**Domestic Tender Notification**

**THIS IS A REQUEST FOR QUOTE (RFQ) FROM THE INDIAN INSTITUTE OF SCIENCE (IISC), BANGALORE, FOR THE SUPPLY OF 3D Surface Optical Profilometer with Micro Indentation**

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|---|---|---|---|
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| 5 | Section 5 | Technical Bid | Annexure 1: Bidder details |
| | | | Annexure 2: Declaration regarding experience of bidder |
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# Section 1 - Bid Schedule

| | | |
|---|---|---|
| 1 | Tender No | ME/ENQ/SPWM/KV/26-27-01 |
| 2 | Tender Date | 17/08/2026 |
| 3 | Item Description | 3D Surface Optical Profilometer with Micro Indentation |
| 4 | Tender Type | Two bid system<br>(i) Technical Bid (Part A)<br>(ii) Commercial Bid (Part B) |
| 5 | Place of tender submission | Department of Mechanical Engineering, Indian Institute of Science, Bangalore - 560012 |
| 6 | Last Date & Time for submission of tender | 07th September 2026 @5.00 P.M |
| 7 | For further clarification | Prof. Koushik Viswanathan Associate Professor,<br>Department of Mechanical Engineering, Indian Institute of Science, Bangalore - 560012 |

# Section 2 – Eligibility Criteria

Prequalification criteria:

1. The Bidder's firm should have been in existence for a minimum of 3 years. (Enclose Company Registration Certificate)
2. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per -Annexure 4.
3. 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.
4. The Bidder should belong to either Class-1 or Class-2 suppliers distinguished by their "local content" as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter. a) Class-1 supplier: Goods and services should have local content of equal to or more than 50%. b) Class-2 supplier: Goods and services should have local content of equal to or more than 20 % and less than 50%.
5. Quote should come only from Indian Original Equipment Manufacturer (OEM) or their Indian authorized distributor.
6. The quotations should be on FOR-IISc Bangalore basis in INR only.
7. Bidders offering imported products will fall under the category of non-local suppliers. They cannot claim themselves as Class-1 local suppliers/Class-2 local suppliers by claiming the services such as transportation, insurance, installation, commissioning, training, and other sales service support like AMC/CMC, etc., as local value addition.
8. Purchase preference as defined by the recent edits to GFR (within the "margin of purchase preference") will be given to the Class-1 supplier.
9. MSMEs can seek an exemption to some qualification criteria. IISc follows GFR2017 for such details.

# 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 envelops (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.

       Technical bid should also contain a list of customers serve in the last 5 years

    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.
       Each line item or model can be quoted separately.

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 The Office of the DEPARTMENT OF Mechanical 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.

## 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 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, 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, annual maintenance contract.

## E) Pre-requisites:

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

## F) Warranty:

The complete system is to be under warranty period of minimum 2 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 IISc, Bangalore. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.

## G) Annual Maintenance Contract:

An annual maintenance contract for a period of at least 2 years post warranty should be provided on completion of warranty period.

## 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. 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, IISc, Bangalore reserves the right to cancel or amend the contract.

## I) Delivery, Installation and Training:

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 of users if required.

Proof of successful installation at any IIT or other reputed national institute must be attached.

## J) Payment Terms:

100% payments (except AMC) will be released after completion delivery and satisfactory installation subject to TDS as per rules. AMC cost (if ordered), after completion of warranty period) will be released on half-yearly basis at the end of each six months subject to satisfactory services. The AMC will be comprehensive. As per GFR no advance payment can be made to authorized Indian distributors, unless an equal amount of bank guarantee is provided.

## 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.

# Section4–Technical Specifications

## 3D Surface Optical Profilometer with Micro Indentation

**General Description and Equipment:** An optical profilometer combined with micro-indentation is an advanced materials characterization setup. It uses a controlled mechanical force to create a micro scale impression on a sample and non-contact chromatic conical profilometer to map and measure the resulting deformation depth and volume in 3D.

**Combined Workflow and Applications of the Equipment:** During the indentation test, a localized load deforms the material surface at a specific micro scale location. Next, topographical scanning is performed, in which the optical profilometer scans the residual indent or scratch without physical contact. Finally, data analysis quantifies pile-up, sink-in effects, exact residual depth, and elastic recovery volume.

