



Central Purchase unit
National Institute of Technology Srinagar (J&K) -190006

Email: cpu@nitsri.ac.in

"Tender Document No. 64 Dated: 03.04.2019.

" Notice for Invitation of Bids for the supply of Wave Length Dispersive X-Ray Fluorescence Spectrometer for Central Research facility Centre, with a provision of Pre-bid Conference"

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1. Sealed Bids are invited for supply of the equipment having detailed Specifications as given in Annexure –I, in a 2- bid format with a Pre-Bid Conference on the terms & conditions and as per the instructions given below from para-2, from interested eligible bidders:
- 2. Techno-Commercial Bid, Containing the following documents in Envelope- A:-**
 - (a) Proof of being Original equipment manufacturer or Distributor/Marketing agent/ Authorized dealer in the shape of copy of agreement and registration under law in force. *(b)The OEM (Original Equipment Manufacturer) of offered product should be ISO 9001:2015 and ISO 14001:2015 certified or certified by any other national or international regulatory body. The products quoted must also be certified.*
 - (c) PAN card & GST registration document of the firm.
 - (d) ITR's of previous 3-years.
 - (e) *Proof of annual turnover of the firm for last three years in such trade, which shall not be less than Rs.500.00 lacs., with at-least one such contract worth not less than Rs. 200.00 lacs or two such contracts worth Rs. 300.00 Lacs to reputed Institutes/ organizations/ Departments..*
 - (f) Proof of availability of after-sale support & service centre.
 - (g) Bid security for Rs. 2.00 lacs in the form of CDR/BD/DD/TDR/FDR pledged to Officer In-charge, Central Purchase Unit NIT Srinagar (J&K) and tender document fee Rs.3,000/-in the form of DD, favoring of Director, NIT Srinagar. Tender without bid security /document fee shall be rejected.
 - (h) Bid form in the format given in Annexure-II duly filled.
 - (i) List of organizations/ Institutions where such equipment has been supplied & installed successfully during last 3-years.
- 3. Price Bid Containing the following in Envelope-B:-**
 - (a) Prices offered and quoted both in words & figures. Prices must be offered /quoted in the format enclosed as Annexure-III in INR/Foreign currency. The rates quoted should be covered with transparent tape.
 - (b) The rate quoted should be FOR NIT Srinagar (J&K), including 5-days training at site.
 - (c) Bid price should be without over writing. However minor over writing should be clearly signed by the bidder. In case of any discrepancy between price quoted in figures and words, the price quoted in words will prevail. Bid price should be firm for the bid validity period.
 - (d) All duties, taxes and levies (GST or other charges) payable, must be quoted separately, which will paid as per rates applicable.

- (e) As per SRO 129 of Government of Jammu & Kashmir, the institute is Exempted from State entry tax. The Institute will provide Entry tax exemption certificate to successful bidder with supply order.

4. Validity of Bids

Bids shall remain valid at least for 120 days from the date of opening of the bids.

5. Evaluation of Bids.

- (a) The purchaser shall first evaluate and compare the technical bids as per following criteria to determine the techno-commercially qualified bidders:
- (i) Properly filled and signed as per given formats
 - (ii) Conform to terms and conditions and technical specifications.
 - (iii) Are accompanied with Bid security and all other documents
- (b) *In the 2nd step, the financial bids of only those bidders who qualify from the above process will be evaluated to determine the final successful bidder.*

6. Award of contract

- (a) Contract shall be awarded to the bidder whose bid qualifies techno-commercially and is offered at lowest reasonable evaluated price.
- (b) Successful bidder shall be notified about the award of the contract through a supply order where- in terms and conditions of supply shall be incorporated.

7. Payment & Performance Guarantee:

100% (90% + 10%) payment shall be made after successful receipt of the equipment in good condition and as per prescribed specifications verified by the nominated committee and after successful installation & commissioning/ training of the NIT staff. 10% will however be retained as security deposit against performance guarantee for the warranty period.

8. Warranty and after sale service:

- (a) All items shall carry comprehensive standard warranty of 12 months from the date of installation & commissioning as well as service support after expiry of warranty, through an AMC.

9. Settlement of disputes.

Settlement of disputes if any shall be subject to the jurisdiction of Srinagar Courts only.

11. Liquidated Damages.

If the bidder after accepting the purchase order of goods/equipments or services, fails to deliver any or all of the goods/equipments or to perform the services with-in the specified period, a penalty of 0.50%(half percent) of the price value of the item per week or part -thereof shall be imposed. The maximum penalty shall be limited to 10% of the cost. However, NIT Srinagar shall proceed on its own to consider the termination of the supply order, on the risk & responsibility of the defaulting bidder, if it appears that the supplier is not interested and delay is causing academic loss.

