



Invitation to tender

No. CeNS/2026-27/Proc/Tender/AFM/362

Date: 26th August 2026

The Centre for Nano and Soft Matter Sciences (CeNS) invites bids under the Two-Bid System (Technical Bid and Financial Bid) from eligible Original Equipment Manufacturers (OEMs) or their authorised representatives for the supply, installation, commissioning and training of the following scientific equipment.

Supply, Installation and Commissioning of High-Resolution Atomic Force Microscope

Bidders shall carefully read the complete tender document, technical specifications, eligibility conditions and commercial terms before submitting their bids.

1.	EMD (Earnest Money Deposit / Bid Security)	Rs. 4,00,000/-
2.	Tender Processing Fee	NA
3.	Tender document publication date	26 th August 2026
4.	Bid documents	https://www.cens.res.in/en/tenders
6.	Bid submission start date and time	26 th August 2026
7.	Bid submission end date and time	16 th September 2026 3:00 PM
8.	Technical bid opening date and time	16 th September 2026 4:30 PM

Instructions to Bidders – Submission of Bids

- Bidders shall submit the Technical Bid and Financial/Price Bid separately in hard copy, clearly marked as **“Technical Bid”** and **“Financial/Price Bid”**. The two sealed envelopes shall be placed in one Master Envelope, superscribed with the Tender No. and Due Date in bold letters.
- The Technical Bid shall contain the bidder’s eligibility documents, OEM authorisation, technical literature/brochures, item-wise Technical Compliance statement, warranty and after-sales service commitment, delivery schedule and all other documents specified in this tender.
- The Financial/Price Bid shall be submitted only in the prescribed format. Prices shall not be disclosed anywhere in the Technical Bid.
- Acceptance of Tender Document: The bidder shall sign and affix the seal on every page of the Tender Document, including all annexures and amendments/corrigenda, and submit the duly signed and stamped Tender Document along with the Technical Bid as confirmation of unconditional acceptance of all the terms and conditions.
- All updates, corrigenda/addenda and clarifications relating to the tender, as well as the details of bidders qualifying in the Technical Bid and further stages of the tender process, shall be published only on the CeNS website. Bidders are advised to regularly check the CeNS website for updates and are responsible for noting them.
- The bidder shall consider all corrigenda/addenda issued by CeNS before submission of the bid. The bidder is responsible for the timely and successful submission of the complete bid in hard copy to the Centre.



7. No bid submitted by email, fax or any other mode, or received after the prescribed closing date and time, shall be accepted.
8. The Bids should be addressed to the Administrative Officer, Centre for Nano and Soft Matter Sciences (CeNS), Arkavathi, Survey No.7, Shivanapura, Dasanapura Hobli, Bengaluru - 562162
9. Centre for Nano and Soft Matter Sciences reserves the right to accept/ reject any or all tenders either in part or in full without assigning any reasons.
10. The Tender Document may be accessed from the Centre's website. The bids may be submitted in hard copy as specified under Point 7 above or deposited in the designated tender boxes kept at the Centre for this purpose, on or before the prescribed date and time.

GENERAL TERMS AND CONDITIONS OF TENDER

1. Definitions:

- a. "Purchaser" shall mean the Centre for Nano and Soft Matter Sciences (CeNS), Arkavathi, Survey No. 7, Shivanapura, Dasanapura Hobli, Bengaluru North – 562162, represented by the authorised officer.
- b. "Supplier" / "Bidder" shall mean the OEM or authorised representative whose bid is accepted and with whom the Purchase Order/Contract is placed.
- c. "Purchase Order" shall mean the formal written order issued by CeNS for supply, installation, commissioning and related services in accordance with the accepted bid and the terms of this tender.

2. Receipt and submission of tender: Bids shall be submitted through hardcopy on or before the due date and time specified in the tender schedule. Late bids shall be summarily rejected. Bidders shall submit the Technical Bid and the Financial/Price Bid separately in hard copy, marked as the Technical Bid and the Financial/Price Bid. These two sealed envelopes should be placed in one Master Envelope, superscribed with the "Tender for Supply, Installation and Commissioning of High-Resolution Atomic Force Microscope for CeNS", with the Due Date in Bold Letters.

3. Tender should be addressed to the Administrative Officer, Centre for Nano and Soft Matter Sciences, Arkavathi, Survey No.7, Shivanapura, Dasanapura Hobli, Bengaluru - 562162

4. Validity of the offer: (a) The bid should be valid for a minimum period of 180 days from the date of opening of tender. If the day by which the offer is to remain open falls on a closed holiday, the offer shall remain open for acceptance until the next working day.

Conditional or incomplete bids, bids without required EMD/proof of exemption, and bids submitted through email, fax or any mode other than the prescribed e-procurement portal shall be rejected.

5. The bidder shall be deemed to have examined and accepted all the terms, conditions, specifications, annexures and schedules of this Tender. The complete Tender Document shall form an integral part of the Contract/Purchase Order.
6. The Centre reserves the right to accept or reject any or all tenders either in part or in full, or to split the order without assigning any reasons therefor. It also reserves the right to cancel the bid without assigning any reasons.



7. Opening of the tender: The Technical bid shall be opened on the date of the tender opening. Price bids of only those firms whose offers meet all tender requirements, including compliance with technical specifications, and have passed all tender conditions/technical evaluation, will be considered for opening.
After the opening of the price bids, the detailed comparative statement and the finalisation of the successful bidder will be carried out on an L-1 (lowest price) basis.
8. Award of Contract and delivery: The contract shall be awarded to the successful bidder. The bidder shall state a firm delivery and installation schedule from the date of issue of the Purchase Order. The quoted schedule shall include delivery, installation, commissioning, performance demonstration and training.
9. The supplier shall ensure efficient and prompt after-sales service and availability of spares for at least three years after expiry of the warranty period.
10. Software upgrades pertaining to the supplied unit shall be provided free of cost as and when released by the OEM during the warranty period, and thereafter as specifically committed in the bid.
11. Calibration certificates for relevant sensors, instruments, gauges and display units shall be supplied wherever applicable.
12. Operation and maintenance manuals, troubleshooting procedures, calibration methods, wiring/schematic diagrams, component and spare lists and safety instructions shall be provided in hard copy and soft copy.
13. The supplier shall provide hands-on training to CeNS personnel in operation, software, routine maintenance, troubleshooting and preventive maintenance.
14. Final acceptance shall be based on successful installation, commissioning, demonstration of specified performance and submission of required manuals/certificates.
15. Installation and commissioning shall be carried out at the CeNS campus by trained personnel of the OEM/supplier. The complete functionality of the equipment shall be demonstrated to the satisfaction of CeNS.
16. All consumables, accessories, utilities and manpower required for any pre-dispatch demonstration shall be arranged by the supplier.
17. If required by CeNS, the supplier/OEM shall demonstrate the quoted system at its works before dispatch to establish compliance with the specified technical requirements.
18. EMD shall be dealt with in accordance with the applicable procurement rules and the tender conditions. No interest shall be payable on the EMD.
19. The successful bidder shall furnish performance security, if required by CeNS, in the form and within the period specified in the Purchase Order/Contract.
20. EMD/Bid Security: Rs. 4,00,000/-. Any exemption shall be claimed only with documentary proof as permitted under the applicable Government of India procurement provisions.
21. Failure to satisfy mandatory eligibility conditions may result in rejection at the technical evaluation stage.
22. The OEM shall submit a written commitment for the availability of spares and efficient after-sales service for at least three years after expiry of the warranty/guarantee period.



23. The bidder should have supplied at least three similar units or equivalent models. A list of users/installations with contact particulars shall be furnished.
24. The OEM should have proven expertise in the manufacture and supply of the quoted AFM system and shall provide evidence of installations/users as required in the tender.
25. Only the Original Equipment Manufacturer (OEM) or an authorised representative of the OEM shall quote. Authorisation valid as on the tender date shall be enclosed with the bid.