The equipment to feature a combination of optical profilometer with micro indentation measurement parameters equal to or better than the following ranges:

**Micro Indentation Technical Ranges**

- Normal Force Range: 3 mN to 20 N
- Force Resolution**:** 1.2µN
- Load Noise floor (rms) 50µN.
- Indenter Tips: Vickers (136° cone) or Spheroconical/Rockwell (e.g., 200 µm radius).
- Max Depth upto 25000µm.
- Loading Rate 0.0005-500N/min.
- Normal Load Sampling 50KHz.
- Data Collection Speed 200KHz.
- Scratch Speed 0.1-300mm/min.
- Area X-Y Motorization 30000mm2.
- Z Manual Approach 140mm.
- * Single Indent Area Function
- • Quantifiable quality check for indenter
- Multifocus image function required

Future Upgradation

- Nano module upgradation required.
- High temperature upgradation for 400°C
- Low temperature upgradation for -40°C

Properties measure: Hardness, scratch cardness, fracture toughness, adhesive, hardness mapping and cohesive properties analysis and friction co-efficient.
The system is also capable of doing 3 point bending test.

**Optical Profilometer Technical Ranges**

- Vertical Measurement Range: 110 µm.
- Vertical Resolution: 1 nm or better.
- Lateral Resolution: 0.8 µm.
- Measuring Priciple: The system should employ 3D non-contact Chromatic Confocal optical technology complient with ISO 25178 and ASTM standard hight shall be determined directly from

the wavelength reflected white light corresponding to each measurement point without relying on focus stacking phase shifting or computational reconstruction algorithm.

- Measurement Mode: 2D and 3D surface scan, 2D profile should be directly scanned without extracting from the 3D surface.
- Large Area measurement: Large-area scans shall be performed using encoded motorized stages without stitching artefacts throughout the stage travel.
- Material Compatibility: The system shall measure transparent, translucent, opaque, reflective, specular, diffusive, polished, rough, dark and multi-material surfaces including metals, polymers, ceramics, composites, glass, biomaterials, semiconductors, silicon wafers, PCBs, solar cells, paper, rocks and minerals without surface preparation.
- Surface Geometry: Planar, Curved, Convex, Concave, Aspherical, Cylindrical, Circularly Symmetric and Off-Axis Components.
- MEASUREMENT & ANALYSIS CAPABILITIES
- The software shall provide complete 2D and 3D surface metrology compliant with ISO and ASTM standards.
- 
- The standard software package shall include, at a minimum:
  - Surface Roughness
  - Surface Texture
  - Step Height
  - Layer Thickness (where applicable)
  - Wear Depth
  - Wear Width
  - Wear Volume
  - Pit Analysis
  - Peak Analysis
  - Valley Analysis
- Future Upgradation: The software shall be upgradeable to support additional advanced analysis functions including contour analysis particle analysis.
- Additional Sensors upgradation upto 25mm is required.
- XY Stage Travel: 200 x 150 mm (<=0.2µm positioning resolution).

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| S.No | Specification for the Optical Profilometer with micro indentation | Essential/Optional |
|---|---|---|
| 1. | Mounting Capability: (1) Dual force modules: Micro and Nano (2) Video microscope (3) 3D Surface Optical Profiler Precision Stages: - Motorized X-Y stage translation with linear encoders: 200 mm x 150 mm (<0.2µm positioning resolution)- Motorized Z translation stage: 100 mm it should Include: Electronic control unit \| Computer with 34 inch IPS display \| Emergency stop system \| Sample vice grip \| Sample top down clamp | Essential |
| 2. | Normal loading up to 20N \| Independent load sensor for feedback-loop control- Z-displacement Encoder \| Depth range: 50mm- Load Cell Calibration Certificate- General Toolkit. | Essential |
| 3. | Computer automated microscope with integrated camera \| Digital resolution: 1600 x 1200- Can accommodate 10x, 20x, objective lenses- Polished polymer sample for positioning calibration included and can also accommodate 5x, 50X and 100X. | Essential |

| S.No | Specification for the Optical Profilometer with micro indentation | Essential/Optional |
|---|---|---|
| 4. | - for optical magnification of up to 800x | Essential |
| 5. | - Berkovich Diamond Indenter Max. force: 40N | Essential |
| 6. | - Vickers Diamond Indenter Max. force: 200N | Essential |
| 7. | - 3D Non-Contact Profilometry Module includes It should include analysis software and data acquisition sensor for up to 2kHz | Essential |
| 8. | - P1-OP130APS1 Standard Point Sensor 110µm A 0.9µm. | |

