



**SPONSORED RESEARCH, INDUSTRIAL CONSULTANCY & CONTINUING
EDUCATION CELL
NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA – 769 008, ODISHA**

Advertised Tender Enquiry

Department: Chemistry

Tender Notice No: NITR/PW/CY/2018/83

Date: 16/11/2018

Through,

Important Dates

CPP Portal

(E-procurement)

Event	Date	Time
Pre-bid Conference	NA	NA
Last Date of submission of Bid	14/12/2018	03:00 PM
Date of opening of Technical Bid	17/12/2018	11:00 AM

Dear Sir,

We intend to purchase the commodities specified below and invite quotations in accordance with the terms and conditions detailed in the bid document. The interested bidder may kindly send their bids with prices and complete terms within the time mentioned above.

For any technical Query contact:

**ATTENTION:- Dr. S. Chatterjee
Department of Chemistry
NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA – 769 008, ODISHA
Phone: 0661 – 2462656
Mobile No. +91 9938485254**

Yours sincerely,

Name: Dr.S. Chatterjee
Department of Chemistry

Encl:

- 1. Schedule of requirement, specifications, dates etc.**
- 2. Bid document containing detail terms and conditions.**

1. Schedule of requirements

Sl.No.	Description of Goods/Service	Quantity
01.	Micro focus Single crystal X-ray Diffractometer with accessories (Detailed specification as per attached Annexure – I)	01 unit

2. Specifications and allied Technical Details

Details mentioned in Annexure –I
GST and any other taxes should be clearly mentioned in the BOQ

3. Format of Quotation (tick appropriate box)

It is a single bid; please give all technical specifications and price bid in one go.

OR

It is a three-part bid with separate Part-I: EMD & Tender Cost, Part-II: technical bid and Part-III: price bid. Please see e-Procurement site (<https://eprocure.gov.in/eprocure/app>) for instructions for the method of bidding

4. The bid should be submitted through <https://eprocure.gov.in/eprocure/app>
5. Quotations should be valid for a period of **90 days** from the closing date of the bid.

6. Some important dates:

i.	Pre-bid Conference:	Date: NA	Time: NA
ii.	Last date of submission of bid	Date: 14/12/2018	Time: 03:00 PM
iii.	Opening of technical bid	Date: 17/12/2018	Time: 11:00 AM

7. **Warranty** : Minimum 3 years comprehensive warranty and 3 years AMC after completion of warranty period
8. **Technical Evaluation Criteria:** As per the detail equipment technical specifications given in Annexure –I. If required, the bidder may be asked to provide clarification regarding the technical aspects.
9. The comparison will be made for award of contract on the overall price basis.
10. **GST:** GST may be charged according to applicable rates.
11. **Bid Security and Tender Cost:** Bid Security in shape of Bank Guarantee/DD (Demand Draft) for INR 5,00,000/- (Rupees Five Lakh Only) and Tender Cost (Non refundable) in the form of DD for INR 1,000/- (Rupees One Thousand Only) in favor of Director, NIT Rourkela Payable at Rourkela from any Scheduled Commercial Bank except Co-operative and Gramin bank. And Bank Guarantee/DD for the Bid-Security should remain valid for a period of 45 days beyond the bid validity period from the date of opening of bids. Bid security of unsuccessful bidders should be returned to them at the earliest and latest on or before the 30th days after the award of the contract. EMD (Earnest Money deposit) and Tender Cost should reach physically through speed post/

register post/courier, containing in an envelope & superscripted with subject, tender reference number addressing to **Registrar, NIT Rourkela- 769008, Odisha**; Attention: HOD(CY) **on or before 17/12/2018 at 11:00 AM**

12. **Price Bid:** The financial bid indicating (item-wise) price for the item(s) mentioned in the technical bid should be submitted in provided BOQ(in Microsoft Excel Format) only .
13. **Performance Security:** : R s. 9, 50,000/- (Rupees Nine Lakh Fifty Thousand Only) in shape of Bank Guarantee/Demand Draft (DD) in favor of Director, NIT Rourkela payable at Rourkela from any Scheduled Commercial Bank except Co-operative and Gramin bank. And performance security should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the supplier including warranty obligation. And EMD (Earnest Money deposit) amount of successful bidder will be returned after the receipt of performance security in case of award of contract to successful bidder.
14. Please go through the enclosed "bid document" carefully for other bidding instructions. Please send your quotations through <https://eprocure.gov.in/eprocure/app>
15. For technical details, you may contact

