



Date: 16/01/2019

**INVITATION OF BIDS FOR PROCUREMENT OF ATOMIC FORCE
MICROSCOPE**

ENQUIRY NO: IITGOA/2018-19/074 DTD 16/01/2019

1. Quotations are invited in two bid system for procurement of Atomic Force Microscope in separate envelopes. Please mention the above-mentioned Title, Enquiry number and due date for submission of Bids on the sealed cover to avoid the Bid being declared invalid.
2. The address and contact numbers for sending Bids or seeking clarifications regarding this RFP are given below –

**Assistant Registrar
(Stores & Purchase)
IIT GOA, At GEC Campus,
Farmagudi, Ponda – Goa.
403401
ar_sp@iitgoa.ac.in**

3. This bid enquiry is divided into three parts as follows:
 - a. Part I – Contains General Information such as the time, place of submission and opening of tenders, Validity period of tenders, etc.
 - b. Part II – Contains Instructions for the Bidders and essential details of the items/services required, such as the Schedule of Requirements (SOR), Technical Specifications, Delivery Period, Place of Delivery and Consignee details.
 - c. Part III – Contains Price Bid format, other details etc.
4. This bid enquiry is being issued with no financial commitment and the Institute reserves the right to change or vary any part thereof at any stage and to withdraw it at any stage.



Part I – General information

Tender No.	IITGOA/2018-19/074		
Tender Date	16.01.2019		
Tender Category	Goods		
Tender Type	Open		
No. of Envelopes	2		
Covers Information / Submission of Bids			
Cover No.	Cover Type	Description	Document Type
1	Technical	Technical Specification, Tender Document, EMD, Schedule of Requirement and Compliance, Bidders Information/Indian Agent Information, Previous Supply Order	.pdf
2	Financial	Financial Bid	.pdf
<p>Two Bid System:</p> <ul style="list-style-type: none"> ❖ The two-bid system will be followed for this tender. In this system bidder must submit their offer in separate sealed envelopes as – Technical Bid and Financial Bid. ❖ Separate technical bid and financial bid envelopes should be clearly marked as "Envelope No. 1 - Technical Bid" and "Envelope No. 2 - Financial Bid". ❖ Both these sealed covers are to be put in a bigger cover which should also be sealed and duly super scribed with our Tender No. & Due Date and to be submitted to the concern department/section mentioned in tender document. ❖ Bids should be forwarded by Bidders under their original memo / letter head inter alia furnishing details like GST number, Bank Details etc. and complete postal & e-mail address of their office. <p>Note:</p> <ul style="list-style-type: none"> • The technical offer should not contain any price information. If the price quoted is submitted in technical bid the tender will be rejected at the sole discretion of IIT Goa. • Initially Technical Bids will be opened and evaluated by the purchase committee. Financial Bid of only Technically qualified bidders will be opened later. • Contract/ Purchase Order will be awarded to the lowest bidder(L1) of Financial Bid among them. 			
Form of Contract	Supply		
EMD Fee Details (in the form of Bank Guarantee/Demand Draft)			
EMD Fee INR:	Rs.2,00,000.00		

General Conditions of EMD:

a) Bidders are required to submit Earnest Money Deposit (EMD) for an amount of Rs 2,00,000/- along with their bids. The EMD may be submitted in the form of an Account Payee Demand Draft/Bank Guarantee from any Public Sector Bank authorized to conduct government business favouring "Indian Institute of Technology Goa, payable at Goa". Bids not accompanied by EMD will be rejected.

b) The EMD will be refunded to all the bidder other than the three lowest technically suitable bidder within one month from the date of opening of the Financial Bid (Cover – II). The EMD of the bidder other than the bidder whose offer is accepted will be refunded within a period of one month after award of Contract.

c) The EMD of the bidder who are not qualified under Cover – I will be refunded within one month from the date of return of their unopened cover – II.

d) The EMD of the successful bidder will be refunded only after the remittance of security deposit.

e) Where a person whose tender has been received intimates that they are withdrawing their tender before the validity period or makes any modification in the terms and conditions of the tender which are not acceptable to IIT Goa (or) fail to furnish the security deposit within the prescribed time, IIT Goa shall without prejudice to any other right or remedy, be at liberty to forfeit the Earnest Money deposited by such person absolutely. The Bid Security of the successful bidder would be returned, without any interest whatsoever, after the receipt of Performance Security from them as called for in the contract.

f) Micro and Small Enterprises (MSEs) registered with National Small Industries Corporation are exempted from payment of Earnest Money Deposit. However, vendors covered under this category have to submit copy of registration certificate with present validity along with technical bid, failing which, the bid will be disqualified.

