at 0.5% of the cost of undelivered goods/ services per week, not exceeding maximum limit of 10% of the cost of complete unit of undelivered equipment/material so delayed.

11. **Custom Duty & Excise Duty Exemption:** The University being a public funded and non-commercial research institution is exempted from paying Custom Duties vide notification no. 51/96-custom and the provision of the said notification will apply. University will provide DSIR certificate, Custom Duty Exemption Certificate (CDEC), road permit and other necessary certificates. Since the University does not have any Clearing Agent, the Supplier is requested to get the consignments cleared on behalf of the University. The admissible Custom Duty will be reimbursed to the Supplier on production of documentary evidence of payment of Custom Duty and also satisfactory installation report from the Indenter. The equipment should not be taken to warehouse/ Go-down and should come straight from the nearest Airport to the University. In case of inspection by the Custom, legible seal of Custom Officials should be present along the tearing of consignment.

12. **Security Deposit:**

a. You are required to submit within 30 days security deposit amounting to 5 per cent of ordered value either in cash/demand draft in favour of the Central University of Punjab, Bathinda or in the form of Bank Guarantee (BG) (for those firms as maintaining permanent earnest money with the university) on university's standard Performa for faithful execution of Supply/Purchase/Work order complete in all respect including warranty period.

b. On faithful execution of the Supply/Work order/contract on all respects, including warranty period, the security deposit of the contractors/supplier shall be released.

c. In the event of default on your part in faithful execution of Supply/Work order/contract, the security deposit shall be forfeited by an order of the Registrar of the University. The forfeiture of security deposit shall be without prejudice to any other right arising or accruing to the university under relevant provisions of the Supply/Work Order/contract like penalty/damages for delay in delivery provisions under Negligence& default clause including suspension of business dealings with the university for a specific period.

13. **Warranty/ Guarantee:**

a) The supplier/contractor shall be responsible to replace free of cost with no transportation and insurance expenses to the University up to the destination of material equipment, the whole or any part of the material which under normal and proper use and maintenance, proves defective in material or workmanship within 42 months from the date, it is taken over by the University or 36 months from the

date of installation whichever expires earlier in respect of Network Analyzer and 12 months from the date of installation for Potentiostat/Galvanostat, provided the University gives prompt written notice of such defects to the supplier/contractor. Such replacement shall be effected by the supplier/contractor within a reasonable time not exceeding 6 months of the intimation of defects. Supplier's/Contractor responsibility arising out of supply of material or its use whether on warranties or otherwise shall not in any case exceed the cost of correcting the defects or replacing the defective part/material and upon the expiry of the warranty period stipulated above, all such liabilities shall terminate.

b) The above provision shall equally apply to the material so replaced/repared by the Supplier/Contractor under this clause in case the same is again found to be defective within 12 months of the replacement/repair.

c) In case the replacement /repair of defective material is not carried out within six months of intimation of defects, the Supplier/Contractor shall have to pay interest @ 12 per cent per annum on the value of each complete operational unit of equipment beginning from the date of becoming defective up to date of its re-commissioning after replacement/repair.

14. **Civil Suit Jurisdiction:** All legal proceedings in connection with this Supply/Purchase order/Contract shall be subject to the territorial jurisdiction of the local Civil Courts, as per Indian Laws, at Bathinda only.

15. **Cancellation :** The University reserves the right to cancel the Supply/purchase order as a whole or in part at any time or in the event of default on the part of the Suppler prior to the receipt of information regarding taking in hand of the manufacture of material against the Supply/Purchase order/dispatch of material to the consignee.

TECHNICAL SPECIFICATIONS AND COMPLIANCE SHEET FOR NETWORK ANALYZER

Specifications:

1. General: Network Analyzer shall be used for testing of various electronic filtering circuits, and should have following features: (a) Full 2-port error corrected S-Parameters, magnitude and phase (b) Insertion Loss and transmission measurement (c) Smith chart, polar display. (d) Material Measurement Capability. It should also have the best measurement stability over time and temperature. It should be easy to use with task driven user interface.

