

NOTICE INVITING TENDER

**INDIAN INSTITUTE OF TECHNOLOGY
(INDIAN SCHOOL OF MINES), DHANBAD**



**Notice Inviting Tender (NIT) in Two-Bid System for
Supply and Installation of “Mass spectrometers along with
data acquisition, retrieval and analysis system”**

Tender No.: IIT(ISM)/Chemical/PRJ/055/2019-20

Date: 26 June 2019

Bid Submission deadline: 23.07.2019 , 1:00 P.M.

ASSISTANT REGISTRAR

Indian Institute of Technology (Indian School of Mines), Dhanbad

P.O. – Indian School of Mines (I.S.M.)

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दिनांक/ Date: 26 June 2019

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CHAPTER 1 Instructions to Bidders

IIT (ISM), Dhanbad was formerly known as Indian School of Mines (ISM) and was a Deemed University before it got converted into an Institute of National Importance under the Institutes of Technology (Amendment) Act, 2016 passed by the Parliament of India and got the assent of President of India. The Indian School of Mines, now IIT (ISM), Dhanbad, was formally opened on 9th December 1926, by Lord Irwin, the then Viceroy of India to address the need for trained manpower related to mining activities in the country with disciplines of Mining and Applied Geology. In 1967, it was granted the status of a deemed to be university under Section 3 of UGC Act, 1956 and it was renamed as Indian Institute of Technology (Indian School of Mines) in 2016. It started as an institution to impart mining education, and today, has grown into a technical institution with various academic departments. IIT(ISM) is located in the mineral-rich region of India, in the city of Dhanbad in the state of Jharkhand. It is the third oldest institute [after IIT Roorkee and IIT (BHU) Varanasi] which got converted into an IIT.

IIT (ISM), Dhanbad intends to procure the equipment “**Supply and Installation of Mass spectrometers along with data acquisition, retrieval and analysis system**” to enrich its teaching and research facility at Dhanbad.

Reputed manufactures or authorized distributors are invited to submit their bid for “Integrated Gas Hydrate Raman Mapping System” for IIT (ISM), Dhanbad as per this tender document in a Two-Bid System: - (a) Techno-Commercial (also termed as technical bid) bid (Part-1) consisting of all technical details of the item along with commercial terms and conditions, Tender Fee and EMD and (b) Price bid (Part-2) indicating price for their items mentioned in the technical bid. All instructions and terms and conditions must be followed, failing which bid(s) will liable to be rejected.

INSTRUCTIONS

1. Offer should be submitted under TWO-BID system in two separate sealed covers i.e. “Techno-commercial bid” and “Price bid”.
2. Tender Number and tender submission deadline must be clearly mentioned on the top of the envelope.
3. a) In a tender, either the Indian agent on behalf of the principle/ OEM or the Principle/OEM itself can bid, but both cannot bid simultaneously for the same item/product in the same tender.
b) If an agent submit bid on behalf of the principle/ OEM, the same agent shall not submit a bid on behalf of another principle/ OEM in the same tender for the same item/product.
c) Indian agent/must submit authorization letter for submission of bid for this NIT from their OEM/Principle.
4. Bidder(s) must submit PAN given by Income Tax authorities, TIN, GSTIN and copy of PAN / TIN with the bid.

5. The offer must be submitted in **Two-Bid**. Tender should be dropped in the tender box kept in the office of **Assistant/Deputy Registrar (Purchase & Stores), IIT (ISM), Dhanbad– 826004 (Jharkhand, India)** only. Bids may be submitted by Speed Post / Courier in sealed cover only, but IIT(ISM), Dhanbad will not accept such bid if delivered/submitted to the office of the Deputy Registrar (Purchase & Stores section), IIT (ISM), Dhanbad after the submission deadline and such bids will be treated as Late bids / non-responsive bids. It will be the sole responsibility of the bidders that their bid should be submitted/ delivered as per bid submission deadline. IIT (ISM), Dhanbad will not be responsible for any delay or transit loss or late delivery of bids to the office of the Deputy Registrar. No tender is to be handed over to any staff of IIT (ISM), Dhanbad personally. All bids / correspondences should be sent to the following address only: “Deputy. Registrar (P&S), IIT (ISM), Dhanbad, P.O. – Indian School of Mines (ISM), DHANBAD – 826004 (Jharkhand, India)”. Bids sent through Email/Fax or submitted in unsealed cover(s) will not be accepted and such bids will be treated as non-responsive bids.
6. Bid(s) must be sent sufficiently in advance so that it reaches the institute on or before the submission deadline. Bid(s) received after the submission deadline will not be considered.
7. Bid document(s) and all enclosures must contain the signature and seal of the authorised representative of the bidder.
8. The bidder quoting for item(s) as per this tender should be the registered to provide the item/services with the appropriate government authority. Copy of registration certificate should be enclosed with the tenders (part-1). Offers submitted without proper registration certificate shall be rejected summarily.
9. The bidder quoting for item(s) as per this tender should be the registered to provide the item/services with the appropriate government authority. Copy of registration certificate should be enclosed with the tenders (part-1). Offers submitted without proper registration certificate shall be rejected summarily.
10. The Bank/RTGS detail on the letter-head of the bidder(s) must be submitted along with the tenders (part-1). A copy of the cancelled cheque should also be attached.
11. Name and PAN/Voter Card No. /Aadhar No. of the authorized signatory of the bidder(s) must be mentioned in the Form 7.2.
12. A copy of PAN/Voter Card/Aadhar Card of the authorized signatory of the bidder(s) must be attached with the Form 7.2

