

**INDIAN INSTITUTE OF ENGINEERING SCIENCE AND
TECHNOLOGY, SHIBPUR**



BIDDING DOCUMENT

(Project Code: DRC/DST-FIST/PHY/HOD/015/18-19)

Ref. Advt. No., published in "Statesman (All Editions)", "Dainik Statesman
(Kolkata Edition)", dated

For Supply of

**One Set:
XRD with small angle and thin film attachment**

Under

**DST-Ministry of Science and Technology
Govt. of India (New Delhi)**

Department of Physics

December 13, 2018


19.12.18

**Head
Department of Physics
IEST, Shibpur
Howrah-711103**

**Office of the Dean of Research and Consultancy
Indian Institute of Engineering Science and Technology (IEST) Shibpur
P.O. Botanic Garden, Howrah – 711 103, West Bengal, India**

(Institute Project Code: DRC/DST-FIST/PHY/HOD/015/18-19)

Department of Physics
**Indian Institute of Engineering Science and Technology (IEST) Shibpur
P.O. Botanic Garden, Howrah – 711 103, West Bengal, India**

Tender reference No: e-Proc/DEANRES_13122018/ XRD_IEST/238

Date:13/12/2018

Complete sealed quotations are invited for the supply of items listed below as per specification mentioned. The quotation should include the delivery charges of the items to Indian Institute of Engineering Science & Technology, Shibpur, and should mention a firm delivery period.

1. Important Information:	
Location of supply:	Department of Physics Indian Institute of Engineering Science and Technology Shibpur, P.O. Botanic Garden, Howrah 711 103
Name of Work:	Supply and Installation of One Set XRD with small angle and thin film attachment
Estimated value of the equipment	₹ 87 Lakhs
Estimated time of supply:	Within two months of placement of order
Earnest Money Deposit	2% of the estimated cost, in favor of “The Registrar, IEST Shibpur” payable at Kolkata
Tender Fee (non-refundable)	Rs. 1000/- in in favour of “The Registrar, IEST Shibpur” payable at Kolkata.
Date of publishing tender	13/12/2018
Pre-Bid meeting date	18/12/2018 at 03:00 P.M. in the Office of Physics Department, IEST, Shibpur.
Last Date of Submission of Bid:	09/01/2019 up to 6 PM
Bids shall be submitted to:	e-Procurement Cell, IEST, Shibpur (http://eprocure.gov.in/eprocure/app)
Date of Opening of Technical Bid	11/01/2019 at 11:30 AM
Clarification needed on Bidding Documents may be inquired to	Dr.Amit Kundu, Head, Dept. of Physics, IEST, Shibpur e-mail: hod@physics.iests.ac.in
Officer Inviting Bid	Shri S.N. Datta, Deputy Registrar (Stores & Purchase) IEST, Shibpur
Validity	180 days
Delivery Place	CIF IEST, Shibpur. (mandatary in case of import)



19.12.18

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2.	Techno-commercial bid shall consist of the following Information and supporting documents towards: (Scanned copies of all the documents have to be submitted in the CPP portal with the tender/bid)
1	Name of the firm:
2	Address of the Registered Office
3	Contact Phone No and Contact E-mail address:
4	Place of registration:
5	Principal place of business:
6	Constitution or legal status of Bidder:
7	Authorization letter (in case of dealer)
8	Power of attorney of signatory
9	Vendor's Bank account no with IFSC code, PAN and GST
10	Valid Trade License
11	IT, Professional tax, Sales Tax clearance certificate, last three years
12	GST certificate must be provided (if not received yet then GST number must be provided in official letterhead)
13	ISO 9001:2008 for quoted item or any other international certification if any for the quoted item
14	Proprietary certificate if any
15	Earnest Money Deposit (Demand draft)/NSIC/EMD Exemption certificate in case of exemption (Name of the item quoted and expiry date of NSIC/EMD Exemption certificate must be mentioned)
16	Bidder Quotation Number and Date
17	Model number, Catalogue, Manufacturer certificates and authorization certificates from the OEMs.
18	Bidder Quotation number and date
19	GST number and percentage must be mentioned for the quoted item.
20	The certificate stating the address where the order has to be placed. If any special license/paper/clause is required please mention here.

Dean (R &C)

(A. Code DRC-T053/18-19)


 19.12.18
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3. TECHNICAL SPECIFICATIONS:

One Set: XRD with small angle and thin film attachment.

Quantity - 1 Set

The modifications are marked in red.

Technical Spec for XRD with small angle and thin film attachment

Offers are invited from the reputed vendor for the procurement of X-ray Diffractometer for the applications required for Powder phase identification, SAXS and Thin Film study. Vendors might choose to quote configuration to suit all the above applications, with minimum alignment to changeover from different configuration. Automatic and tool-free switching of the diffraction geometry without the need for complex adjustments.

