



10 August 2023

To Whom It May Concern

**Global Tender for a Micro Motion Analyzer**

This is an RFQ (Request for Quote) for procurement of a Micro Motion Analyzer for Centre for Nano Science and Engineering (CeNSE) at IISc, Bangalore.

CeNSE is a multidisciplinary research department at IISc that houses a 14,000 sq. ft. cleanroom and characterization facility used by more than 50 faculty members from various disciplines at IISc.

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### **Section 1 - Bid Schedule**

1	Tender No	
2	Tender Date	10 August 2023
3	Item Description	Procurement of Micro Motion Analyzer
4	Tender Type	Two bid system (i) Technical Bid (Part A) (ii) Commercial Bid (Part B)
5	Place of tender submission	Chairperson Office First Floor Centre for Nano Science and Engineering Indian Institute of Science, Bangalore 560012
6	Last Date & Time for submission of tender	31 August 2023
7	For further clarification	Dr. Gayathri Pillai Room No: FF05 Centre for Nano Science and Engineering Indian Institute of Science, Bangalore, India 560012. Office: +91-80-2293-3250 E-mail: gpillai@iisc.ac.in



## **Section 2 – Eligibility Criteria**

### **Prequalification criteria:**

1. The Bidder's firm should have existence for a minimum of 3 years. (Enclose Company Registration Certificate)
2. This tender is open to all global Original Equipment Manufacturers (OEM) or their Indian authorized distributor
3. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per -Annexure 4.
4. The Bidder must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere. A declaration to this effect has to be given as per Annexure 3.

### **Section 3 – Terms and Conditions**

#### **A) Submission of Tender:**

1. All documentations in the tender should be in English.
2. Tender should be submitted in two envelopes (two bid system).
  - a. Technical Bid (Part-A) – Technical bid consisting of all technical details and check list for conformance to technical specifications.

The technical proposal should contain a technical compliance table with 5 columns.

    - i. The first column must list the technical requirements, in the order that they are given in the technical requirement below.
    - ii. The second column should provide specifications of the instrument against the requirement. Please provide quantitative responses wherever possible.
    - iii. The third column should describe your compliance with a “Yes” or “No” only. Ensure that the entries in column 2 and column 3 are consistent.
    - iv. The fourth column should state the reasons/explanations/context for deviations, if any.
    - v. The fifth column can contain additional remarks from the OEM. You can use this opportunity to highlight technical features, qualify response of previous columns, or provide additional details, compare your solution with that of your competitors or provide details as requested in the technical requirements table below.
  - b. Commercial Bid (Part-B) – Indicating item wise price for the items mentioned in the technical bid, as per the format of quotation provided in tender, and other commercial terms and conditions.
3. The technical bid and price bid should each be placed in separate sealed covers, superscripting on both the envelopes the tender no. and the due date. Both these sealed covers are to be placed in a bigger cover which should also be sealed and duly superscripted with the Tender No, Tender Description & Due Date.
4. The SEALED COVER superscripting tender number / due date & should reach Chairperson Office, Centre for Nanoscience and Engineering, Indian Institute of Science, Bangalore – 560012, India on or before due date mentioned in the tender notice. In case due date happens to be holiday the tender will be accepted and opened on the next working day. If the quotation cover is not sealed, it will be rejected.
5. All queries are to be addressed to the person identified in “Section 1 – Bid Schedule” of the tender notice.
6. GST/other taxes, levies etc., are to be indicated separately. The BIDDER should mention GST Registration and PAN in the tender document (Indian Bidders only).



7.If price is not quoted in Commercial Bid as per the format provided in tender document the bid is liable to be rejected.

8.The Institute reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the award of contract, without there by incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders.

9.Incomplete bids will be summarily rejected.

10. The technical proposal must include references of 3 previous installations in India. Please provide the names and contact addresses of the referees, so that the committee can contact them independently.