Bid Validity (Days):	120 days
Period of Work/Delivery Period (Days):	60 days
Pre-Bid Meeting Date & Time:	Will be decided on request
Pre-Bid Meeting Place & Address:	NA
Modification and Withdrawal of Bids:	A prospective bidder who requires clarification regarding the contents of the bidding documents shall notify to the Buyer in writing about the clarifications sought not later than 7 (Seven) days prior to the date of opening of the Bids. Copies of the query and clarification by the purchaser will be sent to all prospective bidders who have participated the bidding documents.
Clarification regarding contents of the tender document/RFP:	A bidder may modify or withdraw his bid after submission provided that the written notice of modification or withdrawal is received by the Buyer prior to deadline prescribed for submission of bids. A withdrawal notice may be sent by email but it should be followed by a signed confirmation copy to be sent by post and such signed confirmation should reach the purchaser not later than the deadline for submission of bids. No bid shall be modified after the deadline for submission of bids. No bid may be withdrawn in the interval between the deadline for submission of bids and expiration of the period of bid validity specified. Withdrawal of a bid during this period will result in Bidder's forfeiture of bid security.
Rejection of bids:	Canvassing by the Bidder in any form, unsolicited letter and post-tender correction may invoke summary rejection with forfeiture of EMD. Conditional tenders will be rejected.
Unwillingness to quote:	Bidders unwilling to quote should ensure that intimation to this effect reaches before the due date and time of opening of the Bid, failing which the defaulting Bidder may be delisted for the given range of items as mentioned in this RFP.
Contract Type:	Tender

Delivery Location:	Indian Institute of Technology Goa Goa Engineering College Campus, Bhausaheb Bandodkar Technical Education Complex, Veling, Farmagudi, Ponda, Goa
Pin Code:	403401
Bid Submission End Date/Date & Time Submission:	06.02.2019 at 17:00hrs
Place of Submission of Bid:	Stores & Purchase Department, IIT Goa, Admin Block, At GEC Campus, Farmagudi, Ponda, Goa-403401
Bid Opening Date & Time:	07.02.2019 at 15:00 hrs
Bid Opening Place:	IIT Goa, Admin Block, At GEC Campus, Farmagudi, Ponda, Goa-403401
Other Terms & Conditions:	As per mentioned in technical specification
Technical Clarification:	Name: Dr. Arindam Das Dept: IIT Goa Email: arindam@iitgoa.ac.in +91 8777747613
Tender Inviting Authority:	Name: Assistant Registrar (S&P) Address: Stores & Purchase Department, IIT Goa, Admin Block, At GEC Campus, Farmagudi, Ponda, Goa - 403401
Signing Authority:	Assistant Registrar (S&P)



Part II: Instructions to Bidders

1. **Schedule of Requirements** – List of items are attached as **Annexure 'A'**
2. **Technical Details:** Technical details are attached in **Annexure 'B'**
3. **Two-Bid System:** In respect of Two-bid system, Bidders are required to furnish clause by clause compliance of specifications bringing out clearly the deviations from specification, if any.

i) **The Bidders are advised to submit the following documents along with Technical Bid –**

- a) Compliance certificate in the following format;

Para of tender enquiry specification item-wise (As per annexure B)	Specification of Item offered	Compliance – whether YES/NO	In case of non-compliance, deviation to be specified in unambiguous terms

- b) Bidders & Indian Agent's Information (**Annexure C**).

c) A copy of Indian Agent Agreement / Authorisation letter from OEM / OEMs along with tender to be submitted by All Indian Agents, if the manufacturer/supplier is based in abroad.

