NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA-769008, ORISSA

ADVERTISED TENDER

Department: **Central Instrument Facility (CIF)**

NOTICE NO.: NITR/PW/CY/2018/31 **Date: 31/05/2018**

Through

CPP Portal

(e-procurement)

IMPORTANT DATES

Event	Date	Time
Pre-bid conference	NA	NA
Last Date of Submission of Bid	**28.06.2018**	**11:00 AM**
Opening date of Technical Bid	**29.06.2018**	**11:00 AM**

Dear Sir,

We intended to purchase the commodities specified below and invite qualifications in accordance with items and condition details overleaf. The interested bidder may kindly send their bids with complete terms within the time mentioned above.

Please send your quotation as per Tender document. For any technical Query contact to:

Dr. Debayan Sarkar,
Associate Professor
Department of Chemistry,
NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA – 769 008, ORISSA
Mobile No. 7735588382
FAX No.0661-2462022

Yours Sincerely,

Name: Dr. Debayan Sarkar
Department of Chemistry

Encl:

(1) Schedule of requirement, specifications, dates etc.

(2) Bid document containing details terms and conditions

1. Schedule of requirements

Sl. No.	Description of Goods/Service	Quantity
1	**High Resolution Mass Spectrometry (HRMS) System**	1

2. Specifications and allied Technical Details

Details mentioned in **Annexure-1**
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 envelope.~~

OR

☑ It is a three-part bid with separate EMD, techno-commercial and price bids. Please see e-Procurement site (https://eprocure.gov.in/eprocure/app) for instructions for method of bidding.

4. The bid documents should be super-scribed with

Bid for **High Resolution Mass Spectrometry (HRMS) System**
Tender Notice No. **NITR/PW/CY/2018/31** **Date: 31/05/2018**

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:	**NA**	**NA**
ii.	Last date for submission of Bid:	**Date: 28/06/2018**	**Time: 11:00 AM**
iii.	Opening of Technical bid:	**Date: 29/06/2018**	**Time: 11:00 AM**

7. **Warranty** of Comprehensive **5 years minimum** from the day of functional installation Including nitrogen generator, UPS and battery along with all the consumable parts of the LC and HRMS system.

8 **GST:** GST may be charge according to applicable rates.

9. Bid Security and Tender Cost: Bid Security in shape of **Bank Guarantee/DD** (Demand Draft) for **INR 3, 40,000/- (Rupees Three Lakh Forty Thousand 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 return 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 28/06/2018 at 11:00 AM.**

10. 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 .

11. Performance Security: Rs. 8, 50,000/- (Rupees Eight 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 return after the receipt of performance security in case of award of contract to successful bidder.

12. (a) Please go through the enclosed "bid document" carefully for other bidding instructions.

(b) Please send your bid only through: https://eprocure.gov.in/eprocure/app to:

Registrar,
National Institute of Technology,
Rourkela– 769 008, ORISSA

13. For technical details, you may contact

Dr. Debayan Sarkar,
Associate Professor
Department of Chemistry,
National Institute of Technology, Rourkela– 769 008, ORISSA
Mobile No. 7735588382, 0661-2462667
FAX No.0661-2462022
E-mail: sarkard@nitrkl.ac.in

NB: Please furnish your Dealership Certificate (must) and Proprietary Nature Certificate (If applicable)

NATIONAL INSTITUTE OF TECHNOLOGY
ROURKELA – 769 008, ORISSA

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, Orissa, from the intending bidders for supply of the goods/stores/ equipment 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 tender documents

1.5 The bids should be uploaded in 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, s/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 are acceptable.

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. In case these charges are quoted extra in addition to the quoted rates, the amount thereof or advolerum rate must be specified. Packing, forwarding, freight, etc., when quotes separately are reimbursable at actuals. If external agencies are employed, their receipts must be enclosed with the invoice.

2.2 Duties and Taxes are to be quoted separately. Advolerum 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 10.11.2011]. 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 **dispatched 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 as mentioned in **Schedule of requirements of the tender document**

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.

