Department of Physics
University of Kerala, Thiruvananthapuram-695581

TENDER – PHY/PURCHASE/EWS/02/23 Date: 13/01/2023

E-Tender Notice

Department of Physics, University of Kerala, Thiruvananthapuram invites open tenders through e-Procurement (in two bid system) for the purchase of electrochemical workstation with Spectro electrochemistry .

Last date and time for submission of tender online	: 13/01/2023 5pm
Last date and time for submission of tender offline	: 03/02/2023 5pm
Date and time of opening of tender	: 06/02/2023 11 am
Hard copies of the sealed tenders to be submitted to the office of	**The Head, Department of Physics, University of Kerala, Kariavattom, Trivandrum- 695 581, Kerala** **e-mail: hodphysics@keralauniversity.ac.in**
For technical details contact	**Dr. Deepa K. G., Assistant Professor, Department of Physics, University of Kerala, Thiruvananthapuram, Ph. No.9632784886** E-Mail: deepa@keralauniversity.ac.in

For further details logon to www.etenders.kerala.gov.in

Electrochemical Workstation and Spectroelectrochemistry setup

Sl. No.	Part name	Specifications
1.	General Techniques	Cyclic Voltammetry (CV) Linear Sweep Voltammetry (LSV) Chrono Amperometry (CA) Chrono Coulometry (CC) Ampereometric i-t curve – lifetime testing Galvanostatic charge/ discharge AC Impedance (IMP) Impedance – Time (IMPT) (Mott-Scottsky) Impedance – Potential (IMPE) Impedance Simulator with fitting Open Circuit Potential – Time (OCPT)
2.	Hardware Specification:	Potentiostat / Galvanostat, 2- or 3- or 4-electrode configuration Maximum potential: ±10V or higher, Maximum current: ± 380 mA or higher. Compliance Voltage: > ± 13V or higher. Measured Potential Resolution: 5μV or better Potentiostat rise time: < 400 ns or lower Galvanostat applied current range: 10nA – 400 mA. Applied current accuracy: 0.0003% of current range. Input bias current: < 1 pA or lower CV and LSV scan rate: 0.000001 to 1000 V/s CA and CC pulse width: 0.0001 to 1000 sec IMP frequency: 10 μHz to 1MHz (for impedance 10-1000 ohm) or better. IMP amplitude: 0.3mV to 0.3V RMS or better IMP Signal Type: 5 sine, 15 sine or better Potentiostat Bandwidth: 1MHz or better Automatic and manual iR compensation Interface: USB interface for connection with PC.
3.	Fiber Optic Based High-resolution Spectrometer	Spectrometer should measure Absorption, Transmission and reflectance. The spectrometer should be compact with Linear CCD array .
4.	Spectrometer Module	Detector: CCD array detector – Range: 200-1100 nm Fibre optic connector: SMA Slits: 25 or better Pixel: 2048 or better Signal to noise ratio: 300:1 (at full range) Dynamic range: 1300:1 for single acquisition Integration time: 1.11 mS - 10 minutes.
5.	Light Sources	Light sources Deuterium and Tungsten halogen lamps. Wavelength range: 200-400 nm (deuterium), 400-2500 nm (halogen).

		Bulb life: Minimum 1000 hours for Deuterium. : Minimum 2000 hours for Halogen.
6.	Cuvette Holder	2 way Cuvette Holder for 1-cm pathlength cuvettes equipped with Fiber optic couplings at each of two quartz f/2 collimating lenses.
7.	Electrochemical Cell	Electrochemical Cell including Pt flag working electrode, Ag-Ag/Cl ref electrode and Pt counter electrode with Quartz Cuvette with Teflon cover – 1 No.s
8.	Spectro Electrochemical Cell	Vendor has to provide spectro Electrochemical cell to work with ITO coated plates along with Reference and counter Electrodes. The Cell should have provision to shine light directly at ITO coated plates. Cell set up should be complete with base plate and support rod.
9.	Software for spectroscopy & Data Acquisition	The spectroscopy software should be java/.net based and operate on Windows and Linux operating systems. The software should control the above spectrometer and allow the user to perform the Absorbance, Transmittance and Time acquisition. Experiments as well as signal processing functions such as electrical dark signal correction, stray light Correction and signal averaging should be included.
10.	Warranty	3 years of comprehensive warranty

