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INDIAN INSTITUTE OF TECHNOLOGY DELHI
HAUZ KHAS, NEW DELHI-110016 (INDIA)

DATE: 19th Sep., 2011

DUE DATE: 7th October, 2011

NOTICE INVITING QUOTATION

REFERENCE NO. IITD/PHYS/NRF/2011/XRD

Sir/Madam,

Please send your quotation in a sealed cover superscribed with our Reference No. & due date for the following article/s.

X-Ray Diffraction System for Thin Films and Powder Samples

The system will be used to study a broad range of materials in the form of thin films, powders, nano-powders, multilayered coatings etc. The system should be capable of performing standard wide angle X-ray diffraction for both powder and thin films and X-ray reflectivity measurements.

The basic system should have a modular design and provision for future upgradation. It should be operable at 220 V/ 50 Hz. The desired specifications of the system are as follows:

(1) X-Ray Diffraction (XRD) System Specifications:

- X-ray Generator: Maximum Rated fixed sealed output: 3kW
Rated Tube Voltage: 20-60 kV
Target: Cu (others optional)
Focus Size: 1×10mm (others optional)
- Detector: Scintillation Counter (others optional) – detector model to be specified
- XRD system must include fully computer-controlled alignment of the entire system including sample stage, goniometer and x-ray source optics to transition between components that enable powder and thin film diffraction.
- The system must include a diffracted beam monochromator providing both Bragg-Brentano (focused) and parallel beam optics with no requirement to remove the monochromator from, or realign, the diffractometer. The system must be able to recognize all optics, determine the optical configuration and automatically align the optical system.
- Automatic slit for keeping the area of illumination same from low angle to high angle
- The system must include a high-precision, vertical theta/theta, theta/2 theta and theta fixed/2 theta movement (horizontal sample geometry), fully automated, optical encoder controlled goniometer with measuring range between -3 to 160 degrees (2theta) and step resolution of at least 0.0001 degree (in both source and detector axes). Goniometer must include sample attachment stage for powder and bulk sample holders and associated sensing recognition electronics.
- High precision motor driven sample stage for z-axis sample alignment with range of -10 to 1 mm at a resolution at least 0.0005 mm/step.
- Fully automated thin film sample alignment is required to accommodate samples at least 100 mm in diameter and at least 5 mm thick.
- The XRD system must include computer, control hardware, and Windows based software for operation in the modes described above. The control system shall also contain necessary interlocks and trouble signals for safe operation of the tool.

- The system must include powder diffraction and general XRD data analysis software. The system must include computer and software supporting XRR analysis and modeling (film thickness, density, and roughness).

Following should also be a part of technical specifications:

- Vendor will supply free of cost a set of spares and consumables needed for at least five years of operation.
- Vendor will provide free software upgrade for five years.
- Vendor will provide complete set of service and maintenance manuals including lay out diagrams for the electronic boards and mechanical components for each of the above items.
- Vendor will arrange for an on-site training
- Vendor should specify: Space needed for the entire set-up, electrical specifications, room temperature and permissible humidity limits. The vendor should also give specifications of an Online Uninterrupted Power Supply (preferably three phase) along with distribution of load on each phase.
- Vendor will attach a list of addresses of organizations where the equipment is supplied.
- Vendor will attach a Sole Agency-ship certificate on the letterhead of the principal company, if quotation is from an Indian agent.
- Vendor to specify comprehensive warranty period, maintenance procedure and after sales service.
- Vendor will provide information regarding Delivery time and Installation & Training.

TERMS & CONDITIONS COVERING SUBMISSION OF QUOTATIONS

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| 1. DELIVERY: | The rates quoted must be for C.I.F. Delhi (Air Freight) |
| 2. TERMS OF PAYMENT: | Letter of credit |
| 3. INSTITUTE'S RIGHTS : | IIT Delhi reserves the rights of acceptance or rejection of any or all quotations. The discretion for increasing or decreasing of the quantities demanded also vests with him. |
| 4. VALIDITY OF QUOTATIONS: | Quotations should be valid at least for a period of 3 months. |
| 5. CORRESPONDENCE: | No correspondence regarding acceptance/rejection of a quotation will be entertained. |
| 6. SUBMISSION OF QUOTATIONS: | Quotations should be sent in a sealed cover marked at the top OUR N.I.Q. REFERENCE AND DUE DATE as otherwise these will not be considered. The technical and financial bids should be sealed in separate envelopes before putting them together in the sealed cover. Quotations should be sent to: Prof. Ratnamala Chatterjee, Department of Physics IIT Delhi, Hauz Khas, New Delhi 110 016 (India). |
| 7. REJECTION: | Quotation not conforming to the set procedure as above will be rejected. |
| 8. DISCOUNT/REBATES: | Special discount/rebate wherever admissible keeping in view that the supplies are being made for educational purpose in respect of public institution of national importance may please be indicated. |