

TATA INSTITUTE OF FUNDAMENTAL RESEARCH
Centre for Interdisciplinary Sciences, 21 Brundavan Colony, Gandipet Road,
CBIT Post Office, Hyderabad - 500 075

PUBLIC TENDER NO :	TCIS/PCH/IC14-0246/PUB
PUBLISHED ON :	07.02.2015
DUE DATE :	27.02.2015
COST OF TENDER :	Approx. Rs. 55 Lakhs
TYPE OF TENDER :	TWO PART

DESCRIPTION OF MATERIAL

Surface Area analysis instrument
(As per our technical specifications)

Closing time and date :	14.00 Hours on 27.02.2015
Tender will be open at :	15.00 Hours on 27.02.2015

Both Technical Bid (Part A) and Financial Bid (Part B) to be submitted within the due date and time in separate envelopes and marked on top as Part A and Part B. These two sealed envelopes should be further put in one Master Envelope super scribed with the Tender No., Due Date in Bold Letters.

Please see attached sheet for conditions of tender.

(D. Hariprasad)
Administrative Officer

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

Specifications for Surface area analysis instrument

	Parameter	Specifications
1.	PHYSISORPTION	
a)	Surface Area	The unit should have the capability of carrying out physisorption of various gases and should have features to measure the adsorption / desorption isotherms, surface area (Langmuir, BET), pore size, pore volume and micro pore distribution. It should have at least one sample measurement. The system should be capable of measuring surface area in the range of 0.01 m ² /g to no known upper limit (nitrogen) and 0.0005 m ² /g to no known upper limit (krypton)
b)	Pore Diameter	The system should be capable of measuring pore diameter in the range of 3.5-5000 Å and micropore volume detectable within the range of 0.0001 cc/g or lesser.
c)	Analysis Station	The system should have minimum one or more analysis station with micropore facility
d)	Dewar Flask	The system should be supplied with a 90+ hour dewar, for ultra-long Measurements without any need to invoke error producing refills.
e)	Coolant Level Control	The system should have an automatic, motor-driven cryogenic coolant level controller to minimize the cold free space, i.e. within 4cm of base of lowest portion of sample cell for enhanced sensitivity or equivalent.
f)	P0 Station	The system reference pressure P ₀ station should be served by its own dedicated 1000 torr transducer to constantly monitor saturation pressure without interrupting pressure readings at the sample station. The pressure transducer should have an accuracy of 0.1%FS
g)	Adsorbates	The system should be designed to use gases like, CH ₄ N ₂ CO ₂ H ₂ , CO, NH ₃ etc. the quoted systems should have at least five gas inlet ports or more.
h)	Vapour adsorption	The system manifold should be temperature monitored and designed with corrosive resistant material and should have option to do vapour adsorption at least at one port or more.
i)	Pressure Transducers	The system should be equipped with pressure transducers in different ranges like 1000 mmHg, 10 mm Hg and 1 mmHg. The system should enable full range adsorption measurement, including micropore measurement. The pressure transducers should have high resolution and accuracy with high stability. The offer should provide the resolution and accuracy data of these transducers. It should have dedicated P ₀ transducer.
j)	Analysis Capability	The system should have facility for, Isotherms: Up to 1000 data points (per station), adsorption and/or desorption. Hysteresis scanning. Surface Area: BET, Langmuir, STSA, DFT, BJH Micropores: NLDFT, QSDFT, Monte-Carlo, t-plot, alpha-s method, MP method, DR & DA methods. Mesopores: NLDFT, BJH, DH also it should have Total pore volume and average pore size. Automatic BET point selector for microporous materials.