DETAILED TECHNICAL SPECIFICATION:

Goniometer

Geometry	Plane of sample horizontal or adjustable
Min step size	0.0001°
Diameter	High Precision Goniometer with theta-theta configurations with a minimum diameter of 500 mm. Variable goniometer radius without major alignment procedure will be preferred for better resolution. Goniometer having Higher diameter will be preferred. Angle positioning: Stepper motors with optical encoders for optimum scanning speed and positioning precision.
Angular range	-10 to 160 degree or higher with transmission geometry
Operation mode	Theta - Theta or Theta - 2 Theta
Data quality guarantee	Manufacturer must submit data quality guarantee certificate from the factory on the angular position (≤ 0.01 deg 2theta over the entire angular range) to be carried out on NIST sample. The same NIST sample should be in the scope of supply for evaluation. The Manufacturer must provide Goniometer instrument alignment guarantee for 10 years with selected configurations.

X-Ray Generator

Power	3 KW or higher
Input voltage range	208 - 240 V
Frequency	50 Hz +/- 1%
Maximum high voltage	50 KV or better
Maximum current	60 mA or better
Voltage increment	1KV
Current increment	1mA
Stability for 10% input voltage variation	<0.005%
Cooling	With appropriate cooling unit

Safety

The XRD system must be fully radiation protected as per the international radiation safety norms. The offered XRD system must comply with the requirements of the Machinery Directive 2006/42/EC for European Manufacturer or equivalent norm for non European Manufacturer.

- The system must display an up-to-date CE marking, accompanied by a correct EC Declaration of Conformity as well as all required documentation.


19.12.18

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X-Ray Tube

Insulation	Ceramic
Anode material	Cu.
Maximum power	1.5 kW or better
Focus	Fine focus.

Minimum Three years warranty on the X-Ray Tube is required.

Optics:

Divergence Slit	Motorized slit system. Parabolic multilayer mirror.
Secondary Antiscatter slit	Motorized slit system if required. Soller collimator.
Fluorescence suppression	Suitable hardware/software for suppressing secondary fluorescence to be offered.

Detector

Vendor should offer a solid state fast detector with below specification:

Operation mode	0D & 1D mode should be possible.
Efficiency	>98% for Cr, Co, and Cu radiation
Active window	14 mm x 16 mm or larger
Spatial resolution (pitch):	75 micrometer or better
Capture angle	>2.5° 2Theta angular coverage at 500 mm measurement circle diameter
Maximum counts	Minimum 100,000,000 cps or better.
Energy resolution	<680 eV for Cu radiation at 25°C
Fluorescence suppression	Suitable hardware/software for suppressing secondary fluorescence to be offered.
Low Angle Data	Capable to collect high quality data starting at angles as low as 0.15° 2Theta.

Sample Stages

Sample stage	<p>Rotational sample stage to be offered along with minimum 5 or more numbers of sample holder.</p> <p>Automatic sample stage which should be included for alignment for z-axis, Phi-axis and Chi axis for reflectivity measurement.</p> <p>Transmission sample stage in option with proper sample cup to be offered for SAXS.</p> <p>Saxs unit for particle and pore size distribution of solid and liquid samples with suitable measuring range along with suitable software for particle and pore size (1nm to 100nm or more) analysis.</p>
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Software

PC based software packages to control all instrument parameters and should provide best algorithms for Solving analytical tasks. Should enable both Qualitative and Semi quantitative analysis. Easy simulation and automatic refinement / smoothening of measured data. Peak search, integrated intensity, K alpha1 and k alpha 2 separation. Remote Diagnostic facility should be available. **Rietveld analysis has to be provided.**

Search Match	Search match software to be offered.
SAXS	SAXS software in option.
Database	ICDD database PDF2 with 5 years license in option.

Computer & Printer: Suitable computer (with pre-loaded software) and printer must be offered.

UPS: **10KVA or above** UPS (or as per requirement) with 30min backup should be offered.

Spares: Commitments to supply spares for at least 10 years to be ensured. Separate Spare kits for the Diffractometer should be quoted as optional items.

INSTALLATION AND COMMISSIONING :

The instrument to be installed tested and commissioned by representative of supplier in India at premises to the satisfaction of user.

AFTER SALES SERVICE:

1. Product support for period of minimum five years after warranty period, to be ensured by vendor/supplier.
2. Relevant software/hardware information in case of updating of the model of the supplied system should be provided.
3. Minimum one-year warranty should be offered for the whole system. For X-Ray tube minimum three years and for Goniometer alignment minimum 10 years guarantee to be offered.