2. Technical:

Test port output

- (i) **Frequency Range:** 5Hz to 3 GHz or better.
- (ii) **Frequency Resolution:** 1 mHz or better
- (iii) **Level and sweep Range:** -45dBm to +5dBm (100KHz to 300KHz)
-45 dBm to 10 dBm (at 300 kHz to 3 GHz)
- (iv) **Level Resolution:** 0.05 dB or better

Test port input:

- (i) **Damage Level:** +20 dBm, ± 30 V DC.
- (ii) **Absolute Amplitude Accuracy:** $< \pm 3$ dB
- (iii) **Noise Floor:** ~ -85 dBm (3KHz Bandwidth), ~ -110 dBm (10 Hz Bandwidth)
- (iv) **System Dynamic Range:** ~ 75 dB (3 KHz IF Bandwidth), ~ 100 dB (10 Hz IF Bandwidth)
- (v) **RF Connectors Type:** Type-N, female; 50Ω or 75Ω (Ports 1 and 2) BNC, female; 50Ω or $1 M\Omega$ (Ports R and T) BNC, female; 50Ω (LF Out)
- (vi) **Display:** Size: > 8 inch TFT color LCD; Resolution: XGA (1024 X 768) or better
- (vii) **Connectivity:** GPIB, LAN, USB, VGA, 24-bit I/O Port

Measurements:

- (i) **Data formats:** Log and Linear magnitude, Phase, Expanded phase, Positive phase, Group delay, SWR, Real, Imaginary, Smith chart, Polar.
- (ii) **Measurement parameter conversion:** Available to convert S-parameters into reflection and transmission impedance, reflection and transmission admittance.
- (iii) **Number of Measurement Channels/ Number of traces:** Up to 4 independent channels. 4 data traces and 4 memory traces per channel.
- (iv) **Number of Display Windows:** Up to 4 display windows associated with each measurement channel.

- (v) **Measurement Choices:** S11, S21, S12, S22, Absolute.
 - (vi) **Marker Search:** Max value, min value, multi-peak, multi-target, peak left, peak right, target left, target right, & width parameters with user-defined BW values.
 - (vii) **Data Markers:** At least 10 independent markers per trace.
- Sweep functions:**
- (i) **Sweep type:** Linear, segment, log, power and DC Bias Sweep.
 - (ii) **Number of points per sweep:** User definable from 2 to 1.5K or more
 - (iii) **Segment Sweep:** Define independent sweep segments. Set number of points, test port power levels, IF bandwidth, delay time, sweep time for each segment
 - (iv) **Sweep Trigger:** Set to continuous, hold, or single, sweep with internal, external, manual, or bus trigger
 - (v) **Power:** Set source power from -45 dBm to 5 dBm
- Trace functions:**
- (i) **Display Data:** The device should display the current measurement data, memory data, or current measurement data and memory data simultaneously.
 - (ii) **Trace Maths:** Vector addition, subtraction, multiplication or division of measured complex values and memory data.
 - (iii) **Autoscale:** Auto selects scale resolution & reference value to vertically center the trace.
- Others:**
- (i) **Data Storage:** Internal Hard Disk Drive to be provided for Storing and recalling instrument states, calibration data, and trace data. Stored file format should be MS DOS compatible and should be accessible from an external windows PC through LAN.
 - (ii) **User Interface:** System should have a graphical user Interface based on Windows Operating System.
 - (iii) **Calibration Kit:** Calibration kit and Cables to be provided.
 - (iv) **Material Measurement:** Analyzer should be capable of doing permittivity and permeability measurements of materials in the form of ϵ' , ϵ'' , $\tan \delta$, μ' , μ'' , $\tan \delta_m$, and Cole-Cole.
 - (v) **Operating Environment:** Temperature: +10 °C to +40 °C, Humidity: 20% to 80%.
 - (vi) **Line Supply / Power:** 200 to 260 Vac, 47 to 60 Hz
 - (vii) **Warranty:** At least 3 Years warranty should be given.
 - (viii) **Servicing Facility:** Supplier shall specify the repair/service & Calibration facility available for the equipment within India preferably in Delhi with address, Phone, etc.

TECHNICAL SPECIFICATIONS AND COMPLIANCE SHEET FOR POTENTIOSTATE/ GALVANOSTAT

Technical Specifications:

- i) Voltage Range: ± 10 V or better at ± 2 A.
- ii) Output Current: ± 2 A or better at ± 10 V.
- iii) Current range: ± 10 nA to current range 1A or better.
- iv) Potential resolution: 0.1mV or better.
- v) Potential resolution: 0.02% of potential range or better.
- vi) USB interface for connection with PC.
- vii) Frequency Range of Impedance: few μ Hz to 1 MHz or better.
- viii) System should have provision for measurement of auxiliary signal
- ix) System should have facility to measure with three or four probe (electrode) measurement.
- x) System should be provided with sample holder for three as well as four electrode system (for liquid electrolyte as well as thin films and solid materials related to renewable energy storage/conversion applications).

