

PUNJABI UNIVERSITY PATIALA.

Short Term E-Tender Notice

E-Tenders on item rate basis through electronic tendering process are invited by the undersigned from the Original Equipment Manufacturers (OEM) for the Purchase of LC-MS fulfilling the eligibility criteria mentioned herein which shall be uploaded & received on www.tenderwizard.com/PUNJAB

1. Last date and Time for receipt of Tender online : Date 14-03-2020 17:00
2. Time and date of opening Technical bid : Date 16-03-2020 11:00
3. Time and date of opening Financial bid : Date 17-03-2020 11:00

S.No	Item	Cost	Earnest Money	Tender Fee	Bid processing fee.
1.	Supply of LC-MS and its essential consumables for Science Departments at Punjabi University, Patiala	1,75,00,000/- and 12,00,000/-	3,74,000/-	2000/-	2360/-

Aspiring Tenderer who has not obtained the User ID and password for participating in e-tendering may obtain the same by registering in the e-procurement portal www.tenderwizard.com/PUNJAB. The Tenderers once registered can participate in any of the department tenders. For any clarification contact 9257209340, 0172-5035985, 8146699866 or E-mail : etenderhelpdeskpb@gmail.com, pavitar.s@etenderwizard.com

All other details can be seen in the bidding document.

Terms and conditions:

1. Earnest Money and Tender form fees separately of required value shall be submitted through e-payment gateway or in shape of DD of any Nationalised Bank payable in favour of The **Registrar**, Punjabi University Patiala. Tender fee, Earnest money must be reached on or before date 16-03-2020 till 10:00 AM in the office of the Internal Quality Assurance Cell (IQAC). Tender will be opened in Office of Director University Computer Centre.
2. Tender Processing fee should be paid through e- payment (Internet Payment Gateway (Debit & Credit), Net banking & National Electronic Funds Transfer/OTC only).
3. Bid Security and Tender Processing fees should be deposited before opening the tender.
4. The Tender documents shall be uploaded in 2 folders.
 - (i) **Folder-A:** Shall contain pre qualification documents such as Registration, GST No., PAN No. Turn Over, Income Tax Return, and Black list Self certificate etc uploaded on website.
 - (ii) **Folder-B:** shall contain financial bid on the prescribed form.
5. In case earnest money of the required value is not deposited, the bids will not be considered and rejected straightaway.
6. The folder-A shall be opened only of those suppliers/Tenderers whose earnest money is found to be in order.
7. The folder –B: shall be opened only of those Suppliers/Tenderers whose technical bid is found fit.
8. The final selection of the bidder for the supply of the equipment and consumables will be made on the basis of Bid Evaluation Procedure as per Annexure A.
9. Corrigendum /Addendum/Corrections, if any will be published in the web site only. Firm shall to continue to check the website.

PRE-QUALIFICATION REQUIREMENTS:-

1. OEM for Supply of LC-MS can only participate.
2. The Supplier/Firm shall submit a copy of PAN No., GST No. etc.
3. The Supplier/firms shall submit copies of income tax return and Turn Over for the last 2 years.
4. The Supplier/firms shall also submit Self certification that they have not been debarred/blacklisted by any Govt./ Semi Govt. Organization or any Corporation at any stage.