CHAPTER 2

Terms and Conditions

The offer must comprise of the following, failing which it will be treated as non-responsive bid hence will be rejected:

1. The bids under Two-Bid System will consist of two parts as per following details:- **a) Techno-Commercial bid (Part 1)** consisting of all technical details along with Commercial terms and conditions and Earnest Money Deposit (EMD) to be submitted in form of A/C payee demand draft drawn in favor of Registrar, IIT(ISM) and payable at SBI, IIT (ISM) campus branch or any other Bank/Branch located in Dhanbad and **b) Price bid (Part 2)** indicating price for the items / services mentioned in technical bid (part-1). In stage-one, only the Techno-Commercial (Part 1) shall be opened and evaluated. In stage-two, the Price bids (Part 2) of only the technically qualified and acceptable offers will be opened, for further evaluation.
2. Sealing and Marking of Bids:
 - a) The Techno-Commercial bid (Part 1) must be sealed in a separate envelope (ENVELOPE-ONE) with EMD in the form of two separate Demand Drafts, duly super-scribed as **“Techno-Commercial Bid (Part 1), Tender No.: IIT(ISM)/CHEMICAL/PRJ/055/2019-20, Submission Deadline: 23.07.2019”** as per following details: -
EMD: Rs. 1,30,000/- (Rs. One Lakh Thirty Thousand only).
 - b) The Price bid (Part 2) should be sealed in separate envelopes (ENVELOPE-TWO), duly super-scribed as **“Price Bid (Part 2), Tender No.: IIT(ISM)/Chemical/PRJ/055/2019-20, Submission Deadline: 23.07.2019”**.
 - c) The above TWO separate sealed envelopes are to be put in a bigger envelope (ENVELOPE-THREE), which should also be sealed.
 - d) Each of the above THREE envelopes MUST be super-scribed with **“Bid for Supply and Installation of Mass spectrometers along with data acquisition, retrieval and analysis system against Tender No.: IIT(ISM)/CHEMICAL/PRJ/055/2019-20, Dated: 26 June 2019, Submission Deadline: 23.07.2019”**.
3. The bids must be neatly typed/computer printed. Hand written offer will be rejected. Bids must carry the numbers of GSTIN/ sales tax / VAT / TIN / PAN / Service Tax Registration No. Bids must be in sealed envelope.
4. Since IIT(ISM) Dhanbad is an Indian Institute of Technology and subject item will be used for research, hence benefit of reduced rate of GST should be considered if applicable.
5. All relevant technical specifications/details of offered items, drawings, printed technical leaflets, and commercial details which are necessary to ensure that offer is complete in all respects should be attached with the technical bid documents.
6. A ‘Compliance Statement’ along with a certificate and duly signed that the tenderer satisfies the technical requirements. The said statement should be in a tabular form with the columns: sl. no., (2) technical requirement as per NIT; (3) what is offered by the tenderer; and (4) status of compliance: Complied/Not complied).

7. IIT(ISM) does not bind itself to offer any explanation to those bidders whose Technical Bids have not been found acceptable by the Evaluation Committee of the Institute.
8. Following documents have to be furnished by the bidders with the technical bids (part-1):
 - (a) Self attested copies of credentials in support of capability to undertake the supply/work.
 - (b) Technical literature/catalogue with the detail specification of the material
 - (c) Satisfactory performance certificate from their customers for same/similar supply/service must be enclosed alongwith the technical bid.
 - (d) A copy of this tender document must be signed and sealed on all pages by the bidder(s) accepting the instructions and terms & conditions of the NIT and must be attached with the bid.
9. Price should be quoted as per our price schedule **Annexure-A or Annexure-B**. Justification of the price quoted must be provided with the Price Bid. For this, Price List of the OEM and purchase order of govt. organizations / IITs/ NITs/ CSIR Labs / ISRO labs etc. should be attached. Price bids of only technically qualified tenderers shall be opened in on a pre-notified date and time. Decision of IIT (ISM), Dhanbad in this regard will be final and binding by all the bidders. The comparison between the indigenous and the foreign offers shall be made on FOR destination basis CIF/CIP basis respectively. However, the CIF/CIP prices quoted by any foreign bidder shall be loaded further as under:
Towards customs duty, IGST and other statutory levies, Custom clearance, inland transportation, currency fluctuation etc. – 15% of the CIP/CIP value.
10. IIT(ISM), Dhanbad is entitled for Custom Duty Exemption under Govt. of India notifications and is registered with DSIR, Govt. of India for this purpose. This may be taken into consideration while quoting minimum possible rate. It will not be issued any Indian Agent/dealer or distributor at any circumstances. IIT(ISM) will provide only custom duty exemption certificate for availing concessional custom duty. IIT(ISM) will not pay any extra custom duty other than duty exemption certificate. It will sole responsibility of the bidder to get DSIR copy from IIT(ISM) on time.
11. IIT (ISM), Dhanbad does not issue form 'C' or 'D' for concessional Sales tax/VAT. Hence, full rate of sales tax as applicable to educational institutions against the form of certificate should be indicated.
12. Bid Security or Earnest Money Deposit (EMD):- Required Amount for EMD must be submitted in the form of Demand Draft issued from any Nationalized/Scheduled commercial Bank in favour of Registrar, IIT (ISM), Dhanbad payable at Dhanbad with the bid (part-1). Bid received without EMD in part-1 (techno-commercial bid) will be rejected. It must not be clubbed with Tender Fee. No interest will be payable by IIT (ISM), Dhanbad on the Earnest Money Deposit. The earnest money of all the unsuccessful bidder(s) will be returned to the respective bidder(s) through bank / RTGS transfer without any interest within 60 (sixty) days only after placing the order / awarding the contract. The Earnest Money of successful bidder(s) shall be returned on receipt of Performance Security (Performance Bank Guarantee / PBG) as mentioned in this tender document. If the successful bidder(s) fails to furnish the performance security or fails to deliver/provide the item/installation/service as per the order's terms and conditions within stipulated period, the earnest money shall be liable to be forfeited by IIT (ISM), Dhanbad. An undertaking to this is to be submitted.
13. EMD must be in the separate Demand Draft.

