

**INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE  
2A & B, RAJA S.C.MULLICK ROAD, JADAVPUR  
KOLKATA -700032**

**TENDER NOTICE NO. SR/S1/OC-18/2012/SG/PSU/13/44 dated  
12.11.2013**

Sealed tenders in two bids system (Technical Bid & Financial Bid) are invited from bonafide, resourceful and eligible manufacturers/exclusive distributors for "FT-IR Spectrometer"

**Part - I** (Technical Bid) of the tender should contain technical details and commercial terms and conditions and **Part-II** (Price Bid) should indicate group-wise price as mentioned in the Technical Bid where applicable. The Technical Bid and Price bid are to be submitted in two separately sealed envelopes distinctly marked accordingly and both to be put inside another envelope, which should be sealed and superscribed with tender notice no. and due date. The bidders may submit bids duly signed in their own letterheads.

Complete tender should reach **Dr. Suhrit Ghosh**, Polymer Science Unit, Indian Association for the Cultivation of Science, 2A & B Raja S. C. Mullick Road, Jadavpur, Kolkata-700032 on or before scheduled date & time specified below.

Tender Notice No.	SR/S1/OC-18/2012/SG/PSU/13/44 dated 12.11.2013
Last date and time of submitting tender	4 <sup>th</sup> December, 2013 at 1.00 P.M.
Pre-bid meeting	22 <sup>nd</sup> November, 2013 at 3.00 P.M. in SN Bose Hall, IACS, Kolkata
Date and time of opening tender	6 th December, 2013 at 3.00 P.M.
Place of opening tender	S.N.Bose Hall, IACS, Kolkata
Contact	e-mail:psusg2@iacs.res.in Tel. +91- 33-2473 4971 (Extn. 1563)

The technical bids will be opened first to evaluate the technical specifications of the equipment thereafter, the **Price bids** of only technically qualified bidders will be opened.

**1) Technical Bid Evaluation:** The Technical Bids will be evaluated in the presence of the representatives of intending bidders who will be able to clarify technical aspects of their bids, if any, required by the Technical Evaluation Team.

**Opening of price-bid:** The Price Bids of the bidders qualifying the technical bid will only be opened, the date of which will be intimated to the short-listed bidders at their email addresses. The rest of the bids will be rejected.

Please note that IACS will not provide any accommodation or expenses to any of the bidders for attending opening of technical bids.

## 2) **Technical Bid:**

The Technical Bid should contain technical specifications and kept in a separate envelope duly superscribed as "**Technical Bid**" on the outer side of the envelope as detailed above.

## 3) **Technical Specifications for FT-IR Spectrometer with Temperature Accessory for Demountable Liquid Cells and other accessories:**

### **Optical System:**

- (a) **General:** Sealed and desiccated optical unit and Vibration isolated base-plate, preferred.
- (b) **Interferometer:** Michelson interferometer for fast scanning, self-compensating for dynamic alignment changes due to a tilt and shear
- (c) **Source:** Should be user replaceable long-life source with hot spot stabilization
- (d) **Automatic Performance Verification:** should have fully automatic filter wheel containing traceable reference materials and software allowing abscissa, ordinate, noise, ASTM and USP tests to be performed
- (e) **Beam-splitter:** extended range KBr
- (f) **Detector:** Temperature stabilized DTGS detector, preferred

### **Desirable Optical Performance Specifications:**

- (a) **Wavelength Range:** Minimum: 8,000- 350  $\text{cm}^{-1}$  (an even larger window is preferred)
- (b) **Spectral Resolution:** 0.4  $\text{cm}^{-1}$  or better
- (c) **Wavelength Precision:** 0.008  $\text{cm}^{-1}$  at 2,000  $\text{cm}^{-1}$
- (d) **Wavelength Accuracy:** 0.02  $\text{cm}^{-1}$  at 2,000 $\text{cm}^{-1}$
- (e) **OPD velocity range:** 0.1, 0.2, 0.5, 1, 2 and 4  $\text{cm}^{-1}$

(f) **Signal-to-Noise:** 15,000:1 (an even higher ratio is preferred) peak-peak 5 seconds scan; 50,000:1 (an even higher ratio is preferred) peak-peak 1 minute scan.

#### **Data System / Software:**

**Automatic Atmospheric Compensation:** The system should be offered with Automatic Atmospheric Compensation - to minimize the effect of atmospheric water and CO<sub>2</sub> interference without the need for purging or Vapor reference spectra

**Control Software:** Comprehensive suite of control functions with multi-level user interface, graphical display of optical element ranges for optimized operation, automatic instrument setup with smart sample accessories. Rapid Mid- / Far-IR range changing with automatic system optimization

**Spectral Processing:** Extensive range of derivative, smooth, subtraction, normalization and other spectral data transforms should be available. Spectra calculator for custom operations to be provided

**Quantitative Analysis:** Single frequency method development software to run single frequency, PLS or PCR quantitative predictions

#### **Essential Accessories:**

**A. Transmission Accessories:** FTIR unit must be quoted with 1) Demountable Cell Mount, 2) Set of KBr & CaF<sub>2</sub> Windows for Liquid Cell 3) Assorted Rectangular Spacers, 4) Sealed Liquid Cell of KBr & CaF<sub>2</sub> - 0.2mm 4) 13 mm KBr Die Set, 5) Potassium Bromide Pellet Holder, 6) Adjustable Adaptor and 7) Rechargeable Desiccant Kit.