12. Submission of Bids.

- (a) The last date for submission of bids is 24.04.2019 (Wed) upto 16.00 hours. *However for ensuring wider participation with any modification/improvement in the specifications of the equipment, a Pre Bid Conference will be held on 15.04. 2019 At 2.30 P.M. in the office of the undersigned. For this purpose, Interested bidders should register themselves with Prof. M.F Wani, Chairman CRFC or Prof.F.A.Mir Officer In-charge CPU whose email is given below.*
- (b) Bids should be properly sealed.
- (c) The two envelopes A & B should be separately sealed and superscripted as Techno

-Commercial Bid & Price Bid. These two sealed envelopes should be sealed in a bigger Envelop. All the 03 envelopes shall be specific with the address of the Tender receiving Officer; Tender Number; due date of submission, Name of equipment/item/department and name of bidder in bold and neat letters.

- (d) Bids should be addressed to Officer In-charge, Central Purchase Unit NIT Srinagar (J&K)
- (e) Bids not from Srinagar shall be dispatched sufficiently well in advance so as to reach the destination as per scheduled time & date. NIT Srinagar shall not be responsible for any delay caused by Post or Courier agency.

13. Bid opening.

- (a) The Techno-Commercial Bid (Envelope- A) will be opened first on 25-04-2019(Thu) at 2.30 pm in the office room of the undersigned in the administrative block of the Institute. Price Bid (Envelope-B) of the qualified bidders as detailed above will be opened subsequently. Interested bidders can attend the Bid opening.

14. Notwithstanding above, the purchaser reserves the right to reject any or all the bids received in response to this N.I.T. or withdraw it without assigning any reasons thereof.

15. For any future information or corrigendum or addendum regarding this tender, please be in touch with our website: www.nitsri.ac.in.

16. Any clarification may sought on the following emails:

- O/C, Central purchase Unit: cpu@nitsri.ac.in
- Chairman CRFC, Prof. M.F. Wani: mfwani@nitsri.ac.in

Officer In-charge
Central Purchase unit, NIT Srinagar
Email: cpu@nitsri.ac.in

N.B.

1. Before preparing your valuable bid kindly go through the document fully and take care of all the requirements.
2. Bidders from outside Srinagar may please send their Bids well in advance so that these are received in time.

No. NIT/CPU/19/4813

Dated 03.04.2019

Annexure-I
**“Name & Specifications of equipments for
Central Research Facilities Center(CRFC), NIT Srinagar”**

S.No	Description of items	Specifications	Qty
1	Wavelength Dispersive X-Ray Fluorescence Spectrometer with Accessories	<p><u>Detailed Technical Specifications</u></p> <p>1. General Description</p> <p>a) The XRF manufacturer should be internationally reputed and the instrument shall be fully automated, compact; computer controlled sequential Wavelength Dispersive X-Ray Fluorescent Spectrometer capable of analyzing elements from Be to U in the concentration ranges from ppm to 100% in pallet and fused bead form with high speed and high precision. The system shall be capable of analyzing major, minor and trace elements in Cement and its raw materials glass, rocks, Ferrous and Non Ferrous metals and their alloys along with liquid samples. The system shall be capable of analyzing major (Si, Ti, Al, Fe, Ca, Mg, Na, K), minor (S, P, Mn, Cr) and trace elements (V, Co, Ni, Cu, Pb, Zn, Sc, Rb, Ga, Sr, Nb, Zr, Y, Ba, Th etc.) . The system should also have provision for analyzing loose powder and liquid samples. The quoted model must be available currently for sale worldwide.</p> <p>b) The instrument shall be floor mounted with single cabinet including the control electronics and shall have auto sample changer. All kinds of safety protection for radiation, electrical and electronics should be in built as per International regulations/ norms. All these norms should be clearly specified in the offer.</p> <p>c) The instrument shall be cooled by an external chiller.</p> <p>d) The instrument model should be latest (launched not more than 4 years before) & should be available worldwide.</p> <p>e) The quoted model must have type approval certificate from Atomic Energy Regulatory Board (AERB).</p> <p>2. Sample Handling and Presentation</p> <p>The sample presentation system shall be capable of handling solids, liquids, pressed powders, loose powders and fused beads (40 mm dia.) in a variety of sample holders.</p> <p>The sample surface should face downwards during analysis facilitating loose powder and liquid analysis.</p> <p>Spectrometer shall have facility for automatic sample type recognition. An automatic sample changer with capacity of handling at least 50 samples at a time</p> <p>Vacuum Chamber Volume must be lowest with minimum number of vacuum joints and should have air locked device controlled by single built-in vacuum pump.</p> <p>Dust Collection System: To protect the x-ray tube and other accessories inside goniometer from sample particles the spectrometer shall be</p>	1 No