TECHNICAL BID - TERMS AND CONDITIONS

1. The bidder should attach the point-by-point technical specification provided in Annexure-I of the tender document (with additional remarks if any) along with the Technical Bid.
2. Vendor qualification criteria:
 - (a) Original Equipment Manufacturer (OEM) or authorised representatives of OEM only can quote for this tender. The vendor should submit an authorisation letter from the OEM, valid on the tender date, along with the quotation.
 - (b) The OEM should have proven expertise in the manufacture and supply of the item.
 - (c) The bidder should have supplied at least 03 or more similar units or equivalent models.
 - (d) It is essential that the manufacturer provide the list of users of the equipment with contact particulars.
 - (e) OEM is required to submit a letter of commitment at the time of quote for the supply of spares and also for efficient and prompt after-sales service of the equipment for a minimum period of 3 years after the guarantee/warranty period under mutually agreed terms and conditions.
 - (f) Failure to meet any of the above vendor qualification criteria may lead to the disqualification of the tender at the technical evaluation stage itself, and the vendor's quotation may not be considered for procurement.
3. CeNS shall constitute a Technical Evaluation Committee for the evaluation of the Technical Bids. Only bidders who meet all essential eligibility criteria and comply with the mandatory technical requirements specified in the Tender Document shall be considered technically qualified and eligible for the opening of their Financial Bids. The decision of the Technical Evaluation Committee in this regard shall be final.
4. The bidder shall sign and affix the seal on every page of the Tender Document, including all annexures and amendments/corrigenda, and submit the duly signed and stamped Tender Document along with the Technical Bid as confirmation of unconditional acceptance of all the terms and conditions.
5. Pre-dispatch inspection
 - (a) The manufacturer/supplier of the unit shall demonstrate, if required, at their works during pre-dispatch inspection by CeNS personnel and shall satisfy all the technical specifications as described in the tender document.
 - (b) The manufacturer /supplier of the unit shall demonstrate the features as provided in
 - (c) Annexure-I (Scope of supply work).



(d) All the consumables and raw materials required for the above demonstration should be arranged by the tenderer.

(e) All the utilities and manpower required for the demonstration shall be arranged by the supplier only.

6. Acceptance criteria:

(a) The manufacturer/supplier's trained engineer should carry out installation and commissioning of the unit at the CeNS Campus.

(b) The entire functionality of the equipment according to the specifications should be demonstrated at the CeNS campus

(c) The manufacturer/supplier of the unit shall demonstrate the features as specified in

(d) However, infrastructure for the demo will be arranged by CeNS.

7. **PATENT RIGHTS:** The Supplier shall indemnify CeNS against all third-party claims of infringement of patent, trademark or industrial design rights, copyright arising from use of the Goods or any part thereof in India.

8. **Training:** The manufacturer shall impart training in the complete unit's operation and preventive/breakdown maintenance, including sub-parts, during installation to CeNS personnel at CeNS.

9. Utilities/Infrastructure for installation:

(a) The supplier shall indicate all the required utilities/infrastructure such as power, water, gas, etc including power backup requirements.

(b) Supplier shall provide the overall dimensions of the Unit, including the floor area and height of the site or building, as well as any foundation details necessary to accommodate the Unit.

(c) The operating environment for the Unit, including temperature and humidity control, anti- vibration, EMI, EMC, etc., should be indicated.

(d) If any additional charges are payable for Installation and Commissioning, the same should be included in the total cost of the stores as per the price schedule (BOQ).

10. **Manuals, software and other drawings, etc.:** The following documents (in English) shall be provided along with the Unit in both hardcopy and softcopy forms:

(a) Operation and maintenance manuals, troubleshooting procedures, calibration methods, wiring and other schematic diagrams, a list of components, spares and accessories.

(b) If there are any bought-out systems and components, manuals should be provided in hardcopy and softcopy forms for the same.

(c) Calibration certificates for sensors, instruments, gauges, display units, etc. must be provided.

(d) Software upgrades pertaining to the supplied Unit should be provided free of cost as and when new versions are released by the OEM.

(e) A safety and security instruction manual should be provided.

11. **After-sales service:** The supplier shall guarantee efficient and prompt after-sales service, including the supply of the spares, for a minimum period of 3 years after the guarantee/warranty period under mutually agreed terms and conditions.

12. Optional items: All bought-out sub-systems and components (optional items), if any, should be of reputed make conforming to international standards. Make and details of all bought-out sub-systems and components shall be specified
13. Test certificate: Wherever required, the Test Certificate should be sent along with the relevant dispatch documents.
14. Delivery/ time schedule: The offer shall be accompanied by a detailed delivery time schedule showing the individual time schedule required for submission of initial equipment layout drawings, foundation drawings, along with load data, main equipment and sub-assembly drawing, shipment schedule of the equipment as well as the time for installation, commissioning and performance tests.
15. Packing: The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit. To maintain the safety of the equipment, we prefer wooden crating with adequate cushioning inside for the transport of any goods. The material has to be dispatched with International standard packing to withstand rigours and to avoid any transit damage.
16. Packing Instructions: Each package will be marked on three sides with proper paint/indelible ink, the following:
 - Purchaser Name & Address
 - Item Nomenclature
 - Order/Contract No.
 - Country of Origin of Goods
 - Packing list reference number
17. Insurance: The Goods supplied under the Contract shall be fully insured in Indian Rupees against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery.

For delivery of goods at the purchaser's premises, the insurance shall be obtained by the Supplier in an amount equal to 110% of the value of the goods from "Warehouse to warehouse" (final destinations) on "All Risks" basis, including War Risks and Strikes. The insurance shall be valid for a period of not less than 1 year after dispatch or until installation and commissioning of the stores, whichever is later.
18. Liquidated damages (LD): As time is the essence of the contract, the work period mentioned in the Service Order should be strictly adhered to. Otherwise, the LD clause will be applicable /enforced. If the supplier fails to provide the services mentioned in the order within the stipulated period, CeNS shall, without prejudice to any other right or remedy available in law, levy a penalty for such delay by way of liquidated damages, at 0.5% per week of delay or part thereof, subject to a maximum of 10% of the contract value. Such LD will be deducted from any amount due or which may become due to the supplier.
19. Order acceptance: The successful bidder, on award of the contract/order, must send the contract/order acceptance in writing, within 15 days of the award of the contract.



20. Incoterms: DDP Centre for Nano and Soft Matter Sciences, Bangalore.

Note: The responsibility for paying the customs, insurance, and delivery till the Centre would rest with the supplier

21. Award of contract: CeNS reserves the right at the time of award of Contract to increase or decrease the quantity of items specified in the Schedule of Requirements without any change in price or other terms and conditions.

22. Corrupt or Fraudulent Practices: CeNS requires that the bidders who wish to bid for this project have highest standards of ethics. CeNS will reject a bid if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices while competing for this contract. CeNS may declare a vendor ineligible, either indefinitely or for a stated duration, to be awarded a contract if it is determined at any time that the vendor has engaged in corrupt and fraudulent practices during the execution of the contract.

23. Interpretation of the clauses in the Tender Document/Contract Document: In case of any ambiguity/dispute in the interpretation of any of the clauses in this Tender Document, CeNS's and its authorised legal counsel's interpretation of the clauses shall be final and binding on all parties.

24. All disputes are subject to "Bangalore Jurisdiction" only. The decisions of the Centre in all respects shall be final and binding on all.

25. Arbitration: In case of a dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or differences shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules thereunder and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to arbitrator appointed by the CeNS. The award of the arbitrator so appointed shall be final, conclusive and binding on all parties to this order.

The venue of the arbitration shall be the place from which the purchase order/contract is issued. Notwithstanding any reference to arbitration herein, the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree.