11. The vendor should produce Bill of Entry.

### **B) Cancellation of Tender:**

Notwithstanding anything specified in this tender document, IISc Bangalore, in its sole discretion, unconditionally and without having to assign any reason, reserves the rights:

- a. To accept OR reject lowest tender or any other tender or all the tenders.
- b. To accept any tender in full or in part.
- c. To reject the tender, offer not confirming to the tender terms.

### **C) Validity of the Offer:**

The offer shall be valid 90 Days from the date of opening of the commercial bid.

### **D) Evaluation of Offer:**

1. The technical bid (Part A) will be opened first and evaluated.
2. Bidders meeting the required eligibility criteria as stated in Section 2 of this document shall only be considered for Commercial Bid (Part B) opening. Further, agencies not furnishing the documentary evidence as required will not be considered.
3. Pre- qualification of the bidders shall not imply final acceptance of the Commercial Bid. The agency may be rejected at any point during technical evaluation or during commercial evaluation. The decision in regard to acceptance and / or rejection of any offer in part or full shall be the sole discretion of Purchase Committee IISc Bangalore, and decision in this regard shall be binding on the bidders.
4. The award of contract will be subject to acceptance of the terms and conditions stated in this tender.
5. Any offer which deviates from the vital conditions (as illustrated below) of the tender is liable to be rejected:

- a. Non-submission of complete offers.
  - b. Receipt of bids after due date and time and or by email / fax (unless specified otherwise).
  - c. Receipt of bids in open conditions.
6. In case any BIDDER is silent on any clauses mentioned in these tender documents, Purchase Committee IISc Bangalore shall construe that the BIDDER had accepted the clauses as of the tender and no further claim will be entertained.
7. No revision in the terms and conditions quoted in the offer will be entertained after the last date and time fixed for receipt of tenders.
8. Lowest bid will be calculated based on the total price of all items tendered for Basic equipment along with accessories selected for installation, operation, preprocessing and post-processing, optional items, recommended spares, warranty, and annual maintenance contract.

**E) Pre-requisites:**

The bidder will provide the prerequisite installation requirement of the equipment along with the technical bid.

The instrument parts, spares, accessories, and services for the specific equipment will be provided to CeNSE IISc by the vendor for at least 10 years from the date of installation.

**F) Warranty:**

The complete system is to be under warranty period of minimum 3 years (year wise breakup value should be shown in the commercial bid) including free supply of consumables, spare parts and data analysis software from the date of functional installation. If the instrument is found to be defective, it has to be replaced or rectified at the cost of the bidder within 30 days from the date of receipt of written communications from Purchase Committee IISc, Bangalore. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.

**G) Annual Maintenance Contract:**

Provide yearly cost of AMC for (3 – warranty) years beyond the warranty period. The AMC must satisfy the following:

- i. Provide itemized cost for required/expected spares for operation during the AMC period. This number will be used to estimate the life cycle cost of the tool.

- ii. Cover should include scheduled preventive maintenance and 1 emergency visit per year.
- iii. The emergency visit should be supported with a 24-hour response window.
- iv. In case the OEM is foreign, clarify if maintenance will be done by a trained local engineer (OEM representative within India) or a specialist from abroad.
- v. Cost of AMC must include an itemized list of spares (e.g., maintenance kits) that are essential for preventive maintenance.

#### **H) Purchase Order:**

1. The order will be placed on the bidder whose bid is accepted by IISc based on the terms & conditions mentioned in the tender document.
2. The quantity of the items in tender is only indicative. Purchase Committee IISc, Bangalore reserves the right to increase /decrease the quantity of the items depending on the requirement.
3. If the quality of the product and service provided is not found satisfactory, Purchase Committee IISc, Bangalore reserves the right to cancel or amend the contract.

#### **I) Delivery, Installation and Training:**

Delivery must be C.I.P. Bangalore basis (by Air Freight only).