k)	Degassing facility	Built in two or more vacuum degassing stations, each consisting of sample port, heating mantle with over-temperature protection, PC programmable ramp / hold / test protocols. Degas ports should be served by the dry turbo vacuum system, and a dedicated cold trap. Temperature range ambient to 450° C. Temperature accuracy $\pm 1\%$ of set point at thermocouple
l)	Other facility	The system should have features for automated real time free space measurement. Certified reference standards to be supplied for while making adsorption studies. The system should have provisions for at least 5 gas inlets or more.
2	CHEMISORPTION	
	The system should have facility to onsite upgrade to chemisorption which should have One pretreatment / analysis station consisting of a sample port, a high-temperature furnace, furnace controller, automatic isolation / vent valve. Supplier should provide the evidence of the onsite upgrade at least one installation report .	
3.	PC interface, Data analysis and software features	The system should controlled through windows based software. Calibration routines to be controlled by the software. Features for creation of methods for measuring the adsorption/desorption isotherms. The software should have all the data handling features like user defined report generation, data/figures export to spreadsheets, offline data processing etc.
4.	Standards	Suitable performance evaluation standard for Surface Area should be included in the offer.
5.	Gas Cylinders and Regulators	Gas cylinders must be 99.999% Ultra High Purity with two stage gas regulators. Nitrogen, Helium, Hydrogen and CO2 should be supplied .
7.	LIQUID NITROGEN	30 Liters of Liquid Nitrogen Container should be supplied.
8.	COMPUTER	Latest Computer with minimum Windows 7, with 500GB HDD or more and minimum 2 GB RAM should be supplied
9.	Install Base	In last three years supplier must have supplied and installed at least 10 similar systems or more to any of the leading institutions in India such as IISC/IIT's /CSIR/DRDO/DAE etc provide the list of users .
10.	Warranty	The Quoted system should be under warranty for 12 Month or more from date of Installation

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

TERMS AND CONDITIONS

1. **PART "A" (Technical Bid) consisting of Technical Bid & Commercial Terms and PART "B" (Financial Bid) consisting of only Price** shall be submitted in **separate** sealed envelopes duly superscribed with the tender enquiry number, and the due date in bold letters, addressed to the Administrative Officer, Tata Institute of Fundamental Research, 21, Brundavan Colony, Narsingi, Gandipet Road, Hyderabad - 500 075. The envelopes should be clearly marked on top as either PART "A" or PART "B". The two sealed covers should be further put in a master cover superscribed with the Tender Enquiry No., Due Date in bold letters, addressed to the Administrative Officer, Tata Institute of Fundamental Research, 21, Brundavan Colony, Narsingi, Gandipet Road, Hyderabad - 500 075. The sealed master envelop has to be delivered by hand/courier at the security Gate of TIFR, Hyderabad on or before 14.00 hrs on the due date specified. The technical bid will be opened in the presence of attending tenderers at 15.00 hrs on the due date at Administration Section, TIFR, Hyderabad. Tenders submitted after 14.00 hrs. on due date will not be considered.
2. In case the PART "A" and Part "B" bids are not sealed in separate envelopes the tender will be rejected.
3. The technical bid should not contain any indication of the price.
4. After scrutiny of Technical Bids, Financial bids of only those bidders who are shortlisted on technical basis will be opened at on later date. The opening date, time and venue will be intimated to the technically successful bidders.
5. The firm who wishes to download the specifications, terms and conditions may do so. While submitting the quotation, a **DD of Rs. 500/-** for each tender drawn in favour of "Tata Institute of Fundamental Research, Hyderabad" payable at Hyderabad may please be enclosed along with Technical Bid. In case of Foreign Suppliers prepare advance cheque for **US\$100**.
6. After downloading the documents please inform your company details such as name, address, telephone nos., contact person and email address etc. by email to us. (msrilatha@tifrh.res.in, harid@tifrh.res.in), to enable us to inform prospective bidder for any corrigendum/changes if any; in the Tender document before due date.
7. Quotations must be valid for a period of 180 days from the tender opening date.
8. Tenders containing correction, overwriting will not be considered. Late or delayed/unsolicited quotations/offers shall not be considered at all. Post tender revisions/corrections shall also not be considered.
9. Tenderer should sign on all the pages of the technical bid and the price bid.
10. The offer for Import item should indicate separately the price on Ex-works basis (duly packed airworthy and of international standard). For local item / supply, offer should be on FOR basis (i.e., total landed cost of delivery at TIFR Hyderabad). The dimensions of the item (viz. H, W, L, weight etc.) shall be specifically stated and also mention whether the mode of shipping the item is Airworthiness. Accordingly the mode of shipment will be decided by TIFR.
11. If equipment offered is to be imported, arrangements for import will be made by us.
12. Tenders who do not comply with any of the conditions are liable to be rejected.
13. The Institute shall be under no obligation to accept the lowest or any other tender received in response to this tender notice and shall be entitled to reject any tender without assigning any reason whatsoever.