ANNEXURE 1

HIGH RESOLUTION MASS SPECTROMETRY (HRMS) SYSTEM

	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 envelope as already detailed above. It should be clearly mentioned on the envelope as "Technical Specification for High Resolution for High Resolution Mass Spectrometer (HRMS) System. Technical Specification for High Resolution Mass Spectrometer (HRMS) system: Technical Specification for Quadrupole with Time of Flight / Quadrupole with Time of Flight Equivalent Technology as High Resolution Mass Spectrometer HRMS system with facility to connect Fast Liquid Chromatography system using lesser than 2 µm particle size columns for high sensitivity for both qualitative and quantitative analysis. A Bidder must be a single manufacturer & shall be responsible for the main instrument and all the accessories supplied with the system.	**01 unit**
1.	Ionization Source : • The instrument must be equipped only with One Universal Ion Source for Ionization capable of ionizing all types of Polar & Non-Polar compounds & technologically must be a combination of ESI/APCI/APPI sources as one & only Single Source. It must be capable of handling flow rates upto 2 ml/min. The working principle of the Universal Source must be a combination of all the sources like ESI/APCI/APPI & should also produce results like the same so that with only this one Universal source it must be capable of doing all kinds of sample including powder samples. There should be no manual intervention required for changing the source of the MS. Sample introduction must be possible either directly or combined with suitable liquid chromatographic system automatically through integrated fluidics. For Direct infusion no external syringe pump or accessories should be there. It	

must be integrated internally with the latest fluidics.

- The Universal Source which technologically must be a combination of all the sources (ESI/APCI/APPI) must operate along with reference spray to facilitate automated accurate mass measurements within single LCMS experiment. The instrument should be capable of internal reference mass correction for MS and MS/MS operation without losing sensitivity. The ionization must be done both in a positive & negative modes. All this must happen in one single run.

- An atmospheric pressure solids analysis probe (ASAP) for the direct sampling and introduction of solids and liquids should be available as an additional source.

- The desolvation temperature must be more than 600 degree C, which should be programmable and used in all the different probe usages like ESI, APCI, APPI and ASAP. The desolvation temperature setting should be capable enough to take care of flow rates to 2ml/min from the UHPLC

- The ion source must be of dual orthogonal design. The cleaning of the source should be done without venting the system and facility to Vacuum Interlock should be provided.

Ion Optics :

- Latest ion optics must be available which should maximise sensi whilst maintaining system robustness.

Desolvation Temperature

- The Desolvation Temparature must be more than or equal to 60 must be compatible with the One & only Universal source capab ionization for all types of compounds

Quadrupole :

- Instrument should have Quadrupole for isolation followed by collision cell and appropriate assembly required for high resolution mass data. An isolation valve/suitable device must be available to allow the source elements to be removed and cleaned without breaking instrument vacuum, maximizing instrument uptime. The routine maintenance should be tool free and user friendly.

- The instrument should be equipped with a latest quadrupole collision cell for superior ion transmission characteristics leading to enhanced resolution and sensitivity. Specific design must be shared or submitted which must show the same.

- Precursor ion selection should be done using Quadrupole.

- Mass Range: The instrument must have a high mass filter (quad for efficient transmission of ions having mass range at least ≤ 25 30,000 m/z or higher in resolving mode & ≤ 25 to >90,000 m/z i resolving mode or better for QTOF Technology. With Quadrupo Equivalent TOF Technology the Mass Range must be 6000 m/z o higher.

Time of Flight (TOF) or Equivalent Technology :

- Analyzer: Geometry with quadrupole as Q1 followed by TOF/Equivalent with a collision cell in between should be present.
- The mass range of the Time of Flight analyzer must be at least ≤ 25 to >90,000 m/z.
- The TOF/ Equivalent mass analyzer must have linearity of response of minimum 4 orders or better of magnitude whilst maintaining specified resolution for quantitation purposes.

Resolution :

- The resolution of the TOF mass analyzer must be more than 40,000 FWHM or better below m/z 1000 and more than 35,000 FWHM or better of around 200 m/z.
  (Proof of Statement must be provided).