TRAINING :

The supplier should provide the training on the site of installation.

Vendor should take all necessary responsibility to quote for configuration to suit all the above applications.


19.12.18

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4. Terms and conditions:

- i. All rates quoted should be **inclusive** of all taxes, levies, duties, transportation, Packing, forwarding and Insurance Charges (if any). The rates should be quoted both in figures and words. **Request for inclusion of any tax/levy at later stage will not be entertained.**
- ii. **The Institute reserves the right to accept or reject all or any of the tenders without assigning any reason whatsoever. The decision of the Institute shall be final in case of any dispute.**
- iii. **The vendor must complete the work within 90 days from the date of receiving the order.**
- iv. **The Tender fee of Rupees One Thousand (Non-Refundable) must be submitted in a separate demand draft. The hard copy of the Demand draft must reach Office of the e-Procurement Cell, IEST Shibpur on or before last date of submission of tender.**
- v. The EMD of the successful vendor will be converted as performance security and to be refunded after satisfactory completion of the installation. **The hard copy of EMD (demand draft) should reach the e-Procurement Cell, IEST Shibpur on or before last date of submission of tender.**
- vi. Two separate Demand drafts must be submitted (One as a Tender fee and the other as an Earnest Money Deposit (EMD)). **In case of EMD Exemption certificate, only Tender Fee must be submitted.**
- vii. Materials & accessories used should be as per specification and of Approved Quality (B.I.S.) or by the authorized officer of I.I.E.S.T. Shibpur.
- viii. **The vendor should quote all the items (as per specification) considering as one complete set.**
- ix. **Missing of quotation(s) for one or many items from the set will not be considered and will be summarily rejected.**
- x. **Optional item(s) may be quoted separately. L1 will be decided on the basis of main items. (One set XRD with small angle and thin film attachments except the optional item SAXS)**
- xi. Bidder shall furnish an undertaking for providing Comprehensive onsite warranty minimum one year for the whole system from the date of supply/installation on their letterhead, failing which, their offer will not be considered. For X-ray tube minimum three years and for Goniometer alignment minimum ten years guaranty are also to be offered.
- xii. Bills, Challans in Triplicate & installation report should be presented for payment within 15days of supply/completion of work.
- xiii. The Order no. is to be noted on both challan and Bill.
- xiv. All bills are to be accompanied by order copies and challans as received.
- xv. Payment will be made within 60 days of Submission of proper bills; challans etc. by A/c payee cheque or NEFT, no cash payment will be made under any circumstances.
- xvi. Company's Bank account no. with IFSC code, Scanned copy of PAN Card, Certificate of VAT will be attached with e-Tender technical cover.
- xvii. All payments are subjected to statutory deductions as and when applicable.
- xviii. Scanned copy of the latest Income Tax, Sales Tax, Professional Tax clearance certificate, Trade License.
- xix. Bidder shall furnish a non-blacklisting affidavit on non-judicial stamp paper of Rs.10/- duly attested by the Notary that there is no vigilance/CBI case pending against the firm/supplier and the firm has not been blacklisted in the past by any government/Private institution.


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- xx. SELECTION WILL BE MADE PURELY ON ESSENTIAL TECHNICAL DOCUMENTS. The IESTS authority will evaluate and compare the quotations (the gross amount i.e. inclusive of all taxes, other charges etc.) determined to be substantially responsive i.e. which- (a) meet the qualification criteria specified in the tender, (b) Are properly signed, and (C) Conform to the terms and conditions, specifications without deviations.
- xxi. Only one best quality item (according to our specification) should be quoted against each item. On no account should different qualities e.g. A, B, & C of items be quoted. Those items that have been quoted as per different qualities (In contravention to the specifications) will not be considered at all and will be summarily rejected.
- xxii. Based on our specifications, image/drawing of item to be provided and Model Name/No. (if applicable) and Brand must be clearly mentioned in the quotation, without which quotation will not be considered.
- xxiii. In case of non-supply of material within the due date i.e. within the date of delivery, the Director, IEST Shibpur will have the right to impose penalty like forfeiture of performance security and removal of the name from the list of the vendor and resort to risk purchase in full or part thereof at his/her discretion, his/her decision shall be final and bind.
- xxiv. Original Manufacturer/firm must have manufacturing facility certified by ISO 9001:2008 for quoted item. Certificates to be scanned and uploaded with technical bid, without which their quotation will not be considered.

(Seal and signature of bidder)

Sd/-

S.N. Datta
Deputy Registrar
(Store & Purchase)
IEST, Shibpur

The Hard Copy of the EMD and/or Tender Fee must be submitted to the Office of the Procurement Cell before the Technical Opening Date Positively.	e-
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