**B. Temperature Accessory for Demountable Liquid Cells:** FTIR unit must be offered with **Mid-IR Transmission Accessory - For Precise Temperature Control of Demountable Liquid Cells** with following Specification,

- **Temperature Control** Peltier (cooling and heating)
- **Temperature Range** 5 °C to 105 °C
- **Accuracy** +/- 1.0 % maximum, more accuracy is preferred
- **Sensor Type** 3 wire Pt RTD (low drift, high stability)
- **Temperature Controllers** - Digital +/- 0.5% of set point
- **Input Voltage** 90-264 V, auto setting
- **Output Voltage** Variable 3-15 VDC/50 W max.

The above accessory must be offered with -

- Base with Cell Holder, Digital Temperature Control Module, Demountable Liquid Cell Windows (32 x 3 mm disks 1 Plain and 1 Drilled) of KBr & CaF<sub>2</sub>, Assortment Liquid Cell Spacers.

**Essential Indigenous Items**

- (a) Suitable Branded Desktop PC with A4 size B/W LaserJet Printer
- (b) Branded 2 KVA Online UPS
- (c) 15 Ton Hydraulic Press for Pellet Preparation
- (d) UHP Grade N<sub>2</sub> Gas Filled Cylinder with double stage SS Regulator and trap

Technical compliance chart should be provided following the following format\*

Sr. No.	Tender specification	Your offered instrument specification	Extent of compliance

*\*Tender will not be accepted if the technical compliance chart is not provided following the above format.*

- 4) **User List:** The supplier should provide a list of current users (with contact no, Email address etc) for the quoted item in India.
- 5) **Service facility:** Trained technicians should install the instrument and ensure it is operating correctly and within specifications. User training at site should also be provided. Supplier should mention their details of service setup that are responsible for after sales support.
- 6) **Price Bid:**

The financial bid indicating (item-wise) price for the item(s) mentioned in the technical bid should be kept in a separate sealed envelope duly super scribed as "**PRICE BID**" on the outer cover of the envelope as already detailed above. The price bids of only technically qualified bidders will be opened and they will be intimated the date and time of opening of price bids at their email id-(s). Rest of the bids will stand rejected.

7) **Price:** Price to be quoted both on FOB/CIF basis. Name of the particular port from where our authorized forwarder will lift the consignment must be mentioned clearly with FOB price.

8) **Bid Security:**

1. The financial bid should be superscribed as "**PRICE BID**" on the outer cover of the envelope

2. **Bid Security (EMD):** An Account Payee Demand Draft of **Rs.40,000/-(Rupees forty thousand only)** in the name of "**Indian Association for the Cultivation of Science**" is to be furnished by the bidders, as Bid Security money or Earnest Money Deposit (EMD).

3. The Demand Draft for the Bid-Security money should have at least 45(forty five) days validity period after the opening of the Bids.

4. In case of non-award of the work the Bid Security money would be returned to the unsuccessful Bidders.

9) **Performance Security:**

An Account Payee Demand Draft of an amount of **10% of the order value** in the name of "**Indian Association for the Cultivation of Science**" is to be furnished by the successful bidder as Performance security. Performance security money should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the supplier including warranty obligations. Bid security money will be refunded to successful bidder on receipt of the Performance security money.

10) **General Instructions:**

1. Incomplete & conditional tenders and tenders received after the due date will be summarily rejected without assigning any reasons thereof. "**Dynamic Rotational & Oscillatory Research Grade Rheology Instrument with Peltier temperature Controller**" should clearly be written on the envelope.

2. At any time prior to the bid due date, IACS may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder during pre-bid meeting, modify the bidding

documents. The amendment(s) will be notified on the Institute website. Prospective bidders are advised to occasionally visit the website ([www.iacs.res.in/tender](http://www.iacs.res.in/tender)) for any amendment.

3. **Payment:** 100% against delivery and successful installation subject to submission of performance guarantee.

4. **Warranty:** Minimum 5 years or 2 years warranty + 3 years annual maintenance contract.

5. **Installation/Demonstration/Application Training at site:** Free of cost by the supplier.

6. **Service facility:** Supplier should mention their details of service setup and Manpower in Kolkata who are responsible for after sales support. Response time should be within 24 hours.

7. **Validity of tender:** Tender submitted shall remain valid at least for three months from the date of opening of the tender. Validity beyond four months from the date of opening of the tender shall be by mutual consent.

8. The tender should accompany a compliance chart.

9. The rate should be inclusive of all taxes, transportation etc. Nothing extra will be paid in addition to the quoted rate.

10. The model number, make, and a printed literature of the product shall be submitted positively.

11. Proposed delivery schedule should be mentioned clearly.

12. Manufacturers/exclusive distributors/vendors should have history of supplying this type of instrument to this or other Scientific Organization.

13. Authorized Dealership Certificate is must in case of principal manufacturing company is not quoting directly.

14. Guarantee certificate, users manuals etc. are to be handed over to the user after successful commissioning of the system.

15. In the event of date being declared a closed holiday for purchaser's office, the due date for submission of bids and opening of technical bids will be the following working day at the appointed time.

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

17. For any clarification regarding technical specifications etc. please send your queries to "Dr. Suhrit Ghosh" at [psusg2@iacs.res.in](mailto:psusg2@iacs.res.in)

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

**Registrar**