COMMERCIAL BID/PRICE BID

1. Price must be quoted strictly in the Price Bid Format attached herewith as "Annexure XIII" (Financial Bid)
2. Prices may be quoted according to the units indicated in the annexed tender form as the total of all essential items, while all optional items may be quoted separately (each optional item's price must be indicated).
3. The price should be indicated on unit basis only. No unilateral price revision will be admissible.
4. Terms of payment: The payment in INR shall be made through NEFT/RTGS after delivery and successful installation of the item
5. For Imported Items: 80% of the payment shall be made through an irrevocable Letter of Credit against submission of complete and acceptable shipping documents. The remaining 20% shall be released after successful installation and acceptance of the equipment by CeNS and submission of Performance Security equivalent to 3% of the Purchase Order value.
6. For Indigenous/Local Supply: 100% payment shall be released after complete supply, successful installation, commissioning and acceptance of the equipment by CeNS, subject to submission of Performance Security equivalent to 3% of the Purchase Order value.



7. Partial shipment / Partial delivery of material will not be accepted in any case. Requests for payment for such partial shipments or staggered payments will also not be entertained.
8. Duties, Taxes where legally leviable and intended to be claimed should be distinctly shown in the Tender.
9. Duty Exemption: Please note that the Purchaser is eligible for concessional Customs Duty under the Govt. of India Notification No. 11/280/1993-TU-V dated 28 April 2022
10. In case any of the subheads are included in the total cost, the same should be specified.
11. Any optional item indicated in techno-commercial bids must be priced separately.
12. Currency in which the price is quoted must clearly be mentioned. Applicable PAN, GST, and MSME certificates, etc., should be enclosed.
13. Annual Maintenance Contract (AMC)
 - a. The bidder shall quote the annual AMC charges for three (3) years after expiry of the warranty period for the complete AFM system supplied under the Purchase Order.
 - b. The details of AMC service should be given in technical bid
 - c. The AMC charges per year should be quoted separately in the Financial Bid.
 - d. For the purpose of financial evaluation and determination of the L1 bidder, the total AMC charges for three years shall be added to the final price of the AFM system and other mandatory components/services quoted by the bidder.
14. The evaluated bid price for determining L1 shall therefore be calculated as:
Evaluated Bid Price = Final Price of Complete AFM System + Total AMC Charges for 3 Years
15. The AMC shall commence immediately after expiry of the warranty period and shall be for a period of three years, subject to the requirements and satisfactory performance of the equipment.
16. The AMC charges shall be paid annually or half-yearly, as decided by CeNS, from the date of commencement of the AMC, against satisfactory provision of services and submission of the invoice.
17. The AMC shall cover preventive maintenance, breakdown maintenance, service visits, labour and technical support as specified in the AMC scope. The bidder shall clearly indicate any exclusions, if applicable
18. Discount: Special discount for educational institutions (if any) shall be mentioned in the price bid.



Technical specifications for High Resolution Atomic Force Microscope

Purpose: A state-of-the-art and cutting-edge technology, a fully automated high-resolution Atomic Force Microscope (AFM) equipped with multi-mode functions for imaging and spectroscopy in both air and liquid environments.

The following are the detailed technical specifications of the required system. The vendor must provide complete information as required in various sections/modes for proper evaluation of the system. The statements in the compliance sheet shall be supported by relevant documents and/or brochures.

SYSTEM REQUIREMENT

The AFM system should be compatible to carry out the characterization of soft and hard thin films/surfaces, Fibres, Polymer samples, Nanomaterials, Semiconductor samples, Piezoelectric samples, Magnetic samples, Ferroelectric samples, Microelectronics samples, and biological samples in liquid medium etc.

The equipment provided should be a complete system inclusive of all necessary computers, software, hardware, and accessories for the specified imaging modes.

1. Scanner Specifications:

- (a) The scanner should be a Flexure based decoupled X, Y and Z scanner or a Piezoelectric tube-based scanner for imaging. However, tube-based scanners are also acceptable.
- (b) X, Y and Z piezo axis should be equipped with integrated position sensors for seamless closed-loop operation, and it must be able to operate in both in open-loop and closed-loop mode.
- (c) Tip scanning/~~sample scanning~~ or a combination of both tip & sample scanning systems are acceptable.
- (d) XY scanner range with closed-loop feedback control: 90-micron x 90-micron or more with XY sensor noise should be less than 150 pm average deviation (ADev) or rms in a 0.1Hz to 1kHz bandwidth at the centre of the scanner range.
- (e) Z scanner with closed-loop feedback control: 10-micron or more with Z sensor noise and height noise should be <35 pm and <50 pm average deviation (ADev) or rms respectively in a 0.1Hz to 1kHz bandwidth at the centre of the scanner range.
- (f) The system should demonstrate atomic lattice resolution in AC mode or contact mode imaging using the offered large scan-range scanner (mentioned above) in closed loop. It should allow large survey scans with the ability to zoom-in to get high resolution images at a region of interest.
- (g) Scanner noise specifications and representative atomic resolution imaging examples must be available for inspection in publicly available brochures, datasheets or websites. The scanner must be compatible with all supplied scan modes.

2. Laser and Cantilever

- (a) **Laser source:** The instrument should use LD/ low-coherence SLD as laser source.
- (b) **Laser and Photodetector Alignment:** Laser spot positioning on cantilever and photo detector centering must be motorized, software controlled and automated. Manual adjustment of laser and photo detector is not acceptable.
- (c) **Laser spot size:** System should also support usage of small cantilevers with the laser spot size at cantilever must be 10 μ m or smaller.

- (d) **Surface engagement:** System must allow software-controlled automated cantilever approach using motorized Z.
- (e) **Cantilever mounting:** The mounting of cantilever should be user-friendly. The cantilever holder should be compatible to the wide range of other commercially available cantilevers. System should have an option to mount pre-mounted cantilevers.
- (f) **Cantilever Types:** Appropriate cantilevers should be provided for all operating modes, with the number of probes specified as follows:
- Contact mode/LFM/Force spectroscopy/Force volume: 30 probes (pre-mounted probes)
 - Tapping mode/Phase imaging/Loss tangent mapping: 40 probes (pre-mounted probes)
 - High frequency probes: 20 probes (pre-mounted probes)
 - Electrical probes: 30 Pt/Ir or Ti/Ir coated probes + 5 conducting diamond probes
 - Magnetic probes: 30 probes

The detailed technical specifications of all the tips/probes should be provided.

3. Motorized stages and sample size

- (a) System must come with a motorized XY Stage and motorized Z stage & motorized focus stage with automated tip approach.
- (b) System must include a sample chuck of at least 200 mm in diameter with travel range of at least 150 mm x 180 mm with a minimum step size of <500 nm. The maximum stage velocity must be at least 40 mm/sec.
- (c) The chuck must also include 8 or more magnetic mounting points for conveniently mounting samples prepared on standard 10-15 mm diameter AFM discs.
- (d) Motorized Z stage with stage position repeatability better than 1 micron and a Z travel range of at least 35 mm. The stage must be capable of accommodating samples up to 35 mm in thickness.
- (e) The XY motorized stage must support software-controlled and fully programmable multi-site data acquisition. It should also include an automatic stitching function to enable large-area scanning beyond the physical limits of the XY scanner.

4. Modes of Operation: The system must include the following scanning modes:

- (a) Contact mode
- (b) Lateral force microscopy (LFM)
- (c) Force spectroscopy / Force curves
- (d) Force volume / mapping mode
- (e) Cantilever nanoindentation
- (f) Tapping mode
- (g) Phase imaging
- (h) Loss tangent imaging
- (i) Force modulation microscopy
- (j) Auto-optimisation Mode: The software must include a feature that automatically optimizes AFM topography acquisition parameters—such as set-point, scan rate, and feedback gains—based on fast force-distance curves. It must be capable of adjusting and controlling feedback parameters in real time to ensure high-quality imaging.

