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DEPARTMENT OF PHYSICS  
PANJAB UNIVERSITY, CHANDIGARH-160014

Tel. No. 0172- 2541741,

PHS : 7158  
Dated : 29/8/2024.

SPEED POST

Dear Sir,

Please quote your lowest rates in two bid system (Technical bid and financial bid) should be clearly written or typed (cutting avoided) for the items list attached given below, specifying make, quality, period of supply of each item along with detailed information and should reach the undersigned on or before **20/09/2024** by **5.00 p.m.**

1. **TECHNICAL BID and FINANCIAL BID** should be in separate sealed envelope with 2% EMD.
2. The bidders are requested to attach an EMD in form of demand draft of 2% of the total value of the Quotation/Proforma Invoice in the name of "Rajesh Kumar, Department of Physics, Panjab University, Chandigarh" without EMD financial bids will not be entertained. **However, EMD is not required for quotation of the total value of Rs.1.0 lakh or below.**
3. Panjab University does not take any responsibility for any postal delay in delivery by Registered/Speed post or lost in transit of quotation.
4. Conditional and unsigned quotation will not be accepted.
5. No payment will be made on the Pro-forma Invoice.
6. The quotation shall not contain corrections, erasers and overwriting.
7. The undersigned reserves right to accept or reject any quotation without assigning any reason.
8. Rates quoted should be FOR Chandigarh.
9. The rates for insurance, GST, should be clearly mentioned, original receipt for the insurance charges are required along with the bill of supply.
10. Panjab University has been issued GST Identification No. (GSTIN) i.e. 04AAAJ0325R2Z0 w.e.f. 1.7.2017.
11. We have been exempted for paying Custom Duty as well as Excise Duty Exemption in terms of Govt. notification No.51/96-Customs dated 23.7.1996 and Central Excise Duty Exemption in terms of Govt. notification No.10/97-Central Excise dt.1.3.1997 as amended from time to time is valid upto 31.08.2025. It. Director General of Foreign Trade has issued a new Importer Export Code (IEC) No. 2217501658.
12. Special Discount for educational institutions, University teaching department may be mentioned.
13. The quotation in a sealed envelope giving our/your reference No./Date of quotation should be sent by POST/personally.
14. The Technical bid/quotations opening date will be communicated separately through email/phone and you may depute your representative at the time of opening of quotation.

Thanking you,

Yours faithfully,

Dr. Rajesh Kumar,  
Deptt. of Physics

Principal Investigator  
DST Project  
Physics Department  
Panjab University  
Chandigarh

Name of item required: Sheet attached

## Potentiostat / Galvanostat/Electrochemical workstation with EIS

Multichannel System for up to 10 or more Potentiostat/ Galvanostat in one single chassis. It should be possible to control all the channels through one PC. System should have provision to add different modules such as EIS and additional electrometer.

### **Electrochemical Workstation Channels:**

No. of installed channels	: 01 Nos (Should have the facility to add at least 09 more channels in same chassis)
Compliance voltage	: $\pm 20V$ or better
Current	: $\pm 400mA$ or better
Current Ranges	: $\pm 10$ nA (without gain) to $\pm 100$ mA or better
Applied Potential	: $\pm 10V$ or better
Potentiostat Gain bandwidth	: 1 MHz or better
Bandwidth of electrometer	: $> 4$ MHz or better
Input Bias current	: $< 1$ pA or better
Resolution of measured potential	: $3 \mu V$ or Better
Resolution at 10 nA range in PGSTAT & GSTAT	: 30 fA or better
Potentiostat rise fall time	: $< 300$ nS or better
D/A Converter	: 16 bit (3 ch)
IR Compensation	: Yes
Electrode Connection	: 4 (WE, S, CE and RE)

### **EIS module (1 No Required Now):**

Hardware and software for EIS measurements in potentiostatic and galvanostatic control. It should be supplied with powerful fit and simulation software for the analysis of impedance data.

Frequency range : 10  $\mu$ Hz - 1 MHz.

Frequency resolution: 0.003%,

Input range:  $\pm 10$  V

Signal types: 1 sine, 5 sine, 15 sine,

Input channels E and I from the Potentiostat/ Galvanostat or X and Y external signals,

AC amplitude 0.25 mV to 0.30 V rms in potentiostatic mode

Data presentation: Nyquist, Bode, Admittance, Dielectric, Mott-Schottky,

Data analysis: Fit and Simulation, Find circle, Element subtraction

Valid contour plot should be available for EIS module.

### **Electrochemical Cell:**

Volume- 20-90ml, 3mm GC tip electrode, Ag/AgCl double junction single reference electrode, Platinum wire counter electrode, polishing sheet, base plate stand rod, lid.

### **Software:**

The Software to be provided with the potentiostat / galvanostat should be comprehensive, fully windows based with three dimensional view of graphics and analysis software. Software should record current,

voltage and time for cyclic and linear sweep voltammetric measurement. It should be possible to record current, voltage and time data in tabular format for each measuring point in voltammogram. Software should be capable of supporting a wide variety of electrochemical techniques as mentioned below.

- Cyclic & Linear Sweep Voltammetry
- Linear Polarization
- Differential Pulse, Sampled DC & Square Wave Voltammetry
- Chrono - amperometry and chrono potentiometry ( $\Delta t > 1 \text{ ms}$ )
- Standard procedures given above.
- Programming of different electrochemical methods and optional accessories
- Comprehensive database structure & powerful data analysis tool.
- Inbuilt electrochemical spread sheet
- User programmable formulae to new plots.
- Powerful graphic engine with useful features such as individual Axis scaling, overlays, multiple Y axes, plot addition, zooming and rotation.
- Each plot can be saved as an image file so as to use directly in paper or presentation.

**Warranty:**

Minimum three years onsite warranty from the date of installation.

**Future Upgrade: Current boosting** - Expandable anytime in future to  $\pm 10\text{A}$  measured current or better with Current Booster at unchanging compliance voltage of  $\pm 20 \text{ V}$  and  $0.0003\%$  measured current resolution. Each channel should have booster connection facility.