Other Terms and Conditions:-

1. University Reserves the right to make inspection of the material received from the tenderers/suppliers.
2. Prices should be inclusive of all taxes and levies in INR, FOR Punjabi University Patiala.
3. All items to be supplied must be branded and shall be amply supported onsite directly by OEM. All RMA, shall be in name of Punjabi University, Patiala.
4. The Equipment is to be made available/ installed within two weeks from date of placing confirmed Purchase Order along with all the bills.
5. After the acceptance of tender and placing of order, the time limit for supply of all the material would be as per university needs to be within two - three weeks.
6. If there is holiday on the receipt/opening day of the tender, the tender shall be received / opened on the next working day at the same time in the office of the Internal Quality Assurance Cell (IQAC) at Punjabi University, Patiala.
7. The Registrar, Punjabi University reserves the right to reject the tender without assigning any reason before/after opening of the tenders and the tenderers shall have no right or any claim what so ever for the same on this account.
8. The order for quantity of different items can be increased or decreased. The Suppliers/ Tenderers shall have no right or any claim what so ever for the same on this account.
9. The rate quoted by the Supplier/Tenderer shall be inclusive of all taxes levied by Central Govt. or State Govt. Authority including their variations as notified by the Concerned Authority from time to time and also of all the new taxes and levies that may be imposed.
10. The Supplier/ Tenderer shall comply with the proper by-laws and legal order of the local body or authority under the jurisdiction of which the supply is executed and pay all fees and charges for which he may be liable. Nothing extra shall be payable by the University on this account.
11. The quoted rates shall be valid for full time limit.
12. Firm will supply the material on quoted Rates which include F.O.R., Loading, Unloading, stacking and inclusive of all taxes.
13. An agreement will have to be signed with the Registrar, Punjabi University Patiala within 2 days of issue of supply order.
14. In case of failure of supply of material as per ordered specification, the University reserve the right to reject the supply order imposition of penalty for it security deposited by firm/supplier.
15. Performance Bank Guarantee (PBG)
In case the total order value of items becomes Rs. 25 lacs or above, 10% of the cost price in the form of Bank Guarantee or FDR pledged in the favor of "The Registrar, Punjabi University, Patiala" is required at the time of installation of the equipment which should remain valid at least during the warranty period plus 3 months.
16. Payment terms
90% payment will be made through Letter of credit/Telegraphic Transfer/Sight Draft, and balance 10% after successful installation/inspection of the equipment at Punjabi University, Patiala, and submission of performance bank guarantee equivalent to 10% of the order value valid for warranty period plus 3 months.
17. Acceptance of Terms and Conditions
Bidders must confirm the acceptance of all the terms and conditions of this tender notice. Any non-acceptance or deviation from the terms and conditions must be clearly mentioned. However, tenderers must note carefully that any conditional offer or any deviation from the terms and conditions of this tender notice may render the quotation liable for rejection.
18. Power supply
The equipment should be quoted only for 220 volts and 50 Hz supply.
19. Duly signed and stamped certificate of at least 5 years comprehensive on-site warranty as per Annexure B should be attached with the technical bid. Successful firm will be required to agree for payment of penalty for exceeding permissible downtime during gurantee/warranty period. CMC/Warranty charges for 6th to 9th year after the expiry of the 5 year warranty period should be quoted as mentioned in Part C of the Technical Specifications. The rates of CMC will be taken into consideration while making rate comparison. The liability of performance of any accessory or consumable supplied as third party item(s)

by the OEM of LC-MS would lie with the bidder only. The bidder must include such items also in the warranty certificate.

20. Country of origin of the quoted item should be mentioned in the offer in case of imported item.

21. Customs Duty or Excise Duty:

Punjabi University Patiala is exempted from the payment of Customs Duty/Excise Duty. CDEC/EDEC with DSIR Certificate will be provided along with the order (if applicable).

22. Service Facility:

Bidder should mention about the service set up in India and how capable they are to provide after sales services.

23. Training:

Should be included in your offer without any extra cost.

24. Banker's details:

Name and address of the banker of your company should be mentioned.

25. Reference of supply:

Name and contacts details of the premier educational Institutes where the quoted equipment has been installed in India should be attached as per Annexure-C during the last 3 years. Copies of at least two purchase orders may be attached (if possible). Punjabi University Patiala reserves the right to inspect the equipment for its actual performance in any of the listed Institute. The list of installations with contact details for the last 3 years must be provided.

26. Arbitration

In the event of failure to carry out the contractual obligations, within the stipulated period or extended period and determination of the contract for any reason, violation of warranties etc. the Punjabi University Patiala shall have the right to carry out the unfinished obligation at the exclusive cost and risk of the bidder/firm, after due notice and the difference so accrued shall be recoverable from the bidder/firm.

26.1 The provision of the Arbitration and Conciliation Act, 1996 or as at the relevant time and of rules framed there under and any statutory modifications thereof shall be deemed to apply and be incorporated in this agreement.

26.2 Upon every or any such reference, the costs of any incidentals to the reference and award(s) respectively shall be at the reasonable discretion of the Arbitrators or in the event of their not agreeing, of the Umpire appointed by them who may determine the amount thereof or direct the same to be fixed as between solicitors and client or as between parties and shall direct by whom and in what manner the same shall be borne and paid.

26.3 Panel of arbitrators will be provided by Punjabi University Patiala out of which the bidder will have to select one.