- (k) Two frequency mode / Multi frequency Mode - Amplitude and phase response at a second frequency to provide useful additional image contrast while the primary topographic feedback loop runs at the fundamental frequency. To optimize signal-to-noise, the second frequency must be driven simultaneously along with the fundamental resonance.
- (l) Magnetic force microscopy (MFM)
- (m) Electrostatic force microscopy (EFM)
- (n) Kelvin probe force microscopy (KPFM)
- (o) Piezo response microscopy (PFM):
- Vertical PFM
 - Lateral PFM
 - Vector PFM
 - PFM spectroscopy
 - PFM domain switching and lithography
 - Resonance Tracking PFM: System must include the ability to track a changing contact resonance frequency during operating modes in piezoresponse force microscopy. System should use in-built lock-in amplifiers and the same AFM software for resonance tracking PFM mode. Use of external lock-in amplifiers & third-party software for tracking resonance is not acceptable.
- (p) Conductive AFM with advanced capabilities: The system should allow conductive measurements while scanning as well as IV curves at user specified locations. The current sensing range should be 10 pA to 10 nA. It should simultaneously monitor current in two separate gains stages of 1 pA/V and 1 nA/V sensitivities. The software should allow user-specified wave forms for I/V spectroscopy (square, sine, triangle, pulse, or user defined). Two or more channels must be acquired simultaneously so that there is no need to withdraw and switch the stages when the current saturates in the higher gain stage.
- (q) Nanolithography / Nanomanipulation capabilities with complete software control: Importing free vector objects and images and real time drawing by mouse.
- (r) Liquid cell: Must include fluid cell with all required accessories like compatible cantilever holder, O-rings etc.
- (s) Additional Modes: Inclusion of Scanning Tunnelling Microscopy (STM) is preferred, while alternative techniques or modes are also acceptable provided the system demonstrates atomic-level resolution on conducting samples such as HOPG or MoS₂, accompanied by IV curve measurements.

5. System Optics

- (a) AFM scanning cantilever/probe and surface should be viewable on axis in real time via Direct Optical Video Access by CCD/COMS with 20x objective.
- (b) The Field -Of -View (FOV) and zoom/magnification must be software - controlled and cover the range from 840 x 630 nm with optical resolution of 1.5 nm or better.
- (c) The optics must have software-controlled white LED illumination.
- (d) Systems having both top view and side view camera with motorized focus and digital zoom will be preferred.

6. System Controller



- (a) System must use 24-bit digital-to-analog converters (DACs) in order to generate the XY and Z piezo scan signals.
- (b) The software should automatically recognize the Hardware and configures with the software appropriately.
- (c) Detector/Optical bandwidth must be 7 MHz or more.
- (d) The data acquisition system must be capable of recording individual image sizes of 8000 x 8000 pixels or greater.
- (e) System must use 4 channels of integrated in-built Lock-in amplifiers.
- (f) System must be capable of high speed closed-loop imaging at 40 Hz or more in both contact and AC mode. In particular, it must support 90-100 μm (or more) scan sizes at >2 Hz, and 5 μm scan sizes (or more) at >40 Hz in both contact and AC mode, with no loss in image resolution for typical samples (< 50 nm topography). The above specification if compliant should be supported by appropriate data.
- (g) System must include a feature that automatically calibrates the cantilever sensitivity (deflection sensitivity and amplitude sensitivity) and spring constant by simply selecting the probe type. To avoid tip damage, at no point during the calibration may the tip touch the sample. The feature must actually calibrate the cantilever.
- (h) The data acquisition software must have built-in macros which should allow to set up and run a sequence of measurements unattended while automatically varying parameters (like imaging same area at different bias etc) – and without writing any code.
- (i) All controllers supplied must carry valid electrical safety certifications including Compliance with international standards like ISO, CE marking, and RoHS.

7. Data acquisition and image processing software

- (a) Control and analysis must be user-programmable natively in an entirely open-source software programming language. Open source preferable but proprietary software with all users desired features to be made available and guaranteed free updates should be available for lifetime and compatible with the prevailing operating system.
- (b) AFM control software environment must include 3D rendering technology for advanced image display. This feature must allow the user to generate, display and visualize 3D real-time scan images, as well as off-line processing.
- (c) The software must allow user-specified wave forms for electrical modes like I/V spectroscopy etc (square, sine, triangle, pulse, or user defined).
- (d) The user must be able to simultaneously perform data analysis using the built-in post-processing software functions, while continuing to monitor (in clear view) the real-time imaging process.
- (e) The software must provide functionality to export raw data and images into standard formats, including text/ASCII and CSV, for height profiles, force curves, IV curves, and related measurements.

8. Computer with Monitor

- (a) The system must have AFM controller compatible with latest version high performance computer with Windows 11 operating system.
- (b) 30" or better sized monitor, sufficient number of USB ports (at least 4), DVD RW, Mouse, Keyboard, etc.
- (c) Best suitable latest generation multicore processor and 16 GB RAM or better with 1 TB hard disc space.

- (d) The computer must also come with appropriately equipped graphics card and network ports / protocols to facilitate easy transfer of data from lab to office and vice versa. Appropriate cables and power cables must also be provided.

9. Environmental requirements, installation and training

- (ii) Vibration isolation: The system must include sealed acoustic enclosure for isolating light and acoustic noise along with vibration isolation table suitable for the system performance and specification to cancel out all floor vibrations.
- (iii) Warranty and Support: Comprehensive warranty for a minimum period of 1 year on all parts and labour. 3 years AMC after expiry of warranty should be offered.
- (iv) Installation and Training to be done at site by factory trained engineers. Training must cover all aspects of AFM operation and troubleshooting and for every specialized mode of operation. Periodic training sessions to be provided to users upon installation.
- (v) Supporting tools - General supporting tools for operation and maintenance of AFM system must be included along with calibration samples.
- (vi) Necessary manuals (in digital form) for operation of the system, software operation manual, and application manuals etc should be provided along with the system.
- (vii) System in its present form should be upgradable in future to include other modules and optional attachments from time to time.
- (viii) The power requirement, environmental/room requirements like temperature, humidity, room vibration levels etc for the proper functioning of the instrument should be provided by the vendor before installation.
- (ix) The vendor must provide detailed information on all safety features, including laser safety specifications, laser classification, and information on interlock systems.

Optional items

10. Additional Modules which must be offered separately: These will be purchased only if the price falls within the available budget. However, the vendors must state/certify that the AFM system provided will be compatible with these attachments in case these are purchased separately now or in the future and the priced offer should be made including the price of these optional modules / capabilities.

- (a) **Quantitative Nanomechanical Mapping mode:** Fast force mapping of topographical and real-time mapping of quantitative Nano mechanical properties such as elastic modulus, hardness, and adhesion of the sample. Software must have a variety of analysis models like Hertz/Sneddon and Derjaguin-Muller-Toporov (DMT) models, Johnson-Kendall-Roberts (JKR) and Oliver Pharr models etc., as no single model can correctly apply to all samples.
- (t) **Advanced Kelvin probe force microscopy (KPFM) modes:**
- Single pass KPFM
 - Sideband KPFM or Peak Force KPFM
 - Heterodyne KPFM
- (b) **High Voltage set-up for PFM:** A dedicated high voltage up to 150 V (both AC and DC bias) module for tip or sample bias to enable measurements on materials with weak piezoelectric response should be offered. The

high voltage module must provide necessary safety features for safe and easy operation. It should allow high voltage for both AC and DC bias. Only DC bias option will be rejected.