Dr. S. Chatterjee Department of Chemistry., National Institute of Technology, Rourkela – 769 008 Phone: 0661 – 2462656, Fax: 0661 – 2462999 E-mail: saurav@nitrkl.ac.in
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NB: *Please furnish your Dealership Certificate (must) and Proprietary Nature Certificate (If applicable)*



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BID DOCUMENT

1. Instructions to the bidders

- 1.1 Bids are invited on behalf of the Director, National Institute of Technology (NIT), Rourkela – 769 008, Odisha, from the intending bidders for supply of the goods/stores/ equipments for the Institute as detailed in the enquiry letter.
- 1.2 The bidders should quote their offer/rates in **BOQ** in clear terms without ambiguity.
- 1.3 In case of any discrepancy between the rates in figures and that in words, the rate in words will be accepted as correct.
- 1.4 The last date for receipt of the bid is marked in the enquiry.
- 1.5 The bids should be uploaded in e-Procurement module available in Central Public Procurement Portal only (<https://eprocure.gov.in/eprocure/app>). Please follow the guidelines of the site.
- 1.6 If a prospective bidder requires any clarification in regard to the bidding documents, he may make a request the concerned officer or faculty member at least 15 days before the deadline for receipt of bids.
- 1.7 Bids received after the deadline of receipt indicated in para 1.4 above, shall not be taken in to consideration.
- 1.8 Each bidder shall submit only one bid. A bidder, who submits more than one bid, shall be disqualified and considered non-responsive.
- 1.9 (In respect of high value plant, machinery etc. of a complex and technical nature). The bids may be submitted in two parts, viz., technical bid and financial bid.
- 1.10 The bidder has to sign in full at all pages of the scanned part of the bidding document. No over-writing in those pages is acceptable.
- 1.11 If any bidder does not fulfill technical specification, his/her eligibility will be cancelled even if his/her price got L1 status.

2. Conditions of the bid

- 2.1 The rates quoted should preferably be net, inclusive of packing, forwarding, freight, Insurance and all other incidental charges excluding taxes. In case these charges are quoted extra in addition to the quoted rates, the amount thereof or Ad Valorem rate must be specified. Packing, forwarding, freight, entry tax etc., when quotes separately are reimbursable at actual. If external agencies are employed, their receipts must be enclosed with the invoice.
- 2.2 Duties and Taxes are to be quoted separately. Ad Valorem rates thereof should be clearly indicated with reference to the relevant Acts and Rules.

It may be noted that the Institute is exempt from paying Excise Duty vide Government Notification No. 10/97 dated 01.03.1997 [Registration No.: TU/V/RG-CD (227)/2011, dated 10.10.2011. GST may be charged at applicable rates.

- 2.3 The goods are required to be delivered at the indenting Department of NIT, Rourkela, and must be **reached within 60 days** from the date of placement of the supply of order under the risk and arrangement of the bidder and offers with delivery beyond the above period shall be treated as unresponsive. In case the delivery time is higher, the same must be mentioned clearly in the quotation.
- 2.4 The bid should remain valid for a period of **90 days** from the date of opening. In case your offer has a different validity period that should be clearly mentioned in the quotation.
- 2.5 Conditional discount, if any, offered by the bidder shall not be considered at the time of evaluation.
- 2.6 The goods offered should strictly conform to the specification and technical details mentioned in **Annexure - I**.
- 2.7 The Institute may like to conduct pre-dispatch inspection of goods, where applicable.
- 2.8 Period of guarantee/warranty, where applicable, should be specified in the bid.
- 2.9 If the successful bidder, on receipt of the supply order, fails to execute the order within the stipulated period, in full or part, it will be open to the Director, NIT, Rourkela to recover liquidated damage from the firm at the rate of 1 percent of the value of undelivered goods per month or part thereof, subject to a maximum of 5 percent of the value of undelivered goods. Alternatively, it will also be opened to the Director, to arrange procurement of the required goods from any other source at the risk and expenses of the bidder.
- 2.10 The successful bidder may be required to execute a contract, where applicable.
- 2.11 The bidder has to furnish up to date GST and Income Tax Clearance Certificate along with the bid.
- 2.12 Payment (100 percent) will be made by Account Payee Cheque/Bank Draft and in case of foreign payment through LC, within 30 days from the date of receipt of the goods in good condition or receipt of the bill, commissioning of the equipment, where applicable, whichever is later/latest.
- 2.13 In the event of any dispute arising out of the bid or from the resultant contract, the decision of the Director, NIT, Rourkela shall be final.
- 2.14 The bid document/resultant contract will be interpreted under Indian Laws.