26.4 The bidder shall have no objection if the officer who has dealt with the case at any stage is nominated as an arbitrator. Further, that one of the arbitrator's shall be Accounts Expert.

26.5 In case of vacancy being caused due to resignation, death or incapacity of the arbitrator(s) to function as such, the same shall be provided in the aforesaid manner and the new arbitrator(s) shall proceed from the stage at which vacancy is caused.

27. Jurisdiction:

The Courts of Patiala alone will have the jurisdiction to try any matter, dispute or difference between the parties arising out of this tender/contract. It is specifically agreed that no Court outside and other than Patiala court shall have jurisdiction in the matter.

28. Force Majuere:

Any failure of omission or commission to carry out the provision of this contract by the supplier shall not give rise to any claim by one party, one against the other, if such failure of omission or commission arises from an act of God; which shall include all acts of natural calamities such as fire, flood, earthquake, hurricane, or any pestilence or from civil strikes, compliance with any statute and/or regulations of the Government, lockouts and strikes, riots, embargoes or from any political or other reason beyond the supplier's control including war (whether declared or not) civil war or stage of insurrection, provided that notice of the occurrence of any event by either party to the other shall be given within two weeks from the date of occurrence of such an event which could be attributed to Force Majuere conditions.

29. Risk & Cost

In the event of failure to carry out the contractual obligations, within the stipulated period or extended period and determination of the contract for any reason, violation of warranties etc. the Punjabi University Patiala shall have the right to carry out the unfinished obligation at the exclusive cost and risk of the bidder/firm, after due notice and the difference so accrued shall be recoverable from the bidder/firm.

30. The material found defective upon opening by the supplier representative in presence of Central stores personnel/indenter of Punjabi University Patiala or not as per tendered specifications will be lifted back at the cost and risk of the supplier. The material lying in the Punjabi University Patiala premises would be at supplier's risk and cost.

31. Liquidated Damages:

In case the firm fails to execute the supply as per the purchase order in whole or in part as per the terms and conditions of PO, Punjabi University Patiala can impose the penalty @1% per week of the undelivered stores, subject to a maximum of 10%. It will also be open to the institute to procure the required item(s) from any other source at the risk and expense of the firm.

32. In case of any clarification regarding tender contact Phone No. **0175-3046310**.

Coordinator,
DST-PURSE Scheme,
Punjabi University,
Patiala.

BIDS EVALUATION PROCEDURE**Technical Bid and Price Bid**

Punjabi University purchase committee will evaluate the technical and financial bids. Decision of the committee would be final and binding on all the tenderers and bidders.

Evaluation of Technical bid

- (i) Before submission of the technical bid, bidders are expected to meet the qualifying criteria (Requirements) as mentioned in the tender document. Bidders failing to meet these criteria or not submitting requisite supporting documents/documentary evidence for supporting the eligibility criteria are liable to be rejected summarily.
- (ii) The technical bids must be complete in all respect and should cover the entire scope of work as stipulated in the tender document.
- (iii) The details of the evaluation of technical bid will be as follows:

WEIGHTAGE SYSTEM		
S. No.	Name and Required specifications of item(s)	Weightage
Total Marks: 70		
1	Resolution at m/z 900 or higher and at scan speed ≥ 12 Hz or 12ms/ms per sec	Max. Marks: 19
1.1	>55,000	19
1.2	40,000 to 55000	12
1.3	<40,000	05
2.	MS/MS sensitivity for 1 pg Reserpine on-column injection (For calculation purpose lower on-column injection will extrapolated accordingly)	Max. Marks: 18
2.1	>5000 : 1	18
2.2	3000 to 5000 : 1	12
2.3	<3000 : 1	05
3.	Mass Accuracy- Internal Calibration	Max. Marks: 14
3.1	<1 ppm	14
3.2	1 ppm to 3 ppm	10
3.3	> 3 ppm	05
4.	TOF Mass Range	Max. Marks: 14
4.1	>35000	14
4.2	15000 to 35000	10
4.3	< 15000	05

5.	Upgradability to Ion Mobility	Max. Marks: 05
5.1	Yes	05
5.2	No	00

Note: The maximum marks for technical evaluation is 70. Tender(s) obtaining more than or equal to 35 marks will be technically qualified and those with marks less than 35 will be rejected.