The bidder shall provide the lead time to delivery, installation and made functional at IISc, Bangalore from the date of receipt of purchase order. The system should be delivered, installed and made functional within 90 days from the date of receipt of purchase order. The supply of the items will be considered as effected only on satisfactory installation and inspection of the system and inspection of all the items and features/capabilities tested by the IISc, Bangalore. After successful installation and inspection, the date of taking over of entire system by the IISc, Bangalore shall be taken as the start of the warranty period. No partial shipment is allowed.

The bidder should also arrange for technical training to the local facility technologists and users.

#### **J) Payment Terms:**

Payment Terms:

The payment will be through a Letter of Credit and the milestone of the payment will be determined after mutual discussions with the successful bidder.

**K) Statutory Variation:**

Any statutory increase in the taxes and duties subsequent to bidder's offer, if it takes place within the original contractual delivery date, will be borne by IISc, Bangalore subject to the claim being supported by documentary evidence. However, if any decrease takes place the advantage will have to be passed on to IISc, Bangalore.

**L) Disputes and Jurisdiction:**

Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Bangalore, India.

**M) General:**

1. All amendments, time extension, clarifications etc., within the period of submission of the tender will be communicated electronically. No extension in the bid due date/time shall be considered on account of delay in receipt of any document(s) by mail.
2. The bidder may furnish any additional information, which is necessary to establish capabilities to successfully complete the envisaged work. It is however, advised not to furnish superfluous information.
3. The bidder may visit the installation site before submission of tender, with prior intimation.
4. Any information furnished by the bidder found to be incorrect, either immediately or at a later date, would render the bidder liable to be debarred from tendering/taking up of work in IISc, Bangalore.



#### **Section 4 - Technical Requirements of Micro Motion Analyzer**

<b>Parameter</b>	<b>Specification Type/Value/Range</b>
Frequency of operation	10Hz-2GHz or wider operation range
Displacement type	Out-of-plane displacement
Vibration measurements	From 10Hz to 2 GHz at least, and with a displacement resolution of 25 fm/ $\sqrt{\text{Hz}}$ resolution.  The resolution must be independent of the magnification of objectives used.  Preferably using Laser Doppler Vibrometer principle.
Objective lens magnification	1X, 10X, 20X, 50X, 100X  These lenses are to be used for interference-based measurements as well.
Working distance	10-45mm
Real-time dynamic data acquisition and analysis	Must be able to perform data acquisition and analysis in frequency domain and time domain. Must support visualization of data for the measurements for Out of Plane vibration by scanning the laser over the structures for full field measurements allowing full field acquisition without moving the sample.
Maximum object velocity	150m/s
Frequency resolution	<10Hz up to 100MHz <50Hz up to 500MHz <150Hz up to 2GHz
Laser	532nm; Class 3R with laser intensity control option to accommodate surfaces with different reflectivity and range of displacement.
Light Source	470 nm
Camera	Full-field progressive scan camera with resolution of 1500x1000 or better
Noise reduction	Must have differential measurement capability. A dual laser set up (reference + measurement laser)
External signal generator	The signal generator should cover the operation frequency range of the motion analyzer and should be able to generate sine, chirp, forward and reverse signal sweeps, etc.

Wafer prober module	Capable of holding substrates up to 200 mm and able to hold the manipulators for electrical drive. > 4 manipulators.
Positioning Stage	High precision positioning stage with a +/- 150 mm (or better) movement with less than 0.5-micron repeatability (useful for stitching the data.)  The system should come with a custom-built active vibration isolation table.
Data Acquisition/ Management System	A workstation with high performance CPU, compatible RAM, hard disk drive and other hardware peripherals
Calibration Standard	Provide a standard substrate to calibrate the instrument for 10-2GHz frequency range. The user should be able to qualify all the structural dynamics measurement features listed in the RFQ.
Software for measurement and analysis	<ul style="list-style-type: none"> <li>• Must be capable of performing single shot and continuous wave measurements.</li> <li>• Data acquisition in time and frequency domain.</li> <li>• Digital filters, signal averaging and real time integration &amp; differentiation in time and frequency domain</li> <li>• 2D scanning to generate mode shapes.</li> <li>• Scanning software with &gt;4 million FFT lines. Programmable FFT resolution</li> <li>• Save the data set and recall it for post measurement data processing.</li> <li>• Software maintenance for at least one year includes providing new releases free of charge for the software provided.</li> <li>• Perpetual license for the software</li> </ul>