**Other requirements**

| | | |
|---|---|---|
| 1. | The vendor shall provide product support for a period of at least 12 years from the date of installation | Essential |
| 2. | Trained/expert engineers from the successful bidder's team must demonstrate the functioning and all the features of the instrument and the environmental chamber to the representatives from IISc. The demonstration and training must include all the possible thermal measurements on solid, powder, liquid and gel samples, which will be arranged by IISc. The engineer may be required to make multiple visits (not more than 3 days) for comprehensive training on the instrument, which should be within the scope of the successful bidder.<br>Two sets of operational and maintenance manuals are to be provided and explained during the instrument installation. | Essential |
| 3. | Expert engineer(s) from the vendor team should make **at least one free visit every 6 – 8 months** during the warranty period to check on the calibration state and other maintenance-related matters of the instrument, the environmental chamber and other accessories as applicable. | |
| 4. | The vendor shall attend to the complaints within three (3) days from the date of intimation by the user. | Essential |
| 5. | The safe delivery, unloading and installation of the equipment is in the vendor's scope. These must be done in the presence of experts from the vendor's end and researchers/office staff from IISc. | Essential |
| 6. | The vendor must have a team of trained engineers who can efficiently troubleshoot the supplied machine. The vendor is requested to **provide contacts of trained engineers available, their expertise and experience, along with other bid documents.** | Essential |
| 7. | The vendor must have supplied similar instruments to Centrally Funded Technical Institutes (CFTIs) and/or Central/State Universities in the last five (5) years. A user testimonial with the contact email/phone number of the user(s) must be provided. | Essential |
| 8. | Annual Maintenance Contract (AMC) rates shall be mentioned in the quotation under **Optional item.** | Essential |
| 9. | Any upgradations must be done at IISc campus, and instrument not | |

| | | |
|---|---|---|
| | supposed to take out for any kind of repair or upgradation. | |

## A. Training and demonstration after installation

Training on machine usage (hardware and software) must be demonstrated by the successful bidder at the bidder's cost. The bidder must conduct the training and demonstration at the delivery site at IISc. IISc will arrange the test samples. The demonstration must be conducted for various materials, including reference samples, and in various conditions maintained in the environment control chamber.

# Section 5- Technical Bid

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

The Chair,
Attn: Prof. Koushik Viswanathan Associate Professor,
Department of Mechanical
Engineering, Indian Institute of
Science, Bangalore - 560012

# 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:

## Annexure-2:

Declaration regarding experience

To,
The Chairperson,
Mechanical Engineering
Indian Institute of Science, Bangalore 560012

Ref: Tender No: XXXXXXXXX
Dated: XXXXX

Supply of an 3D surface Optical Profilometer with micro indentation to Mechanical Department, 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 laser sources.

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

# Annexure-3:

Declaration regarding track record

To,
The Chairperson,
Mechanical Engineering
Indian Institute of Science, Bangalore 560012

Ref: Tender No: XXXXXXX
Dated: XXXXX
Supply of a 3D surface Optical Profilometer with micro indentation to Mechanical Department, 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
Designation, Seal

Date:

# Annexure – 4:

Declaration for acceptance of terms and conditions

To,
The Chairperson,
Mechanical Engineering
Indian Institute of Science, Bangalore 560012

Ref: Tender No: XXXXXX
Dated: XXXX

Supply of 3D surface Optical Profilometer with micro indentation to Mechanical Department, 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 (2 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 |
|---|---|---|---|---|---|
| | | | | | |

Addressed to

The Chair,
Attn: Prof. Koushik Viswanathan
Associate Professor,
Department of Mechanical Engineering, Indian Institute of Science, Bangalore - 560012

# 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.**