- (i) The calculation will be based on the evaluation from technical bid (70%) and from price bid (30%) to determine the successful bidder.
- (ii) The total price bid for both Parts A and B of the tender document will be considered for final calculation of marks to determine the successful bidder.
- (ii) The following formula will be applied to determine the lowest bidder. Highest marks obtained in the final calculation (F) will be the lowest bidder.

$$F = [(B_{LOW} / B) \times 30] + T$$

Legends:

B = Current price bid (Total of Parts A and B)

B_{LOW} = Total price bid of the lowest bidder

T = Technical bid score out of 70

F = Final marks

In case of ties after financial opening, L1 will be finalized as per the following:

1. Firm who provides integration of online database within a single window.
2. If point 1 will not be applicable, then the firm that has maximum marks in technical weightage.

CERTIFICATE OF WARRANTY

- i) I/We certify that the warranty shall be for a period of 5 years comprehensive onsite warranty starting from the date of satisfactory installation, commissioning and handing over of the equipment and of the works conducted therewith covered under the supply order in working order. During the warranty period, I/we shall provide free "after sale service" and the replacement of any part(s) of the equipment or rectification of defects of work of the equipment will be free of cost. The replacement of the parts shall be arranged by us, at our own cost and responsibility. We undertake that the above warranty shall begin only from the date of satisfactory and faultless functioning of the equipment for 60 days at Punjabi University Patiala premises. The benefit of change in dates of the warranty period shall be in the interest of the use/your organization.
- ii) During the warranty period, we shall provide at least 5 preventive maintenance visits.
- iii) Uptime Guarantee: During the warranty period, we will be responsible to maintain the equipment in good working conditions for a period 328 days (i.e. 90% uptime) in a block of 365 days.
 - (a) All complaints will be attended by us within 2 weeks of receipt of the complaint in our office.
 - (b) In case there is delay of more than 2 weeks in attending to a complaint from our side then you can count the number of days in excess of the permissible response time in the downtime. The above said response time of 2 weeks for attending to a complaint by us will not be counted in the downtime.
 - (c) Penalty: We shall pay a penalty equivalent to 0.1% of the FOB value of the equipment for every week or part thereof delay in rectifying the defect.

Note: The right to accept the reason (s) for delay and consider reduction or waive off the penalty for the same shall be at the sole discretion of Registrar, Punjabi University Patiala.

- iv) We certify that the equipment being/quoted is the latest model and that spares for the equipment will be available for a period of at least 10 years and we also guarantee that we will keep the organization informed of any update of the equipment over a period of 10 years.
- v) We guarantee that in case we fail to carry out the maintenance within the stipulated period, Punjabi University Patiala reserves the right to get the maintenance work carried out at our risk, cost and responsibility after informing us. All the expenses including excess payment for repairs/maintenance shall be adjusted against the Performance Bank Guarantee. In case the expenses exceed the amount of Performance Bank Guarantee, the same shall be recoverable from us with/without interest in accordance with the circumstances.
- vi) We shall try to repair the equipment at Punjabi University Patiala premises itself. However, the equipment will be taken to our site on our own expenses in case it is not possible to repair the same at Punjabi University Patiala. We shall take the entire responsibility for the safe custody and transportation of the equipment taken out for repairs till the equipment is rehabilitated to the Punjabi University Patiala after repair Any loss of equipment or its accessories under its charge on account of theft, fire or any other reasons shall be at our sole risk and responsibility which will be compensated to Punjabi University Patiala for such losses at the FOB/CIF value for the damaged/lost equipment/part, including accessories.
- vii) We undertake to perform calibration after every major repair/breakdown/taking the equipment for repair out of Punjabi University Patiala premises.
- viii) In case of extended warranty, we undertake to carry out annual calibration of the equipment.
- ix) We guarantee that we will supply spare parts if and when required on agreed basis for an agreed price. The agreed basis could be an agreed discount on the published catalogue price.
- x) We guarantee to the effect that before going out of production of spare parts, we will give adequate advance notice to you so that you may undertake to procure the balance of the life time requirements of spare parts.
- xi) We guarantee the entire unit against defects of manufacture, workmanship and poor quality of components.

**Technical Specification for Liquid Chromatography- Mass Spectrometer
(LC-MS)**

High resolution mass spectrometer platform with hybrid mass analyser and separation devices is required for qualitative and quantitative analysis of small molecule, chemical compounds, drugs, environmental compounds, pesticides, metabolomics and proteomic applications. The instrument should also be able to carry out the high resolution mass spectrometry of direct insert samples of small/macromolecular compounds.