equipped with built in dust collection system. It should be user accessible for cleaning. The X-ray tube must be equipped with suitable protection against dust. The system shall also be equipped with mandatory spectrometer protection mechanism against spillage of liquid during measurement. Vendor has to clearly explain these protection features in their quotation. Protection of the X-ray tube and spectrometer chamber housing the optical components is a mandatory safety feature of the equipment.

3. X-Ray Generator & X-Ray Tube

X-ray Generator shall have rating 4 kW or more, voltage 60 kV or better and current 160 mA or more. There should be high level of generator and tube stability.

Diagnostic software should allow access to all important parameters of the generator.

X-ray tube should be Rh end window type with 4 kW rating or more, voltage 60 kV or better and current 160 mA or more. For better sensitivity in the analysis of lighter elements, the X-ray tube Be Windows Thickness should be 75 microns or less. The X-ray spectrometer must have a protective covering/feature to deal with accidental sample spillage and corrosive samples. The vendor should ensure special provision in the tube for drift free performance of minimum 10000 hours. It should have facility for Auto Tube Breeding, monitoring tube life, generator flashes, water flow, temperature, pressure inside goniometer and other status.

4. OPTICS

Collimator: collimator masks compatible with the diameter 40mm of sample pellet / bead shall be provided. Adequate primary collimator system with choice from ultra- high resolution to coarse should be available to optimize the measuring conditions for each element to cover ppm to percentage concentration range.

Beam path: The X-ray beam path shall be selectively changeable between vacuum, air and helium medium. Measurement medium shall be vacuum for solids, fused beads and pressed pellets; Helium for powder and liquids.

Tube filters: Minimum four primary beam tube filters shall be attached including primary beam stopper.

Crystals: Crystal mill shall be bidirectional and equipped with minimum eight positions for crystals. PET, LiF 200 or equivalent, suitable crystal for measuring Oxygen to Magnesium to be quoted.

Spinner: Sample spinner with 30 rpm or better to be inbuilt and to be quoted.

Detectors: Provision for at least 2 types of detector, Gas flow proportional & scintillation detector. The detectors should be offered for optimum coverage of entire elemental range.

Goniometer: The goniometer shall be gearless/ with high precision gear, microprocessor controlled. Angular accuracy and reproducibility figures

to be specified by vendor with documentary evidence.
In case of any back lash error, the system should be capable of correcting it automatically. Temperature stability should be 0.05 C.

5. Control Software with license:

User friendly intelligent software should be quoted with following features.

- a) Spectrometry software should be WINDOWS based latest version including multi point background correction, line overlap correction, ratio correction, auto PHD measurement, calibration curve quantitative analysis incorporation matrix correction(based on different mathematical model), recalibration program, full screen colour graphics capabilities, limit checks, statistical evaluation, calculation of concentration function for quantitative analysis, data storage and retrieval with multi connecting facilities etc
- b) Extensive analytical software package for qualitative, quantitative, and standard-less analysis of various samples to be quoted. The supplier shall be responsible for the calibration of standard less program whenever it is required at customer's end at free of cost even after the completion of warranty.
- c) The software and hardware for remote diagnostics to be quoted as default. The remote diagnostics should be capable of checking the equipment parameters/ calibration etc. from a remote location.
- d) A choice of various calibration models and fundamental parameter method must be included in the analytical software package
- e) Fixed alpha correction facility and reporting should be available with the software
- f) Instrument updates should be possible per channel by measuring monitor samples or pre-analytical program by measuring recalibration standards
- g) Theoretical alpha correction software facility should be offered under basic system
- h) The licensed copy of the software (including analytical software for XRF) shall be supplied in CD- ROM with necessary help.
- i) All operational manuals/ flow charts, instrument manuals, important published literature of reference should be supplied at free of cost in hard copies and soft copies.

6. Computer:

Branded latest configuration high end PC (English US language version) with high capacity hard disk (1TB) and CD ROM drives, 21'' TFT colour monitor, Key board, mouse should be quoted with colour laser jet printer. Separate computer table should be provided for putting the CPU, Monitor and printer of the attached Computer along with two revolving chairs.