14. **Performance Security or Performance Bank Guarantee (PBG):-** The successful bidder(s), on whom order will be placed, has to submit a performance security of 10% of the total order value within seven days of placement of purchase order and as per PO terms before release of any payment. Performance security has to be submitted in the form of Bank Guarantee/Demand Draft from any Nationalized/Scheduled commercial Bank in favour of the Registrar, IIT (ISM), Dhanbad. Performance security should remain valid for a period of two months beyond the date of completion of all contractual obligations of the successful bidder(s). No interest will be payable by IIT (ISM) Dhanbad on the Performance Security deposited. In case the contractor fails to provide satisfactory service, the Performance Security submitted by the bidder(s) is liable to be forfeited. An undertaking to this is to be submitted.
15. **Validity Period:** - The validity period of the tender should be clearly specified. It must be at least for **270 (Two Hundred Seventy) days** from opening of price bid.
16. **Warranty:** All the active components must carry minimum one (01) years onsite comprehensive warranty from the date of satisfactory installation.
17. **Comprehensive Annual maintenance contract (AMC):** The cost of 'annual maintenance contract (AMC)' and "comprehensive maintenance contract (CMC)" should be provided separately for extension of warranty for additional years (which is beyond the normal warranty period mentioned earlier) on yearly basis as an option with the price bid. Offer including terms & conditions should be quoted on per year basis to enable purchaser make AMC for any period from 01 to 05 years, if required.
18. **Delivery & installation Period and Liquidated Damage:** As time of the essence for this procurement, hence the ordered materials/work complete in all respects are required to be delivered and installed within the period stipulated in the purchase order failing which liquidated damages of 1% per week or part thereof for the delayed period subject to maximum of 5% of the total value of the order shall be deducted from the invoice of the supplier. Earliest/ expected delivery period should be clearly indicated. Packing should be suitable for 'Air freight'.
19. **Inspection:** Inspection shall be carried out at IIT (ISM), Dhanbad after arrival of the materials and decision of the Institute in this regard shall be final.
20. **Rejection and Replacement:** Rejection, if any, shall be notified to the supplier within 30 days of receipt and inspection of the material/workmanship. Rejected materials/work is to be removed by the supplier at his own risk and cost from IIT (ISM). Campus within 14 days of intimation of rejection. Defective Supplies are required to be replaced within 14 days of the removal of the rejected materials/work. Failing which IIT(ISM) will dispose the materials at risk and cost of the bidder.
21. **Risk Purchase:** IIT (ISM) shall be at liberty to realize from the supplier the differential amount, if any, which it shall have to incur on purchase of the material/work at higher price(s) from elsewhere in the market, if the supplier, due to their fault, fails to supply the ordered quality and quantity of the material/work within the stipulated time.
22. **Conditional offer will not be accepted.**
23. **Payment:** In case of indigenous item i.e. inside India, payment may be released through RTGS / online payment mode against complete execution of the purchase order (PO) and submission of all

the required documents as per the order within 30-45 days after satisfactory supply, inspection, installation/commissioning & acceptance and on submission of pre-receipted tax invoice, delivery challan, warranty certificate and installation report in triplicate and Performance Bank Guarantee. The invoice should be duly certified by the Head of Deptt. of IIT (ISM), Dhanbad to which supply is made or any other IIT (ISM) official authorized for this purpose. IIT (ISM), Dhanbad does not make any advance payment or part payment.

24. Advance payment will not be released. Any bid having condition of advance payment will be treated as non-responsive bid.
25. Country of origin and port of shipment must be stated in the technical bid itself in case of foreign supply. Any change at later stage will not be accepted.
26. Name and address of Indian Agent, percentage of agency commission, if any and role of the Agent with respect to the subject supplies and a statement thereon that "Agency Commission is included in the bid.
27. Payment will be released through bank/ RTGS/Wire transfer. The payment will be released after statutory deductions and compensation of delay / liquidated damage (LD) / late delivery etc., if any.
28. Any payment will be released only after satisfactory completion of the work/installation and after submission the certified bill(s) / invoice(s).
29. All communications are to be addressed to the Registrar, IIT (ISM), Dhanbad quoting the Tender No. and Date.
30. IIT (ISM), Dhanbad reserves the right to accept or reject or cancel any or all tender notice or bid(s) or order(s) at any stage without assigning any reason thereof.
31. For any dispute, the place of jurisdiction shall be Dhanbad (Jharkhand, India) only.
32. It will be the sole responsibility of the bidder(s) that its bid should reach on or before the submission deadline to Registrar, IIT (ISM), Dhanbad.
33. **Governing Law:** The order, placed, will be the contract between the successful bidder(s) and IIT (ISM), Dhanbad and shall be governed by the LAWS of India and under the contract shall be taken by the parties only in Dhanbad (Jharkhand, India) to competent jurisdiction.
34. Bid(s) shall be submitted in official tender form / format only. If submitted in any other form / format, the same shall be rejected. No paper shall be detached from the tender. All pages must be numbered properly and there must be seal and sign of the bidder(s) on all the pages of its bid.
35. The name and address of the bidder(s) shall be clearly written in the space provided and no overwriting, correction, insertion shall be permitted in any part of the tender. The tender should be filled-in and submitted in strict accordance with the instructions laid down herein; otherwise the bid is liable to be rejected.
36. The bid is liable to be rejected if complete information is not given therein, or if the particulars and data (if any) asked for in the Schedule to the tender are not filled-in properly.