- (c) **Heating stage:** Heating stage with temperature ranges from ambient to 250 degrees with 0.1°C stability. The temperature of the stage should be able to control directly from the AFM software which should allow custom temperature profiles to be run during imaging experiments. There should be option to purge gas to the heating stage to minimize the oxidation while heating.
- (d) **Variable Magnetic Field module:** System should include an accessory that allows application of a variable magnetic field parallel to the sample plane. Field strength capable of reaching $\pm 0.8T$ ($\pm 8000G$) with Maximum field ramp: 7000 G/minute. An integrated sensor must measure the field strength near the sample with a resolution of $\sim 1G$ and the field strength should be software controlled. During steady state operation, the device should not generate heat, even at the maximum field strength. The module should be based on a permanent magnet (not an electro-magnet) so that no cooling of the magnet is required. This module should include capabilities for both in-plane and out of plane operation. The out of plane magnetic fields should be possible just by the inclusion of required pole pieces which should allow field ranges of approximately ± 1200 Gauss in a bipolar configuration. A handheld gaussmeter for measuring fields also should be provided for measuring actual magnetic field for Out-of-plane field.
- (e) **Electrochemical Cell (EC-AFM):** Electrochemical cell assembly should consist of a PEEK fluid cell assembly or better with working and reference electrodes along with an all-PEEK cantilever holder. Should also include accessories like Electrical junction box with connections and programmable jumpers to interface with customer provided potentiostat.

11. Future upgradability: System must have future upgradability option to the below options/accessories:

- a. **Probe station:** The probe station should consist of two tungsten needle probes that can be independently and accurately positioned on the sample with micromanipulators. The AFM's cantilever can serve as another electrical probe which allows for in-situ two-point and three-point probe electrical measurements.
- b. **Stretch-stage:** The high-strain, high-travel manual stretching stage should provide two axis stress control of tensile loaded samples and allows control of the sample image region under different loads.
- c. **Scanning Capacitance Microscopy (SCM)**
- d. **Time dependent dielectric breakdown measurements option:** A dedicated high-voltage module up to at least 150 V (both AC and DC voltages) for tip or sample bias required to enable the electrical measurements specially for dielectric breakdown measurements.
- e. **Photo-thermal excitation mode:** The system must include photothermal cantilever excitation mode with a drive frequency up to at least 7 MHz. The focal plane and cantilever plane must be parallel to allow simple spot positioning. Spot positioning must be motorized and under software control, with the spot location being controlled and aligned on cantilever with a single mouse click. Equivalent techniques may also be accepted, provided they are closely comparable in principle and not fundamentally different.

Declaration by the Vendor

(To be provided in the following format in their letterhead)

I/We, the undersigned, declare that we have read and reviewed all the terms and conditions of the tender document to which we have affixed our signatures and submitted under proper authorisation.

We certify that all terms and conditions of the tender document are fully acceptable to us, and we will adhere to them.

We agree that the Tender Document shall form an integral part of the Contract/Purchase Order.

We have not included any printed conditions that go beyond the scope of this tender.

Furthermore, we certify that neither I/we nor our firm has any objections to signing the contract if we are awarded the opportunity to carry out the work associated with this tender.

Place: _____

Signature of the Bidder

Date: _____

Name & Address of the Bidder with Office Seal

TECHNICAL COMPLIANCE STATEMENT

The bidder shall provide an item-wise compliance statement against every requirement of the technical specification. Any deviation shall be clearly stated. The compliance statement shall be supported by relevant brochures, datasheets or other documentary evidence.

Sl. No	SPECIFICATIONS:	Compliance Yes/No	Reference data sheet with page no.)
	SYSTEM REQUIREMENT		
1.	Scanner Specifications:		
(i)	The scanner should be a Flexure-based decoupled X, Y and Z scanner or a Piezoelectric tube-based scanner for imaging. However, tube-based scanners are also acceptable.		
(ii)	X, Y, and Z piezo axes should be equipped with integrated position sensors for seamless closed-loop operation and must be capable of operating in both open-loop and closed-loop modes.		
(iii)	Tip scanning/ sample scanning or a combination of both tip & sample scanning systems is acceptable.		
(iv)	XY scanner range with closed-loop feedback control: 90-micron x 90-micron or more, with XY sensor noise should be less than 150 pm average deviation (ADev) or rms in a 0.1Hz to 1kHz bandwidth at the centre of the scanner range.		
(v)	Z scanner with closed-loop feedback control: 10-micron or more, with Z sensor noise and height noise should be <35 pm and <50 pm average deviation (ADev) or rms, respectively, in a 0.1Hz to 1kHz bandwidth at the centre of the scanner range.		
(vi)	The system should demonstrate atomic-lattice resolution in AC or contact mode imaging using the offered large-scan-range scanner (mentioned above) in closed loop. It should allow large survey scans with the ability to zoom in to get high-resolution images at a region of interest.		
(vii)	Scanner noise specifications and representative atomic-resolution imaging examples must be available for inspection in publicly available brochures, datasheets, or websites. The scanner must be compatible with all supplied scan modes.		
2.	Laser and Cantilever		
(i)	Laser source: The instrument should use LD/ low-coherence SLD as laser source.		
(ii)	Laser and Photodetector Alignment: Laser spot positioning on cantilever and photo detector centering must be motorized, software controlled and automated. Manual adjustment of laser and photo detector is not acceptable.		
(iii)	Laser spot size: System should also support usage of small cantilevers with the laser spot size at cantilever must be 10 mm or smaller.		
(iv)	Surface engagement: System must allow software-controlled automated cantilever approach using motorized Z.		
(v)	Cantilever mounting: The mounting of cantilever should be user-friendly. The cantilever holder should be compatible to the wide range of other commercially available cantilevers. System should have an option to mount pre-mounted cantilevers.		
(vi)	Cantilever Types: Appropriate cantilevers should be provided for all operating modes, with the number of probes specified as follows: Contact mode/LFM/Force spectroscopy/Force volume: 30 probes (pre-mounted probes) Tapping mode/Phase imaging/Loss tangent mapping: 40 probes (pre-mounted probes) High frequency probes: 20 probes (pre-mounted probes) Electrical probes: 30 Pt/Ir or Ti/Ir coated probes + 5 conducting diamond probes Magnetic probes: 30 probes The detailed technical specifications of all the tips/probes should be provided.		
3.	Motorized stages and sample size		
(i)	System must come with a motorized XY Stage and motorized Z stage & motorized focus stage with automated tip approach.		
(ii)	System must include a sample chuck of at least 200 mm in diameter with travel range of at least 150 mm x 180 mm with a minimum step size of <500 nm. The maximum stage velocity must be at least 40 mm/sec.		
(iii)	The chuck must also include 8 or more magnetic mounting points for conveniently mounting samples prepared on standard 10-15 mm diameter AFM discs.		

