

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE
2A & 2B, Raja S. C. Mullick Road, Jadavpur, Kolkata-700032

NIT No. : IACS/CSS/AB/47

Date: 02.01.2024

Sealed tender in two bids system (separate Technical bid and Price bid) is invited from bonafide, resourceful and eligible manufacturer/exclusive distributor/vendors for the purchase of **Wavelength Dispersive X-ray Fluorescence Spectrometer (WDXRF)** under the Central Scientific Services, IACS.

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

Completed tender bids should reach the office of the **Registrar, Indian Association for the Cultivation of Science (IACS), 2A & 2B Raja S. C. Mullick Road, Jadavpur, Kolkata- 700032** on or before the scheduled date and time specified below:

Tender Notice No.	IACS/CSS/AB/47 Date:02.01.2024
Last date and time of submitting tender	23/01/2024, within 5.00 PM
Pre-bid meeting(date, time & place) to discuss technical specification	08/01/2024, 5:15 PM (via google meet, link will be provided to the interested bidders upon request)
Date and time of opening tender (Technical Bids)	24/01/2024, 3.00 PM
Place of opening tender	Venue would be declared later
Date and time of 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.
Contact	Prof. Asim Bhaumik Email: msab@iacs.res.in Tel.+91 33 2473 4971 [Ext 1207]

The technical bids will be opened first to judge/evaluate the technical specifications of the said instrument and thereafter the price bids of only technically qualified bidders will be opened.

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 reimburse any expenses to any of the bidders for attending opening of technical bid.

Incomplete quotations or quotations received beyond the stipulated time will be summarily rejected.

Bidders should submit their past experience for supplying and successful installation of similar units to other research Institutes/Universities/other organizations in India and abroad in last 10 years. Please provide documentary proofs of such successful installation and supportive documents that the instruments are running successfully.

1. TECHNICAL BID

The technical bid should contain technical specifications and should be kept in a separate sealed envelope duly superscribed as “TECHNICAL BID” on the outer cover of the envelop as already detailed above. It should be clearly mentioned on the envelope as "**Wavelength Dispersive X-ray Fluorescence Spectrometer (WDXRF)**".

Technical Specifications for Wavelength Dispersive X-ray Fluorescence Spectrometer (WDXRF)

The XRF (alternatively known as X-ray spectrofluorometer) system should be a sequential wavelength dispersive XRF spectrometer (WD XRF) with capabilities for high speed and high precision qualitative, quantitative, semi quantitative standard less analysis. The spectrometer should be able to analyze elements from Boron to Uranium in solids as per the following specifications and configurations:

- Vendors must quote their recent models.
- Name of specifications/ part accessories of tender enquiry.
- **Sample Changer:** Automatic programmable sample changer with capacity to handle minimum 10 positions in the sample tray.
- **Sample Types:** Should be able to handle solids and pressed powders.
- **Sample Size:** Spectrometer should be capable to handle sample diameter between 20-40 mm.

X-Ray Tube:

- Anode material: Rh
- Tube type: End window type
- Power: Minimum 3 kW Capacity
- Voltage Increment: In steps of 1 kV or less
- Current Increment: In steps of 1 mA or less
- Stability: $\pm 0.005\%$ (for both kV and mA, against $\pm 10\%$ input variation) or better
- Cooling: Air/Water Cooled
- Primary Filters: Should have minimum 4 primary tube filters
- Primary Collimators: Should have minimum 2 primary tube Collimators
- Beam Path: Vacuum
- Automatic Mask: Should have mask to handle sample.

Crystal Changer: Should have minimum 8 position crystal changer or more.

- Crystals: Should have LiF200, LiF220, PET, suitable multilayered artificial crystal for analyzing Carbon, Boron, Oxygen and Nitrogen with high sensitivity. Suitable crystals should be provided to measure elements from Boron to Uranium.
- Vacuum Pump: The spectrometer should be evacuated with a suitable vacuum pump.
- Spinner: Should have in-built spinner with minimum 30 rpm rotation speed.
- Safety: Should have proper safety for dust and radiation.

Goniometer with suitable angular accuracy and reproducibility should be provided.

- Goniometer maximum scanning speed: > 1400 degree/minute (2 theta)
- Temperature stabilization: ± 0.1 degree Celsius or better
- Drives: Should have two independent drives for theta & 2 theta.

Number of detectors: Should have 2 detectors, Flow Proportional & Scintillation Detector.

Sample holders: Proper sample holders (at least 10) should be provided.

Computer: Branded latest configuration high end workstation suitable for the instrument and compatible with the XRF Control and calibration software must be quoted. Operating system MS Windows 10 Professional.