37. The successful bidder(s) will indemnify IIT (ISM), Dhanbad, in case of any damage or liability, which may arise on account of any act or omission directly/indirectly attributable to the bidder(s).
38. Dispute, if any arising out of providing the said service(s) shall be settled mutually or arbitration by sole Arbitrator to be appointed by the Registrar, IIT (ISM), Dhanbad at Dhanbad as per the provisions of the Indian arbitration and Conciliation Act, 1996 and the Rules framed there under. The award passed by the said sole Arbitrator, will be binding upon the parties. The arbitration proceedings shall be held at Dhanbad only.
39. The bidder shall ensure that its authorized representative should be present at the time of any discussion/presentation/negotiation at IIT (ISM), Dhanbad regarding the bid, for which no any kind of TA/DA/boarding/lodging will be facilitated by IIT (ISM) Dhanbad.
40. The schedules of items/services are required as per Chapter-4 of this tender. Bidder(s) must clearly indicate in its tenders, the different taxes and duties which they propose to charge mentioning clearly the present rate(s) thereof with appropriate reference. Vague offer like "duties as applicable" shall not be considered.
41. Price should be quoted according to the format of Price Bid (Part-2) (Chapter – 5 of this tender) only for the item(s)/services as mentioned at Chapter – 4 of this tender. The required item(s)/services to be delivered / provided on or before the dead line as per purchase order.
42. The bidder(s) should be registered with VAT/CST/SST, Income Tax/service tax authorities/GST etc. and to enclose the copies of the relevant certificate along with the technical bids. The agency must be authorized by appropriate government authority to deliver the items/services at the IIT (ISM) Dhanbad.
43. The successful bidder(s) will ensure that its employees/staff/personnel would strictly follow all the security instructions and rules and regulations of IIT (ISM), Dhanbad during their visit in the campus.
44. If the successful bidder(s) commits breach of any of the above or Order's terms and conditions or is not able to deliver the item / provide the services / complete the work on time, the contract will be cancelled and security deposit shall be forfeited and a damage liability at the discretion of IIT (ISM), Dhanbad will be imposed on the bidder(s).
45. Bills / Invoices raised by the bidder(s) will be subject to applicable statutory deductions including T.D.S.
46. Necessary corrigendum(s), if required, will be issued at any stage, which must be acceptable to the bidder(s). Any corrigendum will be published on our website www.iitism.ac.in only. Bidder(s) must be in touch with our website www.iitism.ac.in for corrigendum(s). It will be sole responsibility of the bidder(s) that they will go through the corrigendum(s) published, if any, on our website www.iitism.ac.in and submit its tender accordingly.
47. Shortlisted bidder(s) may be called for presentation / demonstration / meeting at IIT (ISM), Dhanbad office with a short notice. Request from the bidder(s) to change the date and time of presentation / demonstration / meeting will not be accepted. If the bidder(s) will not attend for the same, then their

bid(s) will be treated as non-responsive and hence the bid(s) will not be considered for further process.

48. Price bids will be opened for those bidder(s) who are shortlisted and declared as technically qualified bidder(s) by the Committee of the IIT (ISM), Dhanbad. In this regard, decision of IIT (ISM), Dhanbad will be final and binding to all the bidder(s).
49. Please note that no part shipment/transshipment/third party shipment is acceptable to us.
50. Submission deadline / last date & time for submission of the bids and date & time for opening of the same are given in this bid. The bids will be opened as per IIT(ISM) rules. Authorized representative of bidders having authorization letter, a govt. issued ID card and an employment ID card issued by the bidder may present during bid opening at their own discretion. In case of submission deadline / last date or bid opening date is a holiday/declared as a holiday, then next working date will be the submission deadline / last date for submission/ opening of tender. However, Submission deadline or bid opening date & time will not be changed upon any request from the bidder side may be changed as per IIT(ISM) rules. In this regard, decision of the IIT (ISM), Dhanbad will be final and binding to all the bidders.
51. For the items / services, the bidders must ensure the required quality, quantity, materials, dimensions & other parameters and quote accordingly. In case items / services provided are not same as quoted/ordered, the claim for payment shall not be accepted. No payment, claims for such items / services shall be released. In this regard, decision of IIT (ISM), Dhanbad will be final and binding to the bidders.
52. IIT (ISM), Dhanbad at its discretion may change the quantity/quality/parameters/upgrade the criteria/drop any item(s) or part thereof at any stage. In case of any dispute, the decision of IIT(ISM) shall be final and binding on the bidders/tenderers.
53. IIT (ISM), Dhanbad reserves the right to accept or reject any or all the bids in part or in full without assigning any reason and does not bind itself to accept the lowest bid. The decision of the competent authority of IIT (ISM), Dhanbad will be final and binding to the bidder(s).
54. All the bidders, those are interested to participate in this bid, must have to submit the technical specification of their bid in MS-Word Format in a CD with the technical bid. The CD must be marked with the NIT No. and submission deadline.
55. Professional(s) to be deployed by the successful bidder(s) for the supply of the item / installation / execution of the work in order to provide the item(s) /service(s) as per order must be well qualified.