Sl. No	SPECIFICATIONS:	Compliance Yes/No	Reference data sheet with page no.)
(iv)	Motorized Z stage with stage position repeatability better than 1 micron and a Z travel range of at least 35 mm. The stage must be capable of accommodating samples up to 35 mm in thickness.		
(v)	The XY motorized stage must support software-controlled and fully programmable multi-site data acquisition. It should also include an automatic stitching function to enable large-area scanning beyond the physical limits of the XY scanner.		
4.	Modes of Operation: The system must include the following scanning modes:		
(i)	Contact mode		
(ii)	Lateral force microscopy (LFM)		
(iii)	Force spectroscopy / Force curves		
(iv)	Force volume / mapping mode		
(v)	Cantilever nanoindentation		
(vi)	Tapping mode		
(vii)	Phase imaging		
(viii)	Loss tangent imaging		
(ix)	Force modulation microscopy		
(x)	Auto-optimisation Mode: The software must include a feature that automatically optimizes AFM topography acquisition parameters—such as set-point, scan rate, and feedback gains—based on fast force-distance curves. It must be capable of adjusting and controlling feedback parameters in real time to ensure high-quality imaging.		
(xi)	Two frequency mode / Multi frequency Mode - Amplitude and phase response at a second frequency to provide useful additional image contrast while the primary topographic feedback loop runs at the fundamental frequency. To optimize signal-to-noise, the second frequency must be driven simultaneously along with the fundamental resonance.		
(xii)	Magnetic force microscopy (MFM)		
(xiii)	Electrostatic force microscopy (EFM)		
(xiv)	Kelvin probe force microscopy (KPFM)		
(xv)	Piezo response microscopy (PFM): - Vertical PFM - Lateral PFM - Vector PFM - PFM spectroscopy - PFM domain switching and lithography - Resonance Tracking PFM: System must include the ability to track a changing contact resonance frequency during operating modes in piezoresponse force microscopy. System should use in-built lock-in amplifiers and the same AFM software for resonance tracking PFM mode. Use of external lock-in amplifiers & third-party software for tracking resonance is not acceptable.		
(xvi)	Conductive AFM with advanced capabilities: The system should allow conductive measurements while scanning as well as IV curves at user specified locations. The current sensing range should be 10 pA to 10 mA. It should simultaneously monitor current in two separate gains stages of 1µA/V and 1nA/V sensitivities. The software should allow user-specified wave forms for I/V spectroscopy (square, sine, triangle, pulse, or user defined). Two or more channels must be acquired simultaneously so that there is no need to withdraw and switch the stages when the current saturates in the higher gain stage.		
(xvii)	Nanolithography / Nanomanipulation capabilities with complete software control: Importing free vector objects and images and real time drawing by mouse.		
(xviii)	Liquid cell: Must include fluid cell with all required accessories like compatible cantilever holder, O-rings etc.		
(xix)	Additional Modes: Inclusion of Scanning Tunnelling Microscopy (STM) is preferred, while alternative techniques or modes are also acceptable provided the system demonstrates atomic-level resolution on conducting samples such as HOPG or MoS ₂ , accompanied by IV curve measurements.		
5.	System Optics		
(i)	AFM scanning cantilever/probe and surface should be viewable on axis in real time via Direct Optical Video Access by CCD/COMS with 20x objective.		
(ii)	The Field -Of -View (FOV) and zoom/magnification must be software - controlled and cover the range from 840 x 630 mm with optical resolution of 1.5 mm or better.		
(iii)	The optics must have software-controlled white LED illumination.		

Sl. No	SPECIFICATIONS:	Compliance Yes/No	Reference data sheet with page no.)
(iv)	Systems having both top view and side view camera with motorized focus and digital zoom will be preferred.		
6.	System Controller		
(i)	System must use 24-bit digital-to-analog converters (DACs) in order to generate the XY and Z piezo scan signals.		
(ii)	The software should automatically recognize the Hardware and configures with the software appropriately.		
(iii)	Detector/Optical bandwidth must be 7 MHz or more.		
(iv)	The data acquisition system must be capable of recording individual image sizes of 8000 x 8000 pixels or greater.		
(v)	System must use 4 channels of integrated in-built Lock-in amplifiers.		
(vi)	System must be capable of high speed closed-loop imaging at 40 Hz or more in both contact and AC mode. In particular, it must support 90-100 μm (or more) scan sizes at >2 Hz, and 5 μm scan sizes (or more) at >40 Hz in both contact and AC mode, with no loss in image resolution for typical samples (<50 nm topography). The above specification if compliant should be supported by appropriate data.		
(vii)	System must include a feature that automatically calibrates the cantilever sensitivity (deflection sensitivity and amplitude sensitivity) and spring constant by simply selecting the probe type.. To avoid tip damage, at no point during the calibration may the tip touch the sample. The feature must actually calibrate the cantilever.		
(viii)	The data acquisition software must have built-in macros which should allow to set up and run a sequence of measurements unattended while automatically varying parameters (like imaging same area at different bias etc) – and without writing any code.		
(ix)	All controllers supplied must carry valid electrical safety certifications including Compliance with international standards like ISO, CE marking, and RoHS.		
7.	Data acquisition and image processing software		
(i)	Control and analysis must be user-programmable natively in an entirely open-source software programming language. Open source preferable but proprietary software with all users desired features to be made available and guaranteed free updates should be available for lifetime and compatible with the prevailing operating system.		
(ii)	AFM control software environment must include 3D rendering technology for advanced image display. This feature must allow the user to generate, display and visualize 3D real-time scan images, as well as off-line processing.		
(iii)	The software must allow user-specified wave forms for electrical modes like I/V spectroscopy etc (square, sine, triangle, pulse, or user defined).		
(iv)	The user must be able to simultaneously perform data analysis using the built-in post-processing software functions, while continuing to monitor (in clear view) the real-time imaging process.		
(v)	The software must provide functionality to export raw data and images into standard formats, including text/ASCII and CSV, for height profiles, force curves, IV curves, and related measurements.		
8.	Computer with Monitor		
(i)	The system must have AFM controller compatible with latest version high performance computer with Windows 11 operating system.		
(vi)	30" or better sized monitor, sufficient number of USB ports (at least 4), DVD RW, Mouse, Keyboard, etc.		
(vii)	Best suitable latest generation multicore processor and 16 GB RAM or better with 1 TB hard disc space.		
(viii)	The computer must also come with appropriately equipped graphics card and network ports / protocols to facilitate easy transfer of data from lab to office and vice versa. Appropriate cables and power cables must also be provided.		
9.	Environmental requirements, installation and training		
(i)	Vibration isolation: The system must include sealed acoustic enclosure for isolating light and acoustic noise along with vibration isolation table suitable for the system performance and specification to cancel out all floor vibrations.		

Sl. No	SPECIFICATIONS:	Compliance Yes/No	Reference data sheet with page no.)
(ii)	Warranty and Support: Comprehensive warranty for a minimum period of 1 year on all parts and labour. 3 years AMC after expiry of warranty should be offered.		
(iii)	Installation and Training to be done at site by factory trained engineers. Training must cover all aspects of AFM operation and troubleshooting and for every specialized mode of operation. Periodic training sessions to be provided to users upon installation.		
(iv)	Supporting tools - General supporting tools for operation and maintenance of AFM system must be included along with calibration samples.		
(v)	Necessary manuals (in digital form) for operation of the system, software operation manual, and application manuals etc should be provided along with the system.		
(vi)	System in its present form should be upgradable in future to include other modules and optional attachments from time to time.		
(vii)	The power requirement, environmental/room requirements like temperature, humidity, room vibration levels etc for the proper functioning of the instrument should be provided by the vendor before installation.		
(viii)	The vendor must provide detailed information on all safety features, including laser safety specifications, laser classification, and information on interlock systems.		

Details of AMc services to be offered for 3 years

Sl. No.	AMC Service	Details offered by Bidder
1	Preventive maintenance Number of visits/years	(Nos)
2	Breakdown maintenance	
4	Breakdown response time	
5	Resolution time	
6	Service engineer availability	
7	Software support/upgrades	
8	Calibration	
9	Replacement of defective parts	
10	Exclusions/other conditions	

NOTE ON STATEMENT OF DEVIATIONS: The bidder shall clearly highlight and indicate any deviation from the specified technical requirements in the "Deviation/Remarks" column. In the absence of any deviation, "NIL" shall be indicated.