PART - A

UPLC

a) **Pump:**

Quaternary gradient pump

Maximum operating pressure 15000 psi or above.

Operating flow rate: 200 μ l/min to 2 ml/min or better with gradient 0.001 mL and Flow rate Accuracy $\pm 1\%$.

Vacuum degassing capability of solvents

b) **Autosampler:**

Capacity: 90 vials of 1ml capacity or higher with glass inserts for low volume (less than 500 μ l) samples

Temperature control 4 to 40°C.

Injection volume range: 0.5 to 50 μ l or better

Carryover: 0.004% or lesser

c) **Column compartment**

To house column of 150 mm or longer with temperature control of 4 to 80 °C with 0.1 °C increment or better.

d) **PDA Detector:**

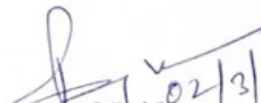
Wavelength Range :190 – 600 nm or better;

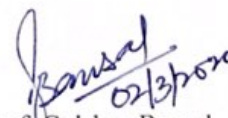
Wavelength Accuracy: ± 1 nm or better;

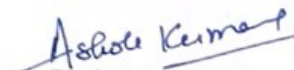
Optical Resolution: 1.2 nm or better;


Flow Cell volume: <1 μ l


All components should be UPLC based and of the same series only, and no HPLC based component should be quoted.


Prof. Raj Kumar
(Outside Expert)


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(Invited Member)

Ionization Source

The equipment must be equipped with an atmospheric pressure ionization (API) interface that includes the source and spraying elements. Dedicated/combined Electro Spray Ionization (ESI), and Atmospheric Pressure Chemical ionization (APCI) sources with positive and negative ionization (should work without breaking the vacuum).

- ESI and APCI flow rate upto 200 $\mu\text{l}/\text{min}$ to 2 ml/min without splitter.
- Syringe pump or better technology for direct infusion of samples should be quoted.
- System should have latest technology of ion focussing to the analyzer
- Desolvation temperature should be 400°C or higher
- The quoted instrument should have isolation valve to allow source and sampling capillary maintenance without venting the system.

Mass analyzer

Quadrupole mass analyzer followed by a collision cell followed by high resolution mass analyzer (Time of Flight or Orbitrap). System should have CID for fragmentation and MS/MS with efficient ion transmission using the latest technology. It should have positive and negative ion modes. The instrument should be capable of performing MS Scanning, MS/MS product ion scanning; and simultaneous MS and MS/MS scanning.

The system should be capable to do both Data dependent and Data Independent analysis. The system should be capable of performing Qualitative and Quantitative analysis with the highest sensitivity, accuracy, precision and reproducibility.

Quadrupole Mass Range: m/z 1200 or better for singly charged ions.

TOF Mass Range: Upto m/z 10,000 m/z or better. In case of orbitrap m/z 6000 or better maintaining high resolution in the same mode

Acquisition rate: 30 spectra per second in case of TOF and 12 Hz or better per second in case of Orbitrap technology over the entire mass range.

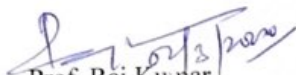
Mass resolution: 35000 FWHM or better in broad range, in case of orbitrap resolution 100,000 FWHM or better.

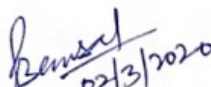
Mass accuracy: \leq 1ppm internal calibration and/or \leq 3 ppm external calibration. The instrument should be capable of internal reference mass correction by infusing calibrant on the run

Sensitivity: 1 pg reserpine on column injection signal/noise ratio 300:1 or better

Dynamic range: 4 order or better

Reference mass introduction: Capable of internal mass reference correction for Ms and MS/MS operation without losing sensitivity must be quoted.


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Nitrogen Gas generator cum compressor:

A suitable imported gas generator with built-in compressor capable of providing nitrogen gas at the required purity (99%), pressure and flow rate for the Mass Spectrometer must be quoted. The compressor should be noise-free.

Helium/Nitrogen/Argon filled cylinders: 2 No.

Helium/Nitrogen/Argon cylinders regulators: 2 No.