Technical specification of Single Crystal X-Ray Diffractometer System:

The single crystal X-ray diffractometer required for accurate determination of molecular structures of organic, inorganic, organometallic, MOF and metal clusters single crystal samples with X-ray generator (Micro-focus), state of the art Area detector, goniometer with other accessories and peripherals required to fully integrate the system facilitating international publishing data quality with all hardware and software starting from mounting of crystal to crystallographic information file generation. The equipment should offer flexibility to study extremely small and/or weakly diffracting crystals. The details of the technical requirements and specifications of the system are given below.

Sl. No.	Technical Specification for a Micro-focus Single Crystal XRD system
1.	Floor mounted system for dedicated use in a laboratory with upgradeability features. Fully X-ray protected enclosure as per international safety norms with X-ray safe heavy duty main shutter. The X-ray diffractometer system should overall be air-cooled without any need for external chillers.
2.	<p>X-ray Source:</p> <p>The system should be equipped with a single Mo k alpha micro-focus source with integrated cooling technology without any external chiller. The X-ray source should be highly stable with graded multi-layer double bounce focusing optics for augmentation of beam intensity with computer controlled technology and the power output in the range of 50 W or more and the beam diameter at the crystal should be optimum through use of suitable pinholes / collimators.</p> <p>The X-ray generator must be in-house designed and manufactured by the SCXRD manufacturer and should be repairable on component level at site. Maintenance: Any repair work or replacement of spares needs to be done on site, the manufacturer of the XRD must confirm this in their quotation. To minimize down-time the entire source shall maintain a minimum of 80% of the specified intensity for at least 3 years after installation. As a major part of the system vendor should provide a three-year warranty on the micro focus source covering the generator, HV-cable, tube shield, X-ray tube and the optics.</p>
3.	<p>X-ray detector and Optics:</p> <p>The system should feature fully electronic state of the art detector with Hybrid Pixel Array detector (HPAD) or Charge-integrating Pixel Array Detector (CPAD) or HPC/MMPAD or any other advance or upgraded detector with directly converting X-Ray signals to photons without losing any information (direct X-ray photon counting technology) preferably with no dead areas for detecting the diffracted X-rays and accurately measuring their intensities of diffraction pattern from single crystal. Active area of the detector: 28 cm² or higher.</p> <p>The detector should have high signal to noise ratio with virtually noise free readout electronics and should be capable of shutter-less operation, with auto air cooled facility. Preferably, the detector shall not require regular maintenance and feature low power sensors. The dynamic range of the detector should be very high to be able to capture very weak as well as very strong reflections on a single frame.</p> <p>Ideally the X-ray detector has to avoid losses due to fiber-optic stubs / tapers in its construction and should have enhanced spatial resolution of the diffracted signal. In case of setup with a glass fiber optical taper is offered, the magnification ratio of the applied taper should be stated and loss of intensity due to taper must be specified.</p> <p>The Detector must have warranty of 5 years irrespective of the system warranty.</p>
4.	<p>Goniometer:</p> <p>The instrument should include a fully automated high precision 4-circle kappa goniometer with all axes and detector distance controlled through the system computer.</p> <p>The goniometer shall be equipped with stepper motors with optical encoders for optimum scanning speed and positioning precision. For best data quality the reproducibility of the omega and 2theta axes should be at least 0.0002 degrees, preferably certified/guaranteed; Goniometer speed shall be</p>