Optional Accessories

1.	**Spare set of Electrodes**	Pt Working Electrode, Glassy Carbon Working Electrode, Ag/AgCI Reference (aq), Ag/AgCl Reference (non aq)**,** Calomel Reference Electrode, Pt Wire Counter Electrode, (**(2 numbers each).** Electrode Polishing Kit, Glass Cells-4no.s, Cell Top and Cell Stand (2 sets)
2.	**Computer**	Desktop Computer / Laptop system with i5, 8GB RAM, 1TB HDD, Color monitor with standard configuration.
3.	**Filters**	Blue, Green and Red filters along with the filter -wheel assembly for wavelength dependent studies.

General Conditions: :

1,Every tenderer should submit Tender fee of Rs. 3,600/-

2. The tender shall be submitted in the two bids viz. Technical Bid and Financial Bid. Only those qualified in technical bid will be eligible for participating in financial bid. A presentation regarding the technical specification and item to be supplied shall be done before the technical evaluation committee if requested.

3. The bidder should be a manufacturer or their dealer specifically authorized by the manufacturer to quote on their behalf for this tender as per Manufacturer Authorization Form and Indian agents of foreign principals, if any, who must have designed, manufactured, tested and supplied the equipment(s) similar to the type specified in the "Technical Specification". Such equipment must be of the most recent series/models incorporating the latest improvements in design. The models should be in successful operation for at least one year as on date of Bid Opening.

4. **Compliance Statement**: Along with the technical details provide a tabular column indicating whether the equipment quoted by you meets the specifications by indicating 'YES' or 'NO'. If 'YES', support the claim by providing original brochures. **Venders should provide clear brochures/data sheets about the equipment and its working. Also include adequate proof for the claim regarding the performance.**

5. Reference: Names of Institutes with contact person and telephone/ email where similar equipment supplied by you in India [Preferably South India] shall be mentioned in the bid.

6. Incomplete & conditional tenders and tenders received after the due date will be summarily rejected without assigning any reasons thereof.

7. The price should be inclusive of all taxes, duties, transportation, insurance, installation etc. Nothing extra will be paid in addition to the quoted rate. Any amount in Indian rupees for installation, commission, labour, spares, service etc shall be entered in item 2 of BOQ.

8. Payment Terms: 90% payment shall be made through irrevocable LC on presentation of complete and clear shipping documents and balance 10% of the amount shall be released after the receipt, installation commissioning and acceptance of the equipment.

9. Validity of tender: Tender submitted shall remain valid at least for 120 days from the date of opening the tender. Validity beyond 120 days, from the date of opening of the tender shall be by mutual consent.

10. **Delivery and installation: Proposed delivery schedule should be mentioned clearly. Delivery and installation and training (one week) should be made at the Department of Physics, University of Kerala, Kariavattom campus, Trivandrum without extra cost(inclusive of documentation, demurrage, customs duty, clearance and transportation charges). University of Kerala will provide customs duty exemption certificates if required.**

11. Service facility: Supplier should mention their details of service setup and manpower in Thiruvananthapuram who are responsible for after sales support.

12. The model number, make, and a printed literature of the product shall submit positively.

13. In case of any dispute, the decision of the University authority shall be final and binding on the bidders.

14. The undersigned reserves the right to reject any or all of the tenders received without assigning any reason thereof.

15. The quoted item should be under **comprehensive warranty for 3 year or** more.

16. If any component is found to be defective during the warranty period, the vendor has to replace the defective item immediately at their own cost.

17. For any queries please contact, Dr. Deepa K.G. Assistant Professor, Department of Physics, University of Kerala, Thiruvananthapuram, Ph. No. 9632784886 E-Mail: deepa@keralauniversity.ac.in

Documents to be Uploaded

1 Signed Compliance Matrix

2. Detailed Technical Brochure

3. Under taking of support for next 10 Years

4. BOQ

5. Detailed Financial Bid

The Head,

Department of Physics,

University of Kerala,

Kariavattom,

Thiruvananthapuram,

Kerala - 695 581