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

14. TIFR reserves the right to place the order for part/reduced quantity than what is specified in the tender.
15. PAYMENT TERMS: **80%** payment shall be made through irrevocable L/C on presentation of complete and clear shipping documents and balance **20%** of the amount shall be released after the receipt, installation, commissioning and acceptance of the equipment.
16. For Import cases: **No Agency commission will be paid as per Govt. of India rules.**
17. TIFR is exempted from paying of **Custom Duty** under the notification No.51/96 dated 23.07.1996, **Excise Duty** under the notification No.10/97 dated 01.03.1997, for all procurements/supply meant exclusively for Educational, scientific and research purpose. Whenever the exemption certificate not honored by the authorities, the applicable duty will have to be paid. Hence Excise & Custom duties, if any, should be shown separately.
18. **SALES TAX:** TIFR does not have any exemption/concession on payment of Sales Tax/VAT and we are not authorized to issue any Sales Tax Form „C“ & „D“
19. The delivery period should be specifically stated and earlier delivery may be preferred.
20. **The Supplier shall arrange to ship the ordered materials within the mutually agreed delivery period mentioned in the order unless extended with/without penalty.**
 - a. In case of delay in supply on part of the supplier, a penalty @0.5% per week of order value will be charged for delayed period subject to a maximum of 10% order value.
 - b. If the delay in the shipment of the ordered materials attributable to the supplier exceeds agreed time period from the date of original agreed upon date of shipment and extended with/without penalty, the TIFR, Hyderabad shall have the right to cancel the contract / purchase order and recover the liquidated damages from other dues of the party or by legal means. It will also affect the other/future business dealings with such suppliers.
 - c. The same rate of penalty shall be applicable for late installation of the equipment/instrument also.
21. **COMMENCEMENT OF WARRANTY PERIOD:** The warranty period of an item shall commence from the date of receipt of the item in good working condition and satisfactory installation/commissioning/demonstration at the project site.
22. **ANNUAL MAINTENANCE CHARGES:** The party must mention in the quotation, the rate/amount of annual maintenance charges, if we opt for maintenance contract after expiry of the warranty period if necessary.
23. Specifications are basic essence of the product. It must be ensured that the offers must be strictly as per our specifications. At the same time it must be kept in mind that merely copying our specifications in the quotation shall not make the parties eligible for consideration of the quotation. A quotation has to be supported with the printed technical leaflet/literature of the quoted model of the item by the quoting party/manufacturer.

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

24. **OBSERVANCE OF LOCAL LAWS:** Wherever applicable (particularly for Local vendors), the vendor / contractor shall comply with all law, statutory rules & regulations etc. The vendor/ contractor shall obtain all necessary permits / approval from the local Governing Body, Police, and other concerned Authorities as may be required under law. The vendor /contractor shall pay all types of taxes, fees, license charges, deposits, duties, tolls, royalty or other charges that may be leviable on account of any the operations connected with the execution of this work/ contract.
25. In case of any interpretational issues arises in this tender, the clarifications/decision of TIFR shall be final and binding on the bidder.
26. It is the responsibility of the vendor to make sure that the system being proposed can be exported to India with TIFR as the end user. All clarificatory documentation must be submitted with the Bid.
27. TIFR reserves the right to ask for or to provide any clarification, changes after the release of this tender. **Any changes or clarifications provided by TIFR may be checked at TIFR website <http://www.tifrh.res.in/tcis/contact/tenders.html>**

Administrative Officer
TIFR - Hyderabad