- d) EMD

- e) GST/PAN details

f) The Bidder should provide a list of customers of previous supply of a similar/ same range of equipment to IIT's/ NIT's/Universities with contact details. Copies of order received need to be submitted.

ii) **The following documents should be submitted along with Financial Bid –**

- a) Price Bid. (**Annexure D**)

- b) Previous order of supplies/Justification of quoted rates. (**Annexure E**)

4. **Delivery Period** – supply to be made within **60 days** from the effective date of issuance of Purchase Order. Please note that P.O. can be cancelled unilaterally by the Institute in case items are not received within the delivery period. Extension of delivery period will be at the sole discretion of the Institute, with applicability of LD clause.

5. **Delivery and Transportation** - Place for supply / installation is '**Indian Institute of Technology Goa, Ponda – Goa**'. The transportation cost up to the destination is to be borne by the bidder.

Part III: Conditions of Contract

1. Award of Contract:
 - i. IIT Goa shall award the contract to the technically qualified eligible BIDDER whose bid has been determined as the lowest evaluated financial bid.
 - ii. If more than one BIDDER happens to quote the same lowest price, IIT Goa reserves the right to award the contract to more than one BIDDER or any BIDDER.
2. Prices:
 - i. **For Import Supplies** - The supplier shall pay and bear all other liabilities, taxes and duties not specifically agreed by the Purchaser in the contract.
For Indigenous Supplies - The supplier shall pay and bear all other liabilities, taxes and duties not specifically agreed by the Purchaser in the contract.
3. Pre-installation:
 - i. Please also mention the pre-installation requirements for the equipment like ambient temperature, humidity, civil work, weather specifications, power specifications, etc. When items are provided full performance satisfaction should be demonstrated.
4. Installation:
 - i. Supplier shall be responsible for installation / demonstration wherever applicable and for after sales service during the warranty period and thereafter as mentioned in the contract.
 - ii. Installation / demonstration to be arranged by the supplier free of cost and the same is to be done within 15 days of the arrival of the equipment at site.
5. Training:
 - i. The supplier shall submit training proposal for the operation and maintenance to the personnel of IIT Goa on the offered equipment/machinery.
 - ii. Wherever needed, our technical persons should be trained by the supplier at the project site free of cost. In case the person is to be trained at supplier's site abroad or in India it should be mentioned in the quotation clearly. The supplier should bear all the expenses for such training including 'to & fro' fares and lodging & boarding charges.
6. Terms of Payment:
 - i. 90% Payment on delivery or by Letter of credit and balance 10% will be paid after satisfactory installation and commissioning. IIT Goa do not pay any advance payment to supplier.
7. Legal Matter:
 - i. All disputes are subject to Goa jurisdiction only.
8. Penalty/ Liquidated Damages:
 - i. Timely delivery is essence of the contract and hence if any consignment be delayed, liquidated damages at the rate 0.5% of the price of the delayed consignment, for each week or part whereof shall be levied and recovered subject to maximum of 10% of total purchase order value.
 - ii. IIT Goa reserves the right to cancel the order in case the delay is more than 10 weeks. Penalties if any will be recovered by forfeiting PBG at vendor's cost and risks.
9. Supervision of Erection and Commissioning:
 - i. Successful BIDDER shall depute concerned specialist, for supervision of erection & commissioning of the machine to be carried out. The successful BIDDER shall make necessary arrangement at their own expenses for stay, transport and other expenses of their Specialist during their stay in Goa which also includes imparting free of cost training to IIT Goa personnel.

10. Performance Guarantee (GFR 2017 Rule 171):

- i. Performance Guarantee Bond is mandatory.
- ii. Successful tenderer/ bidder should submit performance guarantee as prescribed above to be sent to The Assistant Registrar, Stores & Purchase Department, IIT Goa on or before 15 days from the due date of issue of order acknowledgement. The PBG to be furnished in the form of bank guarantee as per proforma or annexure of the tender documents, for an amount covering 5 % of the purchase order value.
- iii. The Performance Guarantee should be established in favour of "The Registrar, IIT Goa".
- iv. PBG to be established through any of the National Banks (whether situated at Goa or outstation) with a clause to enforced the same on their local branch of Goa or any scheduled bank (other than national bank) situated at Goa. Bonds issued by co-operative banks will not be accepted.
- v. Performance Guarantee Bond shall be for the due and faithfully performance of the contract and shall remain binding, notwithstanding such variations, alterations for extensions of time as may be made, given, conceded or agreed to between the successful tenderer and the purchaser under the terms & conditions of acceptance to the tender.
- vi. The successful tenderer is entirely responsible for due performance of the contract in letter and spirit and all other documents referred to in the acceptance of tenders.
- vii. The PBG shall be kept valid during the period of contract and shall continue to be enforceable for a period of one year/two years (as mentioned in the tender document) or upto warranty period whichever is later from the date of order acknowledge. In case PBG needs extensions upto warranty period then supplier shall initiate extensions to PBG one month prior to expiry of PBG.
- viii. For successful suppliers, if PBG is not submitted within 15 days from the date of Order Acknowledgement, then the Purchase Order will be cancelled with forfeiting of EMD.
- ix. **No interest shall be payable by the buyer to the Bidder on PBG.**

List of items required

Sl. No.	Description of Items	Qty
1	Atomic Force Microscope	01 No.

Specifications of Atomic Force Microscope:

1. Mandatory Requirements: Appropriate Quotation sought.	
1.1	Delivery and Installation at IIT Goa. Reinstallation at permanent campus after 3-5 years
1.2	5 years comprehensive warranty, service and application support
1.3	10 years spare parts, accessories, free software upgrade availability including necessary training and support.
2. Special Requirements	
2.1	Appropriate UPS system with greater than 1 hour backup must be quoted.
2.2	Suitable vibration isolation table/platform (imported brand) for the microscope system and computer workstation/accessories should be provided.
2.3	List of complete safety regulations should be specified.
2.4	User list of the quoted model in India (preferably) and record of after sales services must be provided.
2.5	At least 3 references must be provided from reputed Indian institute/ that has purchased the equipment recently and preferably from western India.
2.6	Complete installation.
2.7	Demonstration of all the applications and facilities as per the demand of the users. Complete training to at least two persons. Training on specialty applications: a) Demonstration for AFM, with non-contact AFM, and AFM facilities b) Calibration, testing, and force measurement of standard and unknown samples. c) Training on the AFM software for operations. d) Demonstration of capabilities like for AFM nanolithography, LFM, MFM, PFM, KPFM e) Polymer imaging and characterization. f) Colloid probe microscopy etc.
2.8	A complete list of consumable with price should be quoted.
2.9	The power requirement for the main facility and for the accessories is 230-240V and 50 Hz.
2.10	Requirements of space, electricity and other auxiliaries (e.g., gas lines, water, chiller, solvent sources, etc., if applicable) for the equipment should be specified.
3. Basic Configuration	
3.1	Modes of Operation: a) Contact Mode and true non-contact mode b) Dual AC c) Dual AC Resonance Tracking d) Force Curve Mode e) Lateral Force Microscopy (LFM) f) Electrostatic Force Microscopy (EFM) g) Force Mapping Mode (Force Volume) h) Force Modulation i) Frequency Modulation j) Kelvin Probe Force Microscopy (KPFM) k) Loss Tangent Imaging

	<p>l) Magnetic Force Microscopy (MFM): System must be capable of supporting an accessory that allows application for Variable in-plane and out-of-plane magnetic fields, with field strength controlled from within the software. The in-plane magnetic field should range from at least +/-7,000 G and the out-of-plane field strength should range from at least +/- 1200 Gauss. The accessory may be purchased in future as up gradation. 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.</p> <p>m) Nanolithography and Nano manipulation</p> <p>n) Phase Imaging</p> <p>o) Piezo response Force Microscopy (PFM) and DART PFM</p> <p>p) Switching Spectroscopy PFM</p> <p>q) Tapping Mode (AC Mode)</p> <p>r) Tapping Mode with Q-control</p> <p>s) Vector PFM</p> <p>t) High resolution mode for imaging delicate soft samples in both air & liquid environments while maintaining resolution & clarity is must.</p> <p>u) The AFM system must be able to image samples and perform measurements in air and in liquid using the same cantilever holder. The cantilever holder must be compatible with most commercial cantilevers.</p> <p>v) AFM system should be capable of measuring adhesion between colloid particles, between particles and surfaces, between cell and surfaces etc. Any new technology which allows video based interactive and automatic particle/cell attachment with probes and automatic force measurement techniques will be preferable</p> <p>vi) Scanning Tunnelling microscopy</p> <p>vii) AM-FM viscoelastic Mapping, contact resonance viscoelastic mode.</p> <p>viii) Scanning thermal microscopy</p> <p>ix) Conductive AFM</p> <p>x) Electrochemistry Cell</p>
3.2	Single scanner for low and high resolution imaging
3.3	Facilities for Electrical conductivity measurements
3.3	Nano indentation for AFM
3.4	General Purpose camera with microscope
4. Details of Required Specifications	
4.1	<p>Scanners:</p> <p>a) System must scan the sample in XY and the tip in Z.</p> <p>b) The XY & Z scanner should be decoupled. A combination of Flexure / Piezo type scanners would be acceptable as long as they are able to demonstrate the intended capabilities listed here in with all modes of operation</p> <p>c) Each axis of motion is independently actuated using its own piezo stack and flexure stage.</p> <p>d) Should have Integrated LVDT position sensors in all three axes provide seamless closed loop operation.</p> <p>e) System must include a closed-loop XY scanner with a minimum range of 120 μm (closed loop) and with XY sensor noise <0.6nm Adev in a 0.1Hz to 1 kHz bandwidth. Scanner noise specifications and representative high 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 and in both air and liquid environments.</p>

	<p>f) System must include a Z scanner with a minimum range of 15µm that is capable of both open-loop and closed-loop operation. Noise on the Z sensor must be <0.25nm Adev in a 0.1Hz to 1 kHz bandwidth. Scanner noise specifications and representative high 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 and in both air and liquid environments. Scan head of higher Z range 30 µm or more must be quoted as optional item.</p> <p>g) The scanner must be closed-loop and independently actuated in X, Y and Z with dedicated piezo stacks.</p>
4.2	<p>System must use at least 24-bit digital-to-analog converters (DACs) in order to generate the XY and Z piezo scan signals. At both 120-micron and 10-nm scan sizes, the corresponding bit resolution must be sub -Angstrom (<0.1nm). Note that this specification applies to the generation of the scanner drive signals, not the sampling of the scanner position sensors.</p> <ul style="list-style-type: none"> a) The system must provide thermal tunes of the cantilever up to at least 2 MHz. b) The instrument must allow digital Q-control in the range 2 kHz – 2 MHz. c) The instrument must include software controlled relays for the X, Y and Z high voltage supplies and the laser power. d) The electronics must provide access to all major signals on BNC connectors on the controller front panel including deflection (A-B), sum (A+B), amplitude, phase, lateral force, X, Y and Z sensors, three user inputs, three user outputs, X,Y and Z piezo drive voltages, and user X, Y and Z modulation voltage inputs compatible with external hardware. There must also be an audio-out for ear phone. e) The instrument must include auto-configuration of external hardware and accessories. Device parameters must be stored in non-volatile RAM on the device itself and read into the software when the device is plugged in. This eliminates the need for parameter files. f) The instrument must include a user programmable control knob that can be used to fine tune and adjust all scan parameters.
4.3	<p>Samples Types: opaque, transparent, insulating, conducting, and biological. The instrument must accommodate samples sizes up to 80mm (dia) and 10mm thick. There should be an option for samples of 25mm thick and above.</p>
4.4	<p>Upright Microscope for sample observation with objectives – 10x, Kohler illumination and view of the cantilever and sample through a 10X 0.28 NA Mitutoyo objective. The base should contain a port for inserting fiber guide illumination and built-in cameras with differing magnifications (720 and 240 micron field of view for 1/4" CCD cameras).</p> <p>The instrument must use an infrared SLD (or equivalent) for the optical lever arm to eliminate optical crosstalk with epi- and transmission- fluorescence measurements</p>
4.5	<p>Force sensitivity < 30 pN or better (proof of force sensitivity is must).</p>
4.6	<p>Software</p> <ul style="list-style-type: none"> a) Control and analysis must be user-programmable natively in an entirely open source software programming language. b) The system's software must include a one-click configuration tool that sets up the software for standard and user-defined operation modes,

	<p>such as AC imaging in air and liquid, contact mode, EFM, KPFM, PFM, force measurements, etc.</p> <p>c) The data acquisition system must be capable of recording individual image sizes of 8000 x 8000 pixels² or greater.</p> <p>d) AFM control software environment must include 3D rendering technology for advanced image display. This feature must allow the user to generate, display and visualize 3 & 4D real-time scan images, as well as off-line processing.</p> <p>e) Must include drift compensation software. Software must allow a region of interest to be tracked in real time to within 1nm of precision while eliminating any scan distortion in the image. Drift compensation must be able to be applied to any imaging, spectroscopy or advanced characterization mode, and in conjunction with sample heating and cooling options.</p> <p>f) Software must include a feature that automatically optimizes the imaging gain and set point for tapping mode operation. The feature must use a predictive algorithm such that operation is stable and producing high quality data within the first few scan lines.</p>
4.7	<p>Computer: Latest computer with OS and dual 24" monitors</p> <p>a) Preferably Intel i7 or higher / equivalent processor</p> <p>b) 8 GB RAM or higher</p> <p>c) Internal hard drive space of 1 TB or higher capacity</p> <p>d) Multiple USB drive and CD/DVD burner for backup-storage of image data</p>
4.8	<p>System must include an imaging mode that is capable of generating quantitative nanoscale maps of storage and loss modulus, and loss tangent (loss modulus divided by storage modulus), at high pixel resolution (at least 1024x1024 pixels). Data capture must occur during normal AC mode imaging of topography at normal scan rates (<20 minutes per scan). Proposals for techniques that map storage modulus only are insufficient and will be rejected.</p>
4.9	<p>The system must allow conductive measurements while scanning as well as at user specified locations (I-V curves).</p> <p>7. A sample bias of -10V to 10V must be possible.</p> <p>8. The bandwidth of the trans-impedance amplifier must be at least 17 kHz.</p> <p>9. The software must allow user-specified wave forms for I/V spectroscopy (square, sine, triangle, pulse, or user defined).</p> <p>10. The software must allow user-specified wave forms for loading and unloading, including multiple user-specified trigger-points, while simultaneously monitoring current.</p> <p>11. The system must include automated spiral "in" for reducing contact resistance due to surface contamination in I/V curves.</p> <p>12. The current sensing range must be 1pA to 20nA.</p> <p>13. The system must include or optionally support (specify which) current measurements from <1pA to 10μA. The full dynamic range of current sensing must be recorded simultaneously. Solutions that provide this, or similar, dynamic ranges sequentially, are not acceptable.</p>

4.10	System must include a feature that automatically calibrates the cantilever sensitivity (deflection sensitivity/INVOLS) and spring constant by simply selecting the probe type and clicking a button. To avoid tip damage, at no point during the calibration may the tip touch the sample. The feature must actually calibrate the probe. It must not use nominal tabulated values for the sensitivity and spring constant.
4.11	Heads, scanners, probe holders and optional environmental control cells must be "plug and play", meaning that the software automatically recognizes them and configures the software appropriately (e.g. calibration parameters).
4.12	3D Nanolithography Package a) Should have the lowest noise and highest precision with closed loop position control in all three axes. b) Lithography should be operated in either vector based or bit-mapped modes. c) All data types should be available for plotting during lithography, including deflection, lateral force, amplitude, phase and all user-available analog- to- digital converters (ADCs) and digital- to- analog converters (DACs). d) Lithographic contrast to be controlled by modulating cantilever set-point (both contact and AC modes), cantilever drive voltage, cantilever potential and/or any other channel including the user-available DACs.
4.13	Probes/Tips (for AFM Contact Mode / Non- Contact Mode /CAFM /PFM MFM/Colloid Probe etc) and other consumable items for running the equipment for at least 5 years.
5. Additional Features must be offered separately: These add-ons will be purchased only if the price falls within the budget available. 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.	
5.1	System must include or optionally support (specify which) an accessory that allows application for Variable in-plane and out-of-plane magnetic fields, with field strength controlled from within the AFM software. The in-plane magnetic field should range from at least +/-7,000 G. And should be measured by an integrated Hall sensor and logged by the AFM software. The out- of-plane field strength should range from at least +/- 1200 Gauss (typically +/- 1500 Gauss), During steady state operation, the device must generate no heat, even at the maximum field strength.
5.2	System must include an accessory that enables application of a variable high voltage (+/- 200 V) bias between the tip and sample. Voltage must be software controlled and capable of high frequency (>100kHz) operation. Accessory must include features and training to help ensure safe operation.
5.3	The AFM should have an option to upgrade and integrate an Inverted Optical Microscope and allow simultaneous AFM and optical measurements (i.e. bright field, epifluorescence) and optional phase contrast illumination. This option alone only needs a confirmation that compatibility is possible with specific mention of the brands of optical microscopes. No price is required at this time for an optical microscope.
5.4	Temperature control stage/stages for variable temperature studies from

	-20°C or less to 250°C or more should be provided optionally. This should be compatible with the system and have the capability to be used in special gaseous environment. This stage should support samples up to 8 mm in diameter. The kit to include all necessary accessories for sealed operation. This should include special cantilever holder if required for refined results. Ability of humidity control along with temperature is highly desirable.
5.5	Different Accessories /fluid cells required for fluid environment measurement must be quoted as optional items. These accessories must be able to hold liquid or gases either fully sealed configuration or by perfusion through configurable inlet outlet ports.

Miscellaneous:

6. **Acceptance of Tender:** The Authority of IIT Goa does not bind itself to accept the lowest priced bid and reserves the right to reject any or the entire tender bids received without assigning any reason thereof.
7. **Extra Features:** If the bidder provides any other extra features which are not mentioned in the tender product specifications, then that shall be highlighted in clear terms, with documentary evidence/literature.
8. **Compliance List:** The proposal be properly indexed and a compliance list against the technical specifications should be provided.
9. **Service:** Response to ensure quality of services, the deputed Engineer from the OEM/Vendor shall have a minimum of 3 years of experience in the relevant field and must be in the payroll of the OEM/Vendor.
10. **Re-installation:** The equipment will be temporarily installed in IIT Goa's temporary campus just after the procurement. However, the equipment will be shifted to permanent campus within 5 years. OEM/Vendor shall support the shifting the equipment and reinstallation of it.
11. Relevant documents of the OEM shall be enclosed, along with the Technical Bid. Any explanation on this account shall be supported with documentary evidence from the principals.
12. **Conditional Offer** will not be accepted.
13. **Past Performance** of the Vendors will be judged at the time of Technical Evaluation.
14. The Institute does not bind itself to offer any explanation to those bidders whose technical bids have not been found acceptable by the Technical Evaluation Committee of the Institute.
15. Quoted model must be supplied to IITs or IISc within last 3 years.
16. **List of users** of the quoted model within India and preferably from IIT, IISC and national research organizations must be submitted.
17. **A bid submitted with false information** will not only be rejected but also the OEM/ vendor will be debarred from participation in future tendering process.

(To be printed on letterhead of the bidder)

Annexure C

Bidders Information

1.	Name of the Bidder	
2.	Address of the Bidder	
3.	PAN No.	
4.	GSTN No.	
5.	State of GST Registration	
6.	E-mail	
7.	Contact Person's Name & Designation	
8.	Mobile No.	

Indian Agent's Information

1.	Name of