Additional Modules / Optional Features – To Be Offered and Quoted Separately

Sl. No	SPECIFICATIONS:	Compliance Yes/No	Reference data sheet with page no.)
1.	Quantitative Nanomechanical Mapping mode: Fast force mapping of topographical and real-time mapping of quantitative Nano mechanical properties such as elastic modulus, hardness, and adhesion of the sample. Software must have a variety of analysis models like Hertz/Sneddon and Derjaguin-Muller-Toporov (DMT) models, Johnson-Kendall-Roberts (JKR) and Oliver Pharr models etc., as no single model can correctly apply to all samples.		
2.	Advanced Kelvin probe force microscopy (KPFM) modes: Single pass KPFM Sideband KPFM or Peak Force KPFM Heterodyne KPFM		
3.	High Voltage set-up for PFM: A dedicated high voltage up to 150 V (both AC and DC bias) module for tip or sample bias to enable measurements on materials with weak piezoelectric response should be offered. The high voltage module must provide necessary safety features for safe and easy operation. It should allow high voltage for both AC and DC bias. Only DC bias option will be rejected.		
4.	Heating stage: Heating stage with temperature ranges from ambient to 250 degrees with 0.1°C stability. The temperature of the stage should be able to control directly from the AFM software which should allow custom temperature profiles to be run during imaging experiments. There should be option to purge gas to the heating stage to minimize the oxidation while heating.		
5.	Variable Magnetic Field module: System should include an accessory that allows application of a variable magnetic field parallel to the sample plane. Field strength capable of reaching +/-0.8T (+/- 8000G) with Maximum field ramp: 7000 G/minute. An integrated sensor must measure the field strength near the sample with a resolution of ~1G and the field strength should be software controlled. During steady state operation, the device should not generate heat, even at the maximum field strength. The module should be based on a permanent magnet (not an electro-magnet) so that no cooling of the magnet is required. This module should include capabilities for both in-plane and out of plane operation. The out of plane magnetic fields should be possible just by the inclusion of required pole pieces which should allow field ranges of approximately +/- 1200 Gauss in a bipolar configuration. A handheld gaussmeter for measuring fields also should be provided for measuring actual magnetic field for Out-of-plane field.		
6.	Electrochemical Cell (EC-AFM): Electrochemical cell assembly should consist of a PEEK fluid cell assembly or better with working and reference electrodes along with an all-PEEK cantilever holder. Should also include accessories like Electrical junction box with connections and programmable jumpers to interface with customer provided potentiostat.		
7.	Future upgradability: System must have future upgradability option to the below options/accessories: Probe station: The probe station should consist of two tungsten needle probes that can be independently and accurately positioned on the sample with micromanipulators. The AFM's cantilever can serve as another electrical probe which allows for in-situ two-point and three-point probe electrical measurements. Strech-stage: The high-strain, high-travel manual stretching stage should provide two axis stress control of tensile loaded samples and allows control of the sample image region under different loads. Scanning Capacitance Microscopy (SCM) Time-dependent dielectric breakdown measurements option: A dedicated high-voltage module up to at least 150 V (both AC and DC voltages) for tip or sample bias required to enable the electrical measurements, especially for dielectric breakdown measurements. Photo-thermal excitation mode: The system must include photothermal cantilever excitation mode with a drive frequency up to at least 7 MHz. The focal plane and cantilever plane must be parallel to allow simple spot positioning. Spot positioning must be motorized and under software control, with the spot location being controlled and aligned on cantilever with a single mouse click. Equivalent techniques may also be accepted, provided they are closely comparable in principle and not fundamentally different.		

Note: The optional/additional modules and capabilities shall be quoted separately in the Financial Bid.

- The bidder shall indicate the price of each optional module/capability separately in the prescribed price schedule.
- These optional modules/capabilities are not part of the mandatory scope of supply, and their prices shall not be considered for determining the L1 bidder. CeNS may procure any or all of these optional modules, subject to the its requirements, and reserves the right not to procure any of them.
- The bidder/OEM shall, however, certify that the AFM system offered under the main tender is fully compatible with all the optional modules/capabilities quoted, and that such modules can be integrated with the supplied system if procured along with the AFM or at any time in the future during the serviceable life of the system.
- The prices quoted for the optional modules shall be firm and valid for the period specified in the tender and shall be clearly indicated separately for each module/capability.

DELIVERY, WARRANTY AND SERVICE COMMITMENT

Particulars	Requirement / Bidder Commitment	Remarks
Delivery period from the Purchase Order	To be stated by bidder	
Installation and commissioning period	To be stated by bidder	
Training	To be provided at CeNS	
Warranty period	To be stated by the bidder	
Response time for service complaints	To be stated by the bidder	
Availability of local service support	Details to be furnished	
Annual maintenance contract	Minimum 3 years	
Response time for service complaints during AMC and supply of spares (if necessary)	To be stated by the bidder	
Frequency of Preventive Maintenance	To be stated by the bidder	

Place: _____

Signature of the Bidder

Date: _____

Name & Address of the Bidder with Office Seal

DECLARATION REGARDING RESTRICTIONS ON PROCUREMENT

(To be submitted on the letterhead of the bidder)

Date: _____

I/We, _____, authorised representative of M/s _____, have read and understood the provisions relating to restrictions on procurement from bidders of countries sharing a land border with India.

I/We hereby certify that:

(a) I/We are not from a country sharing a land border with India;

OR

(b) I/We are from _____ (name of country), have been duly registered with the Competent Authority, fulfil all prescribed requirements, and am eligible to be considered.

Where applicable, documentary evidence of valid registration with the Competent Authority is enclosed.

Place: _____

Signature of the Bidder

Date: _____

Name & Address of the Bidder with Office Seal

SELF-CERTIFICATION UNDER PUBLIC PROCUREMENT POLICY – MAKE IN INDIA

(To be submitted on the letterhead of the bidder)

I/We, M/s _____, hereby affirm that we shall abide by the applicable Government of India Public Procurement (Preference to Make in India) Policy, as amended from time to time.

That I will agree to abide by the terms and conditions of the Public Procurement (Preference to Make in India) Policy vide GoI Order no. P-45021/2/2017-PP (B.E.-II) dated 15.06.2017 (subsequently revised vide orders dated 28.05.2018, 29.05.2019, and 04.06.2020) MOCI order No. 45021/2/2017-PP (BE II) Dt.16th September 2020 & P45021/102/2019-BE-II-Part(1) (E-50310) Dt. 4th March 2021 and any subsequent modifications/Amendments, if any

I/We confirm that the local content of the quoted has been verified by us and that we are responsible for the correctness of the claim.

Category	Tick (✓)	Declaration
Class-I Local Supplier	☐	Local content meets the applicable Class-I threshold.
Class-II Local Supplier	☐	Local content meets the applicable Class-II threshold but is below the Class-I threshold.
Non-Local Supplier	☐	Local content is below the applicable Class-II threshold.

Percentage of local content: _____ %

Location(s) at which local value addition is carried out: _____

I/We certify that the above declaration is true and correct and may be verified by CeNS/competent authority.

Place: _____ Date: _____

For and on behalf of: _____

Name/Designation of Authorised Signatory: _____

Signature: _____ Seal: _____

Note: The bidder shall comply with the latest applicable Government of India provisions regarding local content, purchase preference and certification.

Place: _____

Signature of the Bidder

Date: _____

Name & Address of the Bidder with Office Seal

SELF-DECLARATION REGARDING NON-DEBARMENT / NON-CONVICTION

(To be submitted on the letterhead of the bidder)

I, _____, being the authorised representative / Director / Partner / Proprietor of M/s _____, hereby declare:

1. The Firm/Company has not been debarred, blacklisted or declared insolvent by any Union/State Government Department, Government Organisation, Autonomous Body, PSU or Statutory Body as on the date of submission of this bid.
2. Neither the Firm/Company nor its proprietor/partners/directors has any subsisting disqualification arising from debarment/blacklisting that makes the Firm/Company ineligible to participate in this tender.
3. Neither the Firm/Company nor its proprietor/partners/directors has been convicted in a criminal case or economic offence, and no relevant criminal case/economic offence is pending before any Court of Law or competent authority, except as specifically disclosed below.
4. No material information relating to debarment, blacklisting, insolvency or conviction has been suppressed.
5. The information furnished above is true and correct. If found to be false or misleading, CeNS may reject the bid/cancel the contract and take action under applicable rules.

If any matter is required to be disclosed, details: _____

Place: _____

Signature of the Bidder

Date: _____

Name & Address of the Bidder with Office Seal

INTEGRITY PACT DECLARATION

I/We acknowledge that the **Centre for Nano and Soft Matter Sciences (CeNS)** is committed to following the principles and provisions contained in the Integrity Pact forming part of the tender documents.