Instrument Control & Calibration Software: Windows operating base should have following basic minimum features:

- Multipoint background correction
- Line Overlap Correction
- Ratio Calculation and Auto PHD/PHA measurements
- Calibration Curve (Net intensity / concentration, corrected intensity / concentration) for quantitative analysis.
- Empirical matrix correction models
- Theoretical alpha matrix correction models
- Variable alpha matrix correction models
- Compton & Rayleigh scattering correction model.
- Calculation of concentration functions
- Data Storage.

The software should be able to run without standard materials (standard-less) quantitative analysis. However, option should also be there to run the system with proper reference standards.

Safety requirements: All kinds of safety protection for radiation, electrical, electronics should be in built as per International regulation/norms. All these norms should be clearly specified in the offer.

Optional Accessories:

- One numbers of P-10 Gas cylinders with one number of compatible gas regulators to be offered.
- One number of external chiller should provide proper cooling of the WDXRF machine.
- Suitable UPS with minimum 30 min back-up for the WDXRF machine, PC and Printer.
- One number of suitable press pallet system should be offered.

Warranty: Instrument must have comprehensive warranty of minimum 1 year from the date of installation, commissioning and trial run.

Installation, Commissioning & Training: Installation, commissioning, demonstration and training should be done at IACS, Kolkata for one week at free of cost.

General: The capability of the system performance including various measurement options has to be supported with documental proofs (published data, list of installation worldwide along with contact details of customers). Onsite after sales service, within 48 hours of reporting any problems, is mandatory. It is essential to have a technical person stationed in Kolkata.

A compliance table (see below) must be prepared and submitted along with the technical bid.

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

2. 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 superscribed as “PRICE BID” on the outer cover of the envelop as already detailed above. Price bids of only technically qualified bidders will be opened and they will be intimated the date and time of the opening of price bid at their e- mail ids. Rest of the bidders will stand rejected.

PRICE: Price to be quoted on CIF Kolkata and also FOB basis.

3. BID SECURITY:

a. An Account payee Demand Draft/Pay Order of any of the Nationalized Banks for Rs. 3,00,000/- (Rupees THREE LAKH only) drawn in favour of “Indian Association for the Cultivation of Science (State Bank of India, Jadavpur University Branch, A/C No. 11079699211, IFSC: SBIN000093, MICR Code: 700002048)” is to be furnished by the bidders except those who are registered with the Central Purchase Organizations, National Small Industries Corporation or the concerned Ministry or Department, as Bid Security money or Earnest Money Deposit (EMD). Alternatively, the Bidder shall have the option to furnish the EMD in the format of Bank Guarantee (BG).

b. The Demand Draft for the Bid-Security should have at least 90 (ninety) days validity period of opening of the bids.

c. In case of non-awarding of the work the Bid Security money would be returned to the unsuccessful Bidders, which will bear no interest.

4. PERFORMANCE SECURITY:

An Account Payee Demand Draft on any nationalized bank of India 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 or EMD will be refunded to successful bidder on receipt of the Performance security money.

5. TERMS OF PAYMENT:

Payment will be made through irrevocable Letter of Credit in two instalments. 90% of the money will be released on submission of shipping of documents. Remaining 10% will be released after successful installation of the instrument.

6. GENERAL INSTRUCTIONS:

1. Validity of tender: Tender submitted should remain valid for at least six months from the date of opening the tender. Validity beyond six months from the date of opening of the tender shall be lapsed by mutual consent.
2. The tender should accompany a compliance chart.
3. Incomplete and conditional tenders as well as tenders received after the due date will be summarily rejected without assigning any reasons thereof.
4. 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, may delete or 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) for any amendment.
5. Installation/Demonstration/Application training at site: Installation & user training at IACS, free of cost by the supplier.
6. Service facility: In India, preferably Kolkata, supplier should mention their details of service setup and manpower who are responsible for after sales support. Response time should be within 48 hrs.
7. The model number, make and a printed literature of the product should be submitted positively.
8. Proposed delivery schedule should be mentioned clearly.
9. Manufacturers / exclusive distributors / vendors should have history of supplying this type of instruments to this or other scientific organizations. Availability of a list in this regard would be preferred.
10. Authorized dealership certificate should be provided in case of principal manufacturing company is not quoting directly.
11. Guarantee certificate, users manuals etc. are to be handed over to the user after successful

commissioning of the system.

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

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

14. For any clarification regarding technical specifications, information etc., please send your queries to Prof. Asim Bhaumik (msab@iacs.res.in).

15. The authority of IACS reserves the right to reject any or all of the tenders received without assigning any reason thereof.

Registrar