Moisture/hydrocarbon trap 1 No must be supplied, if required

Workstation and Printer

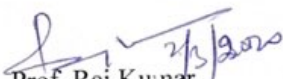
One branded high-end compatible desktop computer with Xeon Processor with latest configuration, 64 GB memory, Suitable video and audio adapters, 512 GB SSD flash drive and HDD of capacity 10 TB or higher, LCD Screen 27" or more, DVD write drive, full size mechanical keyboard, optical mouse, integrated ethernet, and all other interface hardware and software including a laser jet multifunctional printer with high speed USB, wireless connect, upto 26 pages per minute and toner capacity 1200 pages or more for instrument control, data acquisition, data processing and data storage. Vendor may also quote all-in-one computer with the same configuration.

Licence version of windows 10 professional OS and MS-Office professional and driver with original CD


Operating software:

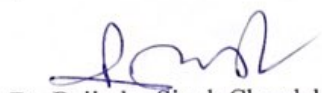
Multitasking suite of analytical applications and instrument management software operating in Microsoft Windows environment. The software should be user friendly & have capabilities to perform the following functions.

- Complete integrated software to control MS, LC and Autosampler.
- Mass Spectrometer Control Software
- System parameter checking and alerts
- LC/MS System Check – automated on-column performance test
- Spectrum Review and Processing
- Auto-calibration/tuning, accurate mass measurements, elemental composition determination, (automatic formula generation by matching true isotopic pattern with parent and fragment ions), MS/MS experiments and quantification
- The software should also have capability for assigning structures by taking fragment ion spectra into account and automatically calculating fragments based on algorithms.
- Automatic library searching against Free and commercially available libraries.


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- Automatic library searching against user defined libraries.
- Should be capable of qualitative, quantitative and characterization with suitable library system
- Pesticide residual analysis, toxin analysis and antibiotic and pharma compound analysis.
- Semi-quantitative reporting of Deconvoluted component concentrations
- NIST database for metabolite, organic compounds, drugs, small molecules, pesticides, etc should be provided.
- Targeted accurate mass screening, for presence/absence/confirmation of large number of compound in complex mixtures. Automated quantification and reporting of acquired samples
- Software for empirical formula calculation.

Power Rating: As per Indian standard

Accessories

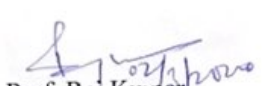
- Additional computer workstation of equivalent or better configuration than the preconfigured computer workstation should be provided for data processing and online connectivity.
- 10 KVA online branded UPS
- Branded ACs 1.5 T : 2 Nos.
- Ultrasonic bath of 5 Litre capacity (ELMA or other comparable vendor): 1 No
- Suitable vibration free table for the entire LC-MS system and workstation

Warranty & Training:

- Warranty for five years for LC, MS and Nitrogen Generator, third party items such as UPS, batteries and printer should cover over all hardware/software and consumables. One preventive maintenance kit for the entire system including UPLC and QTOF should be supplied every year (Second year onwards) during the warranty period.
- Training for small molecules, metabolomics and proteomics should be provided for two operators (small molecules and proteins samples) at Punjabi University, Patiala as per schedule provided by Punjabi University, Patiala
- Onsite technical and operational support for 3 years free of cost as and when required .
- Company should have dedicated application specialist with a proven track record to provide onsite training.


Other Requirements

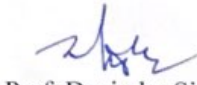
- The quoted hardware should be compatible with proteomics and metabolomic applications.
- System should be upgradable to additional dimension of separation i.e., ion mobility device for isobaric/co-eluting compounds and to detect molecules at low level.


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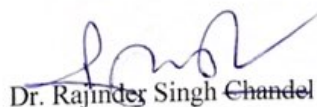

Prof. Davinder Singh
(Invited Member)