I/We agree that the Tender is an invitation to offer made on the condition that I/We shall comply with the **Integrity Pact**, which forms an integral part of the tender documents. I/We understand that failure to comply with the provisions of the Integrity Pact may result in disqualification from the tendering process and/or such other action as may be provided under the tender conditions.

I/We acknowledge that the **making of the bid shall be regarded as an unconditional and absolute acceptance** of the conditions of the Integrity Pact forming part of the tender documents. I/We confirm our acceptance and compliance with the Integrity Pact in letter and spirit and further agree that, upon award of the contract, the Integrity Pact shall remain binding on us in accordance with its terms and conditions.

I/We acknowledge and accept the **duration of the Integrity Pact** as specified in the Integrity Pact forming part of the tender documents.

I/We further acknowledge and agree that, in the event of my/our failure or refusal to sign and accept the Integrity Pact, **CeNS shall have the right to disqualify my/our bid and reject the bid in accordance with the terms and conditions of the Tender.**

I/We hereby confirm that we have read, understood and accepted the provisions of the Integrity Pact and agree to abide by the same throughout the tendering process and, where applicable, during the execution of the contract.

(Duly authorised signatory of the Bidder with Seal)

NEAR-RELATIONSHIP CERTIFICATE**Definition of Near Relative**

For the purpose of this certificate, near relatives shall include:

Members of a Hindu Undivided Family;

- 1) Husband and wife;
- 2) A person related to another in the following manner: Father, Mother, Son, Son's wife (daughter-in-law), Daughter, Daughter's husband (son-in-law), Brother, Brother's wife (sister-in-law); Sister; Sister's husband (brother-in-law)

Certificate

I/We hereby certify that none of my/our near relatives, as defined above, is presently working in the Centre for Nano and Soft Matter Sciences (CeNS).

I/We further certify that the information furnished above is true and correct to the best of my/our knowledge and belief.

I/We understand that any incorrect declaration or suppression of material information may result in rejection of the bid and/or such other action as may be taken by CeNS in accordance with the applicable rules and tender conditions.

(Duly authorised signatory of the Bidder with Seal)

In the case of a proprietorship firm, a certificate will be issued by the proprietor; in the case of a partnership firm, a certificate will be issued by all the partners; and in the case of an Ltd. Company, a certificate will be issued by all the Directors of the company or by the company secretary on behalf of all the Directors. If the company, firm, or any other person breaches these conditions, the tender/work will be cancelled, and the earnest money/security deposit will be forfeited at any stage whenever such breach is noticed. The department will not pay any damages to the company, firm, or the concerned person. The company, firm, or the persons will also be debarred from further participation in the concerned unit.

OEM AUTHORISATION / CERTIFICATION FORM

(To be issued on the Original Equipment Manufacturer's letterhead)

We, M/s _____, are the Original Equipment Manufacturer (OEM) of the High Resolution Atomic Force Microscope offered in the above tender.

We hereby confirm that M/s _____ (name of bidder) is our:

Status	Tick (✓)
Authorised Distributor	☐
Authorised Dealer	☐
Authorised Reseller	☐
Authorised Partner	☐
Other (specify): _____	☐

The bidder is authorised to participate in this tender, quote, supply, install, commission and provide warranty/after-sales support for:

Product/System: _____

Model No.: _____

Country of Origin: _____

We undertake to provide necessary OEM technical, warranty and after-sales support for the offered system in accordance with the tender requirements.

Name and Signature
of the authorized signatory of OEM along with
seal of the company with Date

DETAILS OF EXPERIENCE / SIMILAR AFM INSTALLATIONS

(To be submitted on the letterhead of the bidder)

The bidder shall furnish details of the supply, installation, and commissioning of similar Atomic Force Microscope systems supplied by the bidder/OEM to reputed institutions, universities, research laboratories, R&D organisations, or industries.

Sl. No.	Client / Organisation	AFM Make & Model	Qty.	PO No. & Date	Supply Period	Order Value	Client Officer & Contact
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The bidder shall furnish details of the AMC services provided, if any, by the bidder to reputed institutions, universities, research laboratories, R&D organisations, or industries.

Sl. No.	Client / Organisation	AFM Make & Model	Qty.	PO No. & Date	Supply Period	Order Value	Client Officer & Contact
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Copies of relevant purchase orders/work orders and supporting documents must be enclosed.

I/We certify that the above information is true and correct. CeNS is authorised to verify the details furnished above with the respective client organisations.

Place: _____

Signature of the Bidder

Date: _____

Name & Address of the Bidder with Office Seal

PRICE BID / COMMERCIAL OFFER – SCHEDULE

The bidder shall submit the financial bid only through the prescribed BOQ/Financial Bid format. The following schedule outlines the components included in the quoted price. Prices shall not be entered in the Technical Bid.

Sl. No.	Description	Qty.	Unit	Unit Price	Total Price
A	Supply, Installation and commissioning of High-Resolution Atomic Force Microscope – complete system as per technical specifications mentioned in Annexure I with DDP in CeNS Bengaluru	1	Set		
B	AMC (for item Description as per Tender) after Warranty Period				/ Year In INR
C	Total price including AMC for 3 years				
C = [A+ B × (3)] – Final price					

The quoted price shall clearly indicate applicable taxes, duties, freight, insurance, installation, commissioning and all other charges. Any optional item shall be priced separately. No unilateral price revision shall be admissible during the bid validity period.

Signature of the Bidder

Name & Address of the Bidder with Office Seal

COMMERCIAL TERMS

- All columns should be appropriately filled and not left blank.
- Payment shall be made through NEFT/RTGS in accordance with the Purchase Order/Contract after delivery, successful installation, commissioning and acceptance of the equipment, subject to submission of complete documents.
- For imported equipment, the bidder shall clearly state the applicable Incoterms, currency, freight, insurance, customs-related charges and delivery point. Any exemption/concession available to CeNS shall be dealt with as applicable.
- The supplier shall provide full insurance cover against loss or damage during transit until installation and commissioning, as applicable to the quoted terms.
- The supplier shall indicate the warranty period and detailed warranty coverage. The warranty shall commence from the date of successful installation and commissioning.
- Do not include any other charges, taxes, duties, etc. in the Unit Cost of the item.
- The option item should be bid separately
 - Any accessories or optional items should be shown separately using the above format, using relevant portions of Annexure III in the format as given below. Use a separate sheet for a detailed description, specifications, and price breakdown of the item(s) mentioned in the technical specification, but prices should be quoted in the same format.

Sl. No	Description of optional item (with technical description):	Unit Cost	Total cost

- Prices quoted in Indian Currency should be on F.O.R. basis and mention separately using a different table format showing all the applicable taxes/Duties like GST, Freight & Transportation charges and installation charges, etc.

BIDDER DOCUMENT CHECKLIST

Sl. No.	Document	Submitted (Yes/No)
1.	EMD proof / valid exemption document, as applicable	Technical bid
2.	OEM authorisation letter	Technical bid
3.	OEM/bidder profile and proof of relevant experience	Technical bid
4.	List of at least three similar installations/users with contact particulars	Technical bid
5.	Technical compliance statement	Technical bid
6.	Technical brochures/datasheets/catalogues supporting each claimed specification	Technical bid
7.	Delivery and installation schedule	Technical bid
8.	Warranty and after-sales service commitment	Technical bid
9.	PAN / GST / MSME or other applicable statutory documents	Technical bid
10.	Tender Document duly signed and stamped on each page	Technical bid
11.	Integrity Pact	Technical bid
12.	No near relative certificate	Technical bid
13.	Price bid duly filled and certified	Financial bid
14.	Price bid for optional accessories	Financial bid
15.	Any other details in respect of the Principal, details of the Customs clearance agent, bank details, etc	Financial bid