	adjustable between 0 and 1200 degrees/min or better to ensure highest precision and minimized overhead time, with sphere of confusion less than seven micron. Detector movement should be motorized and the sample to the detector distance should be variable over a range of at least 40 – 145 mm or higher.
5.	<p>Application Software: The software suite provided with the system shall consist of a complete suite of well tested and user proven routines for the collection and integration of frame data on single crystals, and for solving, refining, and displaying single crystal structures. The software package should comprise of a user friendly interface with extensive graphical feedback, on-line help and shall be available for high power personal computers (PC) running Windows7™ or Linux.</p> <p>Software shall allow remote access to the instrument including diffractometer, goniometer, and X-ray generator functions to setup the experiment, view data as collected, process the data, and solve and refine the structures remotely or off-line. Software for Auto Structure Solution, Twin Solve and Powder Data Collection and Analysis should be included with atleast two licenses or more.</p> <p>No public domain software is acceptable. Manufacturer must offer their latest version of licensed software developed by them. There must be an undertaking that updates to the instrument control/data collection and automated structure solution and refinement software will be provided as available free of charge and in perpetuity. The offered data acquisition software package must be compatible with SHELX and WINGX</p>
6.	<p>Computer and Printer: Compatible PC for the Instrument has to be offered directly from the Manufacturer. Minimum configuration: 8 GB DDR RAM, Graphics Card, 24" Full HD (1920 x 1080 High resolution) monitor, 10/100 Fast Ethernet Controller, Keyboard and optical scroll mouse, Windows 7 , or higher version, 64 bit compatible, RW DVD drive, 2 TB HD</p> <p><u>Note: The PC must come from Manufacturer site with factory loaded Software.</u> Two additional PCs with suitable configuration for data analysis should be offered. The vendor must offer a color laser jet printer</p>
7.	<p>Temperature Control Unit: Temperature attachment working from 90 K to 400K range or better range with a stability of +/-0.5 K or better over the whole temperature range should be quoted. Low temperature attachment should be with very low liquid N2 consumption, no icing effect, equipped with a liquid N2 Dewar of minimum 60 liters capacity or more. The required pressure regulators, valves, transfer line, line heater and other necessary accessories should be quoted. Auto transfer facility for the Dewars should be quoted. The sample temperature should be set and varied in a stepwise fashion by the instrument control software to allow for easily creating variable temperature measurements. Additionally, an Imported Auto -Pressurized Dewar of 150L capacity or more has to be provided.</p>
8.	<p>Video microscope & Illumination: The system must include a color video microscope (inside the Instrument Cabinet) which records color images of the crystal mounted on the goniometer platform to assist alignment, monitoring, to capture screen frames of the sample, and to measure and index crystal faces, and face-absorption corrections. For numerical absorption correction the software should allow the indexing of crystal faces by interactive use of video pictures or movies of the crystal investigated</p>
9.	<p>Warranty: The system should be provided with a 3 years comprehensive warranty and 3 years AMC after completion of warranty period and necessary spares kit including 1 Additional Goniometer Head and 1 additional Test Crystal have to be offered.</p>
10.	<p>Power Back-up: Compatible online UPS with minimum one hour back up has to be quoted (locally)</p>
11.	<p>Additional X-Ray Source: Vendor is requested to quote one additional Mo microfocus X-ray source.</p>

12.	Crystal mounting accessories: Capillaries and Cryo loops. Capillaries made of special glass with wall thickness of 0.01 mm and outer diameter of 0.2 mm, 0.3 mm, 0.5mm - 100 pcs. of each type and other necessary capillaries / accessories and Cryo-loops: 500 cryo-loops for cryo-mounting (all sizes).
13.	ICSD: Single user latest Inorganic Crystal Structure Database (ICSD) with three years license have to be offered
14.	Microscope: Polarising Optical Microscope (Make: OLYMPUS/LEICA or equivalent) with minimum following specification: Upright type with universal infinity corrected optical system with LED Light Source., Y – Shaped, providing wider work surface. Intensity control, LED light preset switch must be frame mounted. Coaxial coarse and fine focus controls with one fine focus extension knob. Z axis locking mechanism and tension adjustment lever has to be incorporated. Conoscopic & Orthoscopic. Bertrand lens – Separately focusable with 3.4mm field stop. Parfocal, Plan semi apochromat Polarising objectives 4X/0.10, W.D. 18mm, 10X/0.25, W.D. 6.0mm, 20X/0.40, W.D 3.0, 40X/0.65, W.D. 0.45mm, 100X/1.25, W.D. 0.13mm (spring oil). Polarization accessories (rotation stage, transmitted-light illumination, polarizer, analyzer), Wide field eyepieces 10x (F.N.22) with cross lines.
15.	Service facility in India: Supplier should clearly demonstrate the service set up in India for prompt service support along with number of service engineers specially trained on the offered system. The service must be very prompt in case of any problem regarding the SCXRD.
16.	Installation and Training: Installation and demonstration at site with operational training for a period of one week. Additionally, one week dedicated application training by application specialist from the manufacturer facility has to be provided. One technically trained person is required continuously for one year for operating the instrument.
17.	Air Condition: Two 1.5 TON Split AC including installation has to be quoted (locally).
18.	Installation in India: Detailed lists of Indian users for SCXRD system.

The bidders may be asked to deliver presentation and provide clarifications regarding technical aspects during the technical bid opening session. They must come prepared.

A proper and detailed description regarding the quoted detector material and technology along with all other technical specifications must be provided in the technical bid.

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