- As the HR-MS instrument is an expensive and advanced equipment, it is mandatory that the facility must be multiple-user specific. Also, it is important that the equipment is stable and run for a long time. Thus it is important for the vendors that they must supply appropriate documents specifying their users in higher academic institutions in India.
- Appropriate certificates from the users for the last three year for the similar model quoted must be supplied justifying the stability (if vendor is quoting the latest new model then performance certificates should be given for immediate older model), ease of operation and maintenance requirement such that we have the option to choose the best system in terms of performance and not mere specifications alone.
- A certificate will be required from the original equipment manufacturer that technical support alongwith all essential spares will be provided/made available for at least 10 years after the expiry of one year standard warranty period.
- Vendor should have facility to support the application in case required
- Responsibility of on-site maintenance by the manufacturer for 24x7 operations.
- System installation at the site provided by Punjabi University, Patiala to be done by the vendor. Only room would be provided with adequate water and routine electrical supplies. Any deviation from the routine electrical supplies and furniture requirements, the vendor would have to expedite the same at his own cost. Any civil requirement should be informed in the quote itself.
- The full capabilities of the system have to be demonstrated to the complete satisfaction and specify the pre-installation requirement.
- Operation and maintenance training (service label) should be provided on-site to our staff/students/scientists. Hands-on training course for the users by experts for using the instrument after the installation process is to be completed on a set of dates given by Punjabi University, Patiala.
- Downtime response should be provided within 48 hours and replacement of parts under warranty should be performed by 2 weeks.
- All the spares, electronic board hardware consumable requirements including tubing, nuts, ferrules, cutter etc accessories required for functioning on entire h/w & s/w for the period of 5 years should be quoted rate inclusive.
- IQ and OQ of the complete instrument should be quoted and performed during the installation.
- The order and payment will be placed directly with the OEM and not with the Indian subsidiary and distributor.


Prof. Raj Kumar
(Outside Expert)


Prof. Gulshan Bansal
02/03/2020


Prof. Ashok Malik


Dr. Rajinder Singh Chandel

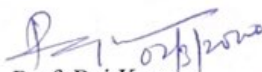

Prof. Davinder Singh
(Invited Member)

PART - B (Essential consumables for LC-MS)

- Sample vials with septa for the autosampler – 500
- Glass inserts for low volume samples as specified above: 200
- Additional subscription of software for advanced data processing/interpretation
- UPLC quality columns as desired below should be provided with guard columns and connectors for each column
 - (i) Columns C-18 (150 x 2.1 mm, 1.7 μ m) – 3 Nos.
 - (ii) Columns C-8 (150 x 2.1 mm, 1.7 μ m) – 1 Nos.
 - (iii) Normal Phase Columns (150 x 2.1 mm, 1.7 μ m) – 1 No
 - (iv) Columns for food and environmental pesticide residue analysis to be quoted - 1 No.
- Solvent and samples filtration kits with requisite filters for mobile phase and sample
- Mobile phase bottles of 500 ml capacity (6 No.)
- Mobile phase tray
- Spare syringes for direct infusion: 10 Nos
- Sufficient branded ultra-shield maintenance batteries for 1 hr backup
- Provide free perpetual license with upgrade for all the software throughout the period of warranty and CMC.

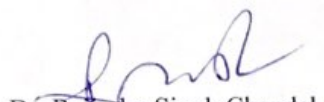
PART - C (Optional Requirements)

- i. Comprehensive maintenance contract (CMC)/year to be quoted for 6th to 9th year.
- ii. Ion mobility add-ons/replacement for Lipidomics applications with complete hardware and softwares requirements.
- iii. APPI source for small molecule applications
- iv. ASAP source for direct MS analysis of solid samples
- v. All necessary softwares, ion source and nanoLC required for proteomics applications such as Sequencing, Protein/Peptide ID, label & label free quantitation should be quoted
- vi. Metabolomics database to be quoted, with MS and MS/MS information.
- vii. Environmental and food samples small molecule analysis software and database.
- viii. Additional accessories required for metabolomics and small molecules should be quoted


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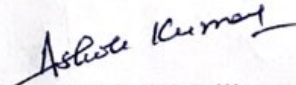

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COORIGENDUM
(March 05, 2020)

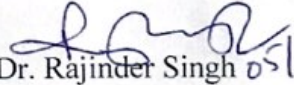
**Technical Specification for Liquid Chromatography- Mass Spectrometer
(LC-MS)**

It is to inform all bidders that a specification "*System should be upgradable to additional dimension of separation i.e., ion mobility device for isobaric/co-eluting compounds and to detect molecules at low level*" specified in "Other Requirements" in Part A of the Technical Specifications for LC-MS should be read as a component of "Optional Requirements" (Part C) of the Technical Specifications. The bidder may respond appropriately in the uploaded compliance sheet. Any non-compliance with respect to this specification will not be considered for deciding technical disqualification of any bidder for the tender.


Prof. Davinder Singh


Prof. Ashok Malik


Prof. Gulshan Bansal


Dr. Rajinder Singh 05/03/2020