CHAPTER 3**Schedule of Requirements**

<u>Description</u>	<u>Details</u>
NIT No.	IIT(ISM)/Chemical/PRJ/055/2019-20
Date of Tender	26 June 2019
Bid submission deadline	23.07.2019, 1:00 P.M.
Date of opening of the bids (technical part-1)	23.07.2019, 4:00 P.M.

CHAPTER 4

Sl. No.	Item	Quantity
1.	Mass spectrometers along with data acquisition, retrieval and analysis system	One

Specifications for Supply and Installation of Mass spectrometers along with data acquisition, retrieval and analysis system:

A High Sensitive MS-MS (Triple Quadrupole) with following specification is required:

Both the Gas Chromatograph and Triple Quad Mass spectrometer must be manufactured, supplied and installed by a single vendor to provide a seamless integration between the GC and MS.

Both the Gas Chromatograph and Mass Spectrometer must be fully supported by the supplier to provide a seamless instrument diagnostics between the GC and MS. At least 10 years spares support need to be provided.

Table 1: Detail Specification:

A) Mass Spectrometer Detector with EI (Electron Ionization) ion source:

Ion Source

- The mass spectrometer must offer a wireless EI ion source made of solid, non-coated, inert material
- The ion source including repeller, ion-volume, source lenses and RF lens must be contained in a single source cartridge allowing easy removal of these parts for routine maintenance.
- The ion source must be heated by a block heater controlled with user-selectable temperature set points up to 350 °C or more to reduce the contamination of the ion source
- The electron energy must be user-definable, adjustable from 0 to 150 Ev or more.
- GC transfer line must have a settable temperature limit of up to 400 °C or more for ideal transfer of components from GC to MS.
- A curved ion guide must be provided after the ion source and before the analyzing quadrupole to reduce background of excited neutrals to single events per scan without requiring signal thresholding, background subtraction or smoothing.
- The curved ion guide must use off-axis optics design to enhance low level detection and quantitation. The curved ion guide must also protect the main quadrupole set from contamination, eliminating the need for periodic replacement of the main quadrupole set.
- The mass spectrometer must feature a removable pre-filter to protect the mass analyzer.
- An RF Lens must be present immediately before the curved ion guide and must be in electrical contact with the quadrupoles of the curved ion guide during operation of the instrument to protect the curved ion guide from contamination.
- A curved ion guide must be provided after the ion source and before the analysing quadrupole to reduce background of excited neutrals

Quadrupole Mass Analyzer

- The mass range must be 1.5 –1100 amu (u) or more
- The resolution must be ≤ 1.0 amu over the entire mass range or better

- The quadrupole analyser must support fast scanning at 20,000 u/sec or more.
- The acquisition rate for SRM transitions must allow for measurement of more than 800 SRM per second or better.
- The minimum SRM dwell time must not be greater than 0.5 ms or better.
- The quadrupole rods must be made of inert, non-coated, homogeneous molybdenum, and must be cleanable.
- The quadrupole rods must not require dedicated heating.

Collision Cell

- The collision cell must use high-speed optics for maximum ion transmission.
- The collision energy must be adjustable in the range of 0 – 60 eV in user-programmable increments of 1 eV.
- The collision cell must support minimum SRM dwell time of 500 μ s.
- The collision gas to be used: Nitrogen or Argon
- There should not be any requirement of He to be used as quench gas in the collision cell.

Detection System

- The detection system must utilize a discrete dynode electron multiplier integrated with linear-log electrometer with maximum linear output of 68 μ A.
- The detection system must provide electronic dynamic range greater than nine orders of magnitude ($>10^9$) or better.

Vacuum System

- The vacuum system must use an air-cooled high vacuum pump (240L/s or more) and include control and safety interlocks integrated into the GC-MS system.
- The vacuum system must have the ability to perform automated leak check using a metered amount of air as reference.
- The vacuum system must include 3.3 m³/hr rotary-vane oil fore-pump.

Instrument Control

- The instrument control must support the following scan modes:
MS Mode: full scan (FS), SIM and FS/SIM simultaneous within a single sample injection, timed-SIM (t-SIM), FS/t-SIM simultaneous within a single sample injection.

MS/MS Mode: full scan (FS), SRM and FS/SRM simultaneous within a single sample injection, timed-SRM (t-SRM), FS/t-SRM simultaneous within a single sample injection.
- The instrument control must have the ability to alternate between Full Scan MS and SRM/SIM target analysis on successive scans. .
- The instrument control must include an automated SRM method development tool, which allows for automated, user-selectable criteria-guided SRM method development.
- The system should be supplied with NIST 2017 Library

MS Installation Specifications - to be demonstrated during installation

- **Instrument Detection Limit** : 4fg or less OFN derived at the 99% confidence level from area precision of eight sequential injections of 5 fg OFN Splitless injection acquired in EI SRM/MRM mode.