Accessories:

It should consist of the following accessories:

- Gold working electrode 3
- Glassy Carbon electrode 3
- Pt. working electrodes 3
- Ag working electrode 3
- Ag/AgCl reference aq 3
- Ag/AgCl reference (non aq) 3
- Calomel Electrode 3
- Pt wire counter electrode 3
- Electrode polishing kit

Software: Software should have facility to record additional signal viz EQCM, bi-potentiostat etc. Import/export ASCII. Ready-to-use Vis & Generic interface for .Net applications should be included. It should have facility to display up to 4 plots simultaneously. Comparison with previous experiments should be possible while experiments are in progress. The software should support following basic electrochemical measurements: Cyclic Voltammetry with scan rates from 10 μ V/Sec to 200V/Sec, Linear Sweep Voltammetry, Sampled DC Voltammetry. Taffel Plots, Differential Pulse Voltammetry, Square Wave Voltammetry, AC Voltammetry. Electrochemical methods like Chrono-Amperometry, Chrono-Coulometry & Chrono-Potentiometry with current ramp. CV Simulation software. 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, Open circuit potential versus time plot,

Techniques: These electrochemical techniques should be inbuilt in the equipment.

1. Cyclic Voltammetry (CV)
2. Linear Sweep Voltammetry (LSV)
3. Tafel plot (TAFEL)
4. Chrono Amperometry (CA)
5. Chrono Coulometry (CC)
6. Square Wave Voltammetry (SWV)
7. AC Voltammetry (ACV)
8. Amperometric I-t Curve (I-t)
9. Double Differential Pulse Amperometry (DDPA)
10. Triple Pulse Amperometry (TPA)
11. Integrated pulse Amperometric Detection (IPAD)
12. Bulk Electrolysis with Coulometry (BE)
13. Sweep-Step Functions (SSF)
14. Multi-Potential Steps (STEP)
15. AC Impedance (IMP)
16. Impedance – Time (IMPT)
17. Impedance – Potential (IMPE)
18. Chronopotentiometry (CP)
19. Chronopotentiometry with Current Ramp (CPCR)
20. Multi-Current Steps (ISTEP)
21. Potentiometric Stripping Analysis (PSA)
22. Open Circuit Potential – Time (OCPT)
23. Galvanostat

Computer, Printer, UPS:

Compatible Branded PC, Printer, UPS, Nitrogen Cylinder with regulator should be quoted with main instrument.

Current Booster: Current booster should be provided if required;

APPLICATION FORM

To be Filled Completely and Signed

1. Contact details of the head office of proposing firm:
 - a. Name-
 - b. Address-
 - c. Tel. No.-
 - d. Fax -
 - e. Email -
 - f. Web site (If any)

2. Name and full address of local office of proposing firm nearest to Bathinda:
 - a. Name-
 - b. Address-
 - c. Tel. No.-
 - d. Fax -
 - e. Email -
 - f. Web site (If any)

3. Name and full address of manufacturer:
 - a. Name-
 - b. Address-
 - c. Tel. No.-
 - d. Fax -
 - e. Email -
 - f. Web site (If any)

4. Name of advising bank and account number:

5. SWIFT Code:

6. PAN and TAN Number:

7. Manufacturing type (tick mark):
 - i. Imported
 - ii. Indigenous
 - iii. Both

8. Country(s) of origin:

9. Any other relevant information:

DECLARATION BY SUPPLIER

“It is certified that I/we have carefully read and understood the entire general, special as well as specific terms and conditions of these documents and agree to abide by all of these. All the information and commitments provided with the quotations are truthful and binding on the firm.”

Place:

Signature of Authorized Person

Date:

Designation

Seal

CHECK LIST

(TO BE FILLED COMPLETELY & PLACED IN ENVELOPE-I)

Sr. No.	Points to be verified	Yes/ No
1	Technical specification compliance sheet	
2	EMD	
3	Tender Fee	
4	Photocopy of PAN and TAN card	
5	User list and certificates issued by clients	
6	Copy of income tax return certificate	
7	All other certificates as asked for in tender document a) Spare part availability certificate b) Certificate indicating country of manufacture c) Sales tax registration certificate d) Copy of "Eligibility Criteria and General Terms and Conditions" signed and stamped on each page	

Place:**Signature of Authorized Person****Date:****Designation****Seal**