- An amplifier that can boost the electrical signal delivered by the internal signal generator. Output of the amplitude in the range of 150-200V is desirable for DC-1MHz or wider frequency range.
- Must operate on 230V, 50Hz supply.

### Upgrades

- Surface topography option
- Spare laser sources (lasers of different wavelengths) and associated optics
- Integrating in-plane measurement capability.



- The vendor can list additional items under optional upgrades.

### **Service**

- All the list of critical spare parts for ten years of operation of the system should be provided and prices should be separately specified.
- Service support for the hardware and software excluding the warranty period will be essential. The mode of maintenance and service support and associated terms and conditions should be specified and separately quoted.
- The warranty for the hardware and software supplied by the supplier should be specified.

### **Training and demonstration**

All the specifications mentioned in the table must be demonstrated in detail by the vendor post instalment of the system at CeNSE IISc. The vendor should also demonstrate frequency and time domain measurements on reference samples to demonstrate (i) measurements in the 10Hz-2GHz frequency range, (ii) prove the resolution and noise limits, and (iii) data acquisition and mode shape analysis. Inability to meet the specification post instalment will become grounds for disqualification of the product.

An acceptance certificate for the system will be provided to the supplier only after successful installation, commissioning, and demonstration of the system. Complete documentation for hardware and software should be included.

Training on the usage of the machine (hardware and software) must be demonstrated by the successful bidder at bidder's cost to the end users at IISc, Bangalore. Vendor should have prior experience of installation and service in India for at least 10 years, and at least 3 experienced agents attending for service in India. We will also independently seek references.

**GAYATHRI PILLAI**  
Assistant Professor

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### **Section 5 - Technical Bid**

The technical bid should furnish all requirements of the tender along with all annexures in this section and submitted to

The Chairperson,  
Attn: Dr. Gayathri Pillai  
Centre for Nano Science and Engineering  
Indian Institute of Science  
Bangalore – 560012, India

**CENTRE FOR NANO SCIENCE AND ENGINEERING**

Indian Institute of Science, Bengaluru 560 012, India

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**Annexure-1:  
Details of the Bidder**

The bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

Details of the Bidder

Sl. No Items Details

1. Name of the Bidder
2. Nature of Bidder (Attach attested copy of Certificate of Incorporation/ Partnership Deed)
3. Registration No/ Trade License, (attach attested copy)
4. Registered Office Address
5. Address for communication
6. Contact person- Name and Designation
7. Telephone No
8. Email ID
9. Website
10. PAN No. (attach copy)
11. GST No. (attach copy)

Signature of the Bidder

Name  
Designation, Seal

Date:

**GAYATHRI PILLAI**  
Assistant Professor

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**Annexure-2:  
Declaration regarding experience**

To,  
The Chairperson,  
Centre for Nanoscience and Engineering,  
Indian Institute of Science,  
Bangalore – 560012, India

Ref: Tender No: XXXXXXXXXX  
Dated: XXXXX

Supply and installation of Micro Motion Analyzer at Multidisciplinary Micro and Nano Systems Lab, CeNSE, IISc Bangalore.

Sir,

I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company / firm has ---- years of experience in supplying and installing -----

(Signature of the Bidder)  
Printed Name  
Designation, Seal Date:



**Annexure-3:  
Declaration regarding track record**

To,  
The Chairperson,  
Centre for Nano Science and Engineering  
Indian Institute of Science,  
Bangalore – 560012, India

Ref: Tender No: XXXXXXXX  
Dated: XXXXX

Supply and installation of Micro Motion Analyzer at Multidisciplinary Micro and Nano Systems Lab, CeNSE, IISc Bangalore.