7. Power supply for the instrument should be 230 V± 10%, 50- 60 Hz± 5% as per Indian Standard with protective RF ground. Spectrometer should use 230 V± 10% single phase directly without the need of any step up or step-down transformer. The required material for RF ground shall be provided by the supplier.

8. **Reference samples:** Reference sample set (set of 5 glass samples) for calibration maintenance (drift correction) should be quoted.

9. **ACCESSORIES**

A. **UPS:**

The vendor shall supply UPS (with 15 kVA or suitable for XRF machine) with isolation transformer in output voltage and 30 minutes back up suitable for the XRF from reputed brand (with quality certificates), It shall contain maintenance free batteries and vendor shall be responsible for maintenance of the UPS also.

B. **Sample Grinding and Vibratory Cup Mill:**

Semi-automatic with display. 1 Tungsten Carbide lined Bowl, - 150 ml capacity, 1 Chrome Steel Bowl – 150 ml capacity.

C. **Pelletizing Press**

Pelletizing press: The vendor shall supply one pelletizing press 30 T capacity of reputed make, with tools and die (40mm) of reputed make. Wax- 1kG and cellulose binder- 1 KG.

Aluminum cups : 1000 nos.

D. **Air Compressor** (If necessary for the smooth functioning of XRF):

The compressor should be of reputed make & compatible with XRF. The compressed air should be of instrument grade, dry and oil free

E. **External water chiller:**

The party shall supply one external chiller of a reputed manufacturer.

F. **Gas Cylinder and Regulator**

I. P-10 Gas Cylinder with Regulators: **2 Nos.** (99.9% purity) for each unit. Purity certificate should be provided.

ii. Helium gas cylinder with regulator: **2 Nos.** for each unit.

G. **Sample Tray & Holders:**

Sample tray with provision for a minimum of 50 nos. of sample holding capacity in X-Y mode. 40 nos. of steel sample holders to handle sample of 40 mm dia. may be provided. The vendor shall supply at least 500 disposable cups & mylar film(90 mts. Rolls-2 rolls) appropriate for loose powder and liquid sample analysis.

H. Spares:

Vendors should confirm availability of spares for at least 10 years from the date of installation.

10. Warranty:

12 months standard warranty from the date of satisfactory installation and the supplier must enter into AMC for XRF, Chiller, UPS and sample preparation equipment.

11. Annual Maintenance Contract(AMC):

The supplying company shall undertake “Annual Maintenance Contract” (AMC) of the supplied instrument, at an additional cost/charge, immediately after completion of the Warranty Period.

12. Installation:

Installation & commissioning at site at no additional cost.

13. User Training at Site:

- 1) Training in India: 5 working days user training at the installation site on operation and calibration after commissioning.
- 2) All expenditures for imparting user training will be at no additional cost.
- 3) Since there will be no additional cost in Training element, the bidder need not to quote any cost towards training.

Note:- Equipment should be supplied with warranty and AMC executed

Final specifications shall be determined in the pre-bid conference.

Annexure-II
BID CHECK LIST

To,
Officer In-charge,
Central Purchase unit,
NIT Srinagar.

Ref: Tender No. _____ issued under No.: NITS/CPU/ 2019/.....
Dated..... for-----
ForDepartment

Sir,
With reference to above invitation for bids, we would like to say that we have gone through your bid document thoroughly and hence offer our competitive Technical/Price Bid in sealed envelope for the supply of various goods/equipment listed in your document.

The following documents constitute our Bid:

- | | |
|---|---------|
| • Technical specification/ literature attached:- | Yes/No |
| • Valid tax clearance certificate attached:- | Yes/ No |
| • OEM/ Authorized Dealership / certificate attached | Yes/ No |
| • Revenue stamp affixed. | Yes/ No |
| • Rates covered with transparent tape:- | Yes/ No |
| • Bid document fee deposited:- | Yes/ No |
| • Bid Security Receipt enclosed:- | Yes/ No |
| • Bid price in Indian Rupees and as per format given in annexure-III:- | Yes/ No |
| • Rater are FOR Srinagar including Installation/commissioning/
Training if required. | Yes/No |
| • Bid without correction/overwriting:- | Yes/ No |
| • Price Bid schedule in the requisite format | |
| • List of organization where this equipment has been supplied/Installed | |

Yours Sincerely

From M/S.....

Place:

Telephone No.....Email:

Date.....

Annexure-III

Price Schedule

S. No	Name of equipment/ Goods /item	Basic cost	GST	Any other tax	Total unit price	Quantity	Total Price
1							
2							
3							
4							
5							

