

Pl.A1/Phy/1370-2/2018

**Department of Physics, University of Kerala, Kariavattom,
Thiruvananthapuram, Kerala, India – 695 581, Ph: 91 471 2308920**

05/07/2019

E-Tender Notice (Re-tender)

Department of Physics, University of Kerala, Kariavattom, invites tenders (re-tender) for the purchase of BET Surface Area Analyser with following specifications.

Last date and time for submission of tender online	: 12.07.2019 :5PM
Date and time of opening of tender	: After Technical Evaluation
Hard copies of the sealed tenders to be submitted to the office of	The Registrar University of Kerala Trivandrum
For technical details contact	Dr. G. Subodh Assistant Professor and Head Department of Physics University of Kerala Ph. No. 8921996523 e-mail: gsubodh@gmail.com

		Fully automated highspeed multi-point B.E.T. Instrument analyze for four samples at one time.
	Analyser	The system should be completely automatic vacuum volumetric, gas sorption system and capable of carrying out physisorption of various gases and should have features to measure the adsorption/desorption isotherms, surface area analysis, STSA, Mesopore Size Distribution, Standard Micropore Analysis
	Analysis Capability	Surface Area by single and multi point BET Surface Area by Single and multi point Langmuir, Total pore volume, Total micro pore volume and area by T-Plot method. Analysis log, Horvath-Kawazoe data reduction, BJH pore size distribution using adsorption and desorption isotherm.
	Analysis Gases	The system should have the facility to use Nitrogen, Hydrogen, Argon, Carbon dioxide and any other inert gases.
	Operating Specification	Surface Area Range: 0.01 m ² /g or better Pore Diameter Range: 3.5- 5000 Angstroms or better Micropore Volume: Detectable within 0.0001 cc/g The system should have minimum 4 preparation port provided with programmable control of sample heating rates, hold times, and temperatures up to 350°C under user-selectable flow and vacuum degassing modes.
	Pressure Range	0-0.13 Mpa or better
	Minimum Pressure Resolution	6 x 10 ⁻⁵ mm Hg or better
	Minimum relative (P/P0) Resolution	6 x 10 ⁻⁸ mm Hg or better
	Pressure Transducers	Adsorption and desorption isotherms measured using 1000 torr pressure transducer. Transducer accuracy shall be at least ±0.10%
	Po station	The system should have a dedicated Po station, along with dedicated Po and backfill gas pressure transducers, for added analysis precision and speed. It should also have three builtin adsorbate gas input ports.
	Vacuum System	The vacuum system should be capable of degassing the sample upto a vacuum level of 1 x 10 ⁻³ Torr or better.
	Cryogenic System	Dewar Volume: 2.0L or more Holding Time: 40+ hours of uninterrupted operation with liquid N2 or better fitted with appropriate coolant level control for precise and smallest void volume

Software Features	The software should be an original licensed copy software with specific part number mentioned in the offer with integrated database. No pirated version of the software will be allowed and if found the offer will be strictly rejected. Periodical updates of the software should be provided free of cost for a period of five years. The system should have the suitable software with user interactive data analysis tools for analyzing
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UPS	A 5KVA UPS with two hour back up time should be supplied.
Gases	He gas cylinder He gas cylinder (2 Nos) of 47 ltr capacity with 99.999% purity and 2 stage regulator (1 No.) N ₂ gas cylinder (1 No) of 47 ltr capacity with 99.999% purity and 2 stage regulator (1No) All nuts, ferrules & connectors for gas connections SS tubings for gas connections - 15 mtrs
Computer	Suitable computer with i5 configuration & B&W printer to be supplied for the control & operation of the system.

General Conditions:

1. Every tenderer should submit Tender fee of **Rs. 2,500/-**
2. Every tenderer should submit Earnest Money Deposit (EMD) of **Rs. 40,000/-**
3. The tender shall be submitted in the two bid 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.
4. 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.
5. **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.**
6. **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.
7. Incomplete & conditional tenders and tenders received after the due date will be summarily rejected without assigning any reasons thereof.
8. 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.
9. **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.

10. 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.
11. 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.
12. Service facility: Supplier should mention their details of service setup and manpower in Thiruvananthapuram who are responsible for after sales support.
13. The model number, make, and a printed literature of the product shall submit positively.
14. In case of any dispute, the decision of the University authority shall be final and binding on the bidders.
15. The undersigned reserves the right to reject any or all of the tenders received without assigning any reason thereof.
16. The quoted item should be under **comprehensive warranty for three years** or more.
17. 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.

Documents to be uploaded:

1. Signed Compliance Matrix
2. Detailed Technical Brochure
3. Under taking of support for next 10 Years
4. BoQ
5. Tender fee