Sir,  
I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company/ firm is not currently debarred / blacklisted by any Government / Semi Government organizations / institutions in India or abroad. I further certify that I'm competent officer in my company / firm to make this declaration.

Or

I declare the following  
Sl.No Country in which the  
company is Debarred  
/blacklisted / case is  
Pending Blacklisted / debarred by  
Government / Semi  
Government/Organizations  
/Institutions

Reason Since when and  
for how long

(NOTE: In case the company / firm was blacklisted previously, please provide the details regarding period for which the company / firm was blacklisted and the reason/s for the same).

Yours faithfully  
(Signature of the Bidder)  
Name

**GAYATHRI PILLAI**  
Assistant Professor

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Designation, Seal  
Date:

**Annexure – 4:  
Declaration for acceptance of terms and conditions**

To,  
The Chairperson,  
Centre for Nano Science and Engineering  
Indian Institute of Science,  
Bangalore – 560012, India

Ref: Tender No: XXXXXX  
Dated: XXXX

Supply and installation of Micro Motion Analyzer at Multidisciplinary Micro and Nano Systems Lab, CeNSE, IISc Bangalore.

Sir,

I've carefully gone through the Terms & Conditions as mentioned in the above referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I'm an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully,

(Signature of the Bidder)  
Name  
Designation, Seal

Date:





**Annexure – 5:**  
**Details of items quoted:**

- a. Company Name
- b. Product Name
- c. Part / Catalogue number
- d. Product description / main features
- e. Detailed technical specifications
- f. Remarks

Instructions to bidders:

1. Bidder should provide technical specifications of the quoted product/s in detail.
2. Bidder should attach product brochures along with technical bid.
3. Bidders should clearly indicate compliance or non-compliance of the technical specifications provided in the tender document.



### **Section 6 – Commercial Bid**

The commercial bid should be furnished with all requirements of the tender with supporting documents as mentioned under:

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total
1.	Essential items noted in the technical specification				
1.a	... (details of essential items)				
1.b	...				
2.	Optional items noted in the technical specification				
2.a	... (details of essential items)				
2.b	...				
3.	Accessories for operation and installation				
4.	All Consumables, spares and software to be supplied locally				
5.	Warranty (1 years)				
6.	AMC 2 years beyond warranty				
7.	Cost of Insurance and Airfreight				
8.	CIP/CIF IISc, Bengaluru				

Any additional items

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total
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Addressed to

The Chairperson,  
Attn: Dr. Gayathri Pillai  
Centre for Nano Science and Engineering  
Indian Institute of Science  
Bangalore – 560012, India



### **Section 7 – Checklist**

(This should be enclosed with technical bid- Part A)

The following items must be checked before the Bid is submitted:

#### 1. Sealed Envelope “A”: Technical Bid

1. Section 5- Technical Bid (each page signed by the authorized signatory and sealed) with the below annexures:
  - a. Annexure 1: Bidders details
  - b. Annexure 2: Declaration regarding experience
  - c. Annexure 3: Declaration regarding clean track record
  - d. Annexure 4: Declaration for acceptance of terms and conditions
  - e. Annexure 5: Details of items quoted
2. Copy of this tender document duly signed by the authorized signatory on every page and sealed.

#### 2. Sealed Envelop “B”: Commercial Bid

Section 6: Commercial Bid

Your quotation must be submitted in two envelopes: Technical Bid (Envelope A) and Commercial Bid (Envelope B) super scribing on both the envelopes with Tender No. and due date and both of these in sealed covers and put in a bigger cover which should also be sealed and duly super scribed with Tender No., Tender description & Due Date.

Thanking you,  
Gayathri Pillai  
Assistant Professor  
Centre for Nano Science and Engineering  
Indian Institute of Science, Bangalore, India 560012.  
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