In case of Equivalent Technology other than TOF, the resolution of the mass analyzer must be more than 2, 40,000 FWHM or better at around 200 m/z.

- Data acquisition rate must be 30 Spectra per second or better in MS and MS/MS mode *&* for TOF Equivalent Technology mass analyzer of minimum 40 Hz or better.
  (Proof of Statement must be provided)

Mass Accuracy & Sensitivity :

- The mass accuracy of the system should be a minimum of less than 0.5 ppm, with both internal & external calibration standards for both MS & MS/MS modes on 10 consecutive repeat measurements on column analysis.

- The instrument must be sensitive enough for detecting sub ppb/fematomole levels of compounds. The sensitivity achieved in MS/MS modes must be stated. The signal to noise (S/N) ratios or counts per second must be specified along with the full analyses conditions.

- Sensitivity**:** Full MS/MS mode ≤ 10 femtogram or better on column, at S/N ratio ≥ 600:1 *(Proof of statement must be provided for S/N ratio)*

Scan modes & Capability :

- The instrument must be able to operate in MS, MS/MS product ion scanning, simultaneous MS and MS/MS scanning, UHPLC/Fast DDA Scan, TOF MRM, Precursor Ion Scan, Neutral loss/gain scan. The software should be capable of data acquisitions whereby high and low collision energy data is acquired simultaneously to provide fragmentation data for all detectable molecular ions and TOF-MRM/Equivalent.

Vacuum System :

- A high efficiency vacuum system with turbo molecular pumps followed by rotary mechanical pumps must be provided.

Softwares :

- The software should have capabilities to perform the following functions:

Automated mass calibration, resolution, sensitivity check should be performed by software. Software tools for addressing Screening, Component Identification & Structural Elucidation workflows. The data processing software must incorporate an elemental composition calculator as standard. Included into the calculator must be algorithms for isotope pattern modeling that allow data interpretation of actual isotope patterns. A goodness of fit from actual to theoretical isotopes must be included. The ability to filter out incorrect elemental composition calculations through the use of intelligent spectral interpretation algorithms must be incorporated. Software should give elemental formula with mass accuracy or ppm error and isotopic fit value.

Computer & Workstation :

A Workstation should be provided for controlling the mass spectrometer, the LC and the auto-sampler with data acquisition & for data processing and analysis with following specification:

- Memory: 64 GB (8 X 8GB) DDR4 2133Ghz or better
- Hard disk: 10 TB or better
- CPU: Dual-Processor E5-2637 v3 Processor (3,5GHz 4c); Operating system: Windows 7/10 64 - bit or better.
- 21 inch LCD monitor.
- 1 Laser jet printer.
- All hardware and software including drivers, monitor, device interfaces cards/network must be preinstalled and preconfigured on the computer provided.

Nitrogen Generator :

- A noise free Nitrogen Gas Generator with in-built compressor along with other Gas cylinder should be provided to operate

	the system. The Maximum gas output pressure must be 100 psi. The Maximum outlet Flow Rate must be 32 L/min. UPS : • A suitable online UPS of 10 KVA capacity with at least 60 mins back up for the complete system should be provided. Fast UHPLC System: A liquid chromatography system as an inlet to the Mass spectrometer with following specifications: Pump : Quaternary operating pump(s) with an operating pressure of minimum 15000 psi or better. Flow Rate : • The flow rate range should be 0.010 to 2.000 mL/min, in 0.001 mL increments. Degasser : • The instrument should have in-built Vacuum degasser facility with minimum four lines and should be efficient to remove dissolved air online. System Delay Volume : • System Delay Volume should be less than < 400ul, independent of system backpressure & with standard mixer for higher sensitivity. Auto sampler : • Auto sampler should be available with a capacity of approx. 100 vials or more of 1.5 ml or better capacity & sufficient no. of spare sample vials must be provided. The autos ampler should have cooling facility upto 10 degrees or better and heating upto 40 degrees or better. • Programmable injection volume from 0.5 ul to 20 ul or better must be available. • The carryover of the auto sampler must be less than 0.005% or better. • Compressibility Compensation should be Automatic & Continuous.	

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