B) Gas Chromatograph:

- ❖ Typical Retention Time Repeatability: <0.0008 min or better.
- ❖ The Peak Area Repeatability should be <0.5 % RSD or better
- ❖ Operating Range: Ambient +4 °C to 450 °C
- ❖ Maximum heating rate: 125 °C/min
- ❖ Oven cool-down (22 °C ambient): 450 °C to 50 °C in <4 min
- ❖ Up to 18 channels of integrated electronic gas control
- ❖ Pressure set points minimum increments: 0.01 kPa-0.001 psi in all ranges
- ❖ Carrier Gas Control Common to all Injectors
- ❖ Split ratio: Up to 10000:1 or more
- ❖ Pressure range: 0–1000 kPa (0–145 psi) or wider.
- ❖ Modes: Constant and programmed pressures and flows with gas saver and septum purge
- ❖ Total flow setting:
 - ❖ Control of split flow in 1 mL/min from 0 to 1250 mL/min or more
 - ❖ Purge flow from 0 to 50 mL/min or better
- ❖ Number of ramps/plateaus: 25/26
- ❖ Ambient rejection: < 0.01 °C per 1 °C

Split/Splitless Injector Module -1 No

- ❖ Split/Splitless Injector module with integrated electronic gas control
- ❖ Constant Flow and Pressure modes,
- ❖ Programmable Flow and Pressure modes,
- ❖ Leak check and Column Evaluation;
- ❖ Max T = 400°C;
- ❖ Split ratio up to 10000:1;
- ❖ Control of split flow in 1mL/min from 0 to 1250mL/min
- ❖ Purge flow from 0 to 50ml/min (electronic control);
- ❖ To be suitable for all capillary columns (50µm to 530µm id);
- ❖ Large Volume Splitless injection up to 50µL using specific liners and pre-column;
- ❖ Should be compatible with 1/8" and 1/16" packed column (using adapters);
- ❖ Should Support Purge & Trap & Thermal Desorption

FLAME IONISATION DETECTOR (FID):

- ❖ Instant Connect-Flame Ionization Detector module:
- ❖ high performance in terms of sensitivity and dynamic range featuring acquisition rate as high as 300 Hz;
- ❖ MDL <1.4pg C/s;
- ❖ Sensitivity >0.03 Coulombs/gC;
- ❖ linear dynamic range = >107 (±10%);
- ❖ integrated electronic gas control
- ❖ capillary column optimized compatible with 1/8" and 1/16" packed column;
- ❖ Flameout detection and automatic reignition;
- ❖ Max T = 450°C;
- ❖ He or N₂ as make-up gas.

OTHER REQUIRED ACCESSORIES/ATTACHMENTS:

- ❖ Dual Detector Microfluidics Kit - splits single column effluent between two GC detectors (including MS)
- ❖ Gas Sampling Valve Module
- ❖ Kit Adapters for connecting 1/8" or 1/16" packed columns to the Gas Sampling valve module
- ❖ Start-up Kit/Installation Kit for MS
- ❖ Suitable data acquisition, retrieval and analysis system (branded) along with Chromatography Software for total operation & control of the system
- ❖ NIST 2017 MS Library with RI & MS/MS

CONSUMABLES KIT:

- ❖ MS PERFORMANCE SPECIFICATIONS TEST KIT - 1
 - ❖ ION VOLUME LOCKING PLATE - 1
 - ❖ LENS 1 ASSY MOLDED - 3
 - ❖ DUAL FILAMENT ASSY - 1
 - ❖ GLOVES, CLEAN PROCESS - NITRILE – MEDIUM – 50
 - ❖ ALUMINUM OXIDE CLEANING COMPOUND - 1
 - ❖ O-RING AS568B VITON - 1
 - ❖ CALIBRATION COMPOUND - FC43 - 1
 - ❖ NUT SGE 1/16"x1.2mm - Brass - pk of 5 - 1
 - ❖ FERRULE .4mm ID 1/16 OD, GRAPHITE/VESPEL - 15
 - ❖ FERRULE 1/16 GRAPHITE/VESPEL NO/HOLE - 2
 - ❖ WAVE WASHER SPIRAWAVE FOR ION VOLUME (5ea) - 1
 - ❖ TECHNICLOTH WIPERS 12" X 12" PK OF 150 - 1
 - ❖ APPLICATORS COTTON TIPPED - 4
 - ❖ OIL, VACUUM PUMP, 1 LITER - 1
 - ❖ REPLACEMENT TRAP, O2-H2O-HYDROCARBON – 1
-
- ❖ FID LINEARITY TEST MIX
 - ❖ CALIBRATION MIXT. 1ML, FID DET.
 - ❖ MS/MS PERFORMANCE SPEC KIT

COLUMNS (for detection of CO, CO₂, CH₃OH, CH₄, etc):

- ❖ TG-BOND Msieve 30m x 0.53mm x 50µm Column OR Equivalent column
- ❖ TG-BOND Q 30m x 0.53mm x 20µm Column OR Equivalent column

WARRANTY:

At least One Year Comprehensive Warranty for the complete system and its accessories. Comprehensive warranty should include all necessary spares and consumables for smooth running of the system for at least One year.

LOCAL PREREQUISITES FOR INSTALLATION OF THE INSTRUMENT:

- | | | |
|----|---|----|
| 1) | Mono LaserJet Printer Model 1020 or Equivalent | 01 |
| 2) | Branded 10KVA true online UPS with IGBT based, DSP control system having 3 phase input & 1phase with inbuilt isolation transformer and 12V, SMF battery with Battery rack & Intercell connector to provide 30mints backup | 01 |

Table 2. List of other Certificates/Items to be produced by the OEM/Supplier:

Sl. No.	Description	Attached (Yes/No)
1.	At least one year warranty certificate including technical and maintenance support is required from original equipment manufacturer (OEM). In case the local representative of the OEM/Principal Company changes or withdraws a letter of commitment by the OEM/Principal Company is required stating that they will directly cover the warranty and service the equipment as and when required or their new representative will cover the above mentioned services as per the terms and conditions mentioned in this document.	
2.	Detailed Catalogue/Data Sheet of the quoted item(s).	
3.	Clientele List (preferably centrally funded institutions/labs)	
4.	Performance Letter from the Clients	
5.	Compliance chart with respect to NIT specification, supported by catalogue and manufacturer website to be provided.	

CHAPTER 5
(On the letter head of the bidder)

Price Bid (Part 2) Annexure-A

1. PRICE SCHEDULE FOR GOODS BEING OFFERED FROM ABROAD

Name of the Bidder _____ (On bidders letter head)

NIT Reference No. **Chemical/PRJ/055/19-20**

Date: **26 June 2019**

Bidder's Reference No. _____

Date: _____

Sl. No.	Description/Part No./Make Model	Quantity	Unit Price (in foreign currency)	Total Amount (in foreign currency)
1.				
2.				
Total Ex-Works Price-				
Packing & Forwarding and inland freight				
*FCA (at port)				
Terminal charges, loading on vassal				
**FOB (name of port)				
Air freight & insurance up to destination port				
*CIF				
Carrier charges & insurance up to final destination				
**CIP				
Concessional Custom Duty (Against DSIR Certificate)				
IGST rate (Against IIT (ISM) Certificate)				
Other Duties/taxes/clearance charge, if any				
Transportation charges up to IIT ISM Dhanbad				
Chargeable weight/Gross weight of consignment				
Indian agency Commission (%)				
Installation & Commissioning charge				
Training charges, if any				
Additional Warranty Charges, if any				
Annual Maintenance Charge, if any				
Educational discounts, if any				

* & ** Mandatory requirement

Total Bid Price _____ in words _____

Note :

Total Bid price in foreign currency _____ in words

- (a) Indian agent name & address _____
- (b) Installation, commissioning & training charges, if any _____
- (c) Please note that Indian agents' commission shall be paid in Indian Rupees only.
- (d) Banker's details such as- Name of account holder, Account Number, Name of Bank, Branch code, RTGS code, NEFT code, SWIFT code etc.
- (f) Price schedule of optional items shall be indicated in a separate sheet in the same performa.
- (g) Quoting Price for FOB/FCA and for CIF/CIP basis, otherwise bid will be rejected.
- (h) Wherever the price quoted on FOB/FCA and CIF/CIP basis are the same, the contract would be made on CIF/CIP basis only.
- (i) Country of Origin, Dimension and Gross Weight must be provided

Signature of Bidder

Name _____

Business Address with contact details _____

Price Bid (Part 2) Annexure-A**2.PRICE SCHEDULE FOR GOODS BEING OFFERED WITHIN INDIA**

Name of the Bidder _____ (On bidders letter head)

NIT Reference No. **Chemical/PRJ/055/19-20**

Date: 26 June 2019

Bidder's Reference No. _____

Date:

Sl. No.	Description/Part No./Make Model	Quantity	Unit Price (in foreign currency)	Total Amount (in foreign currency)
1.				
2.				
3.				
Ex-Works Price-				
Packing & Forwarding				
Transportation				
FOR (IIT ISM) Dhanbad				
GST/IGST (their rate(s) as the case may be, clearly specified)				
Please note that IIT ISM is eligible for Concessional GST as per Notification No. 45/2017 – Central Tax (Rate) for CGST, 45/2017 – State Tax (Rate) for SGST and 47/2017 – Central Tax (Rate) for IGST,				
Insurance up to Destination/handover (in case of fabrication)				
Installation & Commissioning charge				
Training charges, if any				
Additional Warranty Charges, if any				
Annual Maintenance Charge, if any				

*(On the basis of the technical specifications submitted)

Total Bid Price _____ in words _____

Note :

(a) The Price schedule of optional items shall be indicated in a separate sheet in the same Performa.

(b) Cost spare parts may be indicated separately

Signature of Bidder

Name _____

Business Address with contact details _____

(To be attached with Price Bid)

(On the letter head of the bidder)

UNDERTAKING BY THE BIDDER(S)

I have carefully gone through the various terms and conditions mentioned in the tender document of **Supply and Installation of Mass spectrometers along with data acquisition, retrieval and analysis system**. I agree to all the conditions and offer to supply the item at IIT (ISM), Dhanbad. I am making this offer after carefully reading the conditions and understanding the same. I have acquainted with all the tasks required to be carried out, before making this offer. I will abide by the corrigendum(s), if any, to be issued by IIT (ISM) Dhanbad on its website www.iitism.ac.in. I hereby sign this undertaking as token of our acceptance of various conditions mentioned in tender document. Justification of the price is also attached herewith.

Place: _____

Dated: _____

Name & Signature of the bidder(s):

Address: _____

CHAPTER 6**Contract Form**

With reference to the tender reference no. **IIT(ISM) /Chemical/ PRJ/055/2019-20**, Dated: **26 June 2019** of IIT(ISM), Dhanbad for **Supply and Installation of Mass spectrometers along with data acquisition, retrieval and analysis system**, we (bidder(s)'s name) _____ accept all the instructions and terms and conditions of the tender and accordingly hereby submit our quotation no. _____ dated _____.

ALL TERMS AND CONDITIONS OF THE N.I.T. ARE ACCEPTED

1	Name and address of the bidder	
2	Telecom nos. of the bidder i.e. phone fax, & email id.	
3	Signature, name & designation of the person signing on behalf of the bidder & his/her office seal	
4.	Name & designation of the contact person & his phone/mobile no./e-mail ID	

We hereby declare that all statements/details made in this tender are true, complete and correct to the best of my knowledge and belief. I understand that in the event of any information being found false or incorrect at any stage or we do not satisfy any of the stated criteria, our offer is liable to be cancelled automatically and IIT (ISM), Dhanbad may take an action against this firm for such false information including legal action.

Signature:

Name:

Designation:

Bidder(s)'s Name:

Seal:

CHAPTER 7**Form 7.1- Checklist****(to be submitted with technical bid part-1)**

1. Duly sealed and signed (on all pages) of the tender document.	
2. Demand draft is attached as Tender Fee	
3. Demand draft is attached as EMD.	
4. Form No. 7.4 (Techno-Commercial bid, Part-1) is attached	
5. Form No. 7.2 and 7.3 are attached with Techno-commercial bid (part-1)	
6. Details of PAN, TIN, Service Tax Registration No., GST No. etc. is attached	
7. Bank account details is attached	
8. Complete contact details (Name, Postal address, E-mail address, phone no. mobile no.) is provided	
9. Complete technical details attached	
10. The Techno-Commercial bid (Part 1) is sealed in a separate envelope (ENVELOPE-ONE) with EMD and Tender Fee in the form Demand Draft and duly super-scribed as "Techno-Commercial bid (Part 1) - Bid for Supply and Installation of....."	
11. The Price bid (Part 2) is sealed in separate envelopes (ENVELOPE-TWO) and duly super-scribed as "Price Bid (Part 2) – Bid for Supply and Installation of....."	
12. A copy of PAN/Voter Card/Aadhar Card including ID card of the bidder (firm) of the authorized signatory of the bidder(s) is attached with the Form 7.1	

Form No.: 7.2

To,
 The Registrar,
 Indian Institute of Technology (Indian School of Mines), Dhanbad,
 P.O. – I.S.M.
 DHANBAD– 826004.

Ref.: Your Notice Inviting Tender No. IIT-ISM / Chemical/PRJ/055/ 2019-20, Dated: 26 June 2019

Sub: Technical bid relating to **Supply and Installation of Mass spectrometers along with data acquisition, retrieval and analysis system.**

Sir/ Madam,

1. I/We have gone through all Chapters of the tender document such as Instructions and Terms and conditions, minimum eligibility criteria, schedule of requirements, Specifications and allied technical details etc. as enlisted by you in your Notice Inviting Tender for the subject under reference.
2. I/We, hereby confirm that we have understood all the above and confirm my/our commitment to abide by them.
3. I/We also confirm my/our commitment to provide the services as enlisted in your Notice Inviting Tender under reference.

Seal and Signature of authorized signatory of the bidder(s)with date→

Documents	Yes/No	Document No. (If submitted a copy of the same)
PAN Card/Voter ID/Aadhaar Card		
Official ID Card		
Other Documents (specify below)		

(A copy of PAN/Voter Card/Aadhaar Card and official ID card of the authorized signatory of the bidder(s) must be attached with this letter.).

Form No.:7.3**(to be submitted with technical bid part-1)**

1. Earnest Money Deposit: DD NO. _____ Date: _____ Amount: Rs. One Lakh Thirty Thousand only, Issued by bank and branch _____
2. Validity of Quotation: days from the date submission deadline (minimum 270 days from the submission deadline).....
3. Performance Security or PBG: Will Be Submitted with the Performance Security (PBG), if Purchase Order placed by I.I.T.(I.S.M.), Dhanbad
4. Payment Terms: Payment after supply, satisfactory installation and submission of all required documents as per Purchase Order after statutory deductions and penalty (liquidity damage), if any as decided by I.I.T. (I.S.M.), Dhanbad.

ALL THE ABOVE MENTIONED TERMS & CONDITIONS ARE ACCEPTED BY US AND PROFORMA IS SUBMITTED FOR CONSIDERATION.

Signature & Seal of the Bidder(s)

Form No.: 7.4

TECHNO-COMMERCIAL BID (Part-1)

TECHNICAL BID

- 1. Name of the Bidder(s).....
- 2. Name of the authorized person (who signs on the tender document on behalf of bidder(s)) with PAN/Voter Card No./Aadhar No.
- 3. Address of the Bidder(s)..... , Website
- 4. Phone No. (Mobile).....Fax..... E-mail

Details of the item and its specification:

SI. No	Particulars	Description

Name of the authorized signatory:

Name of the Bidder(s):

Contact No.:

Signature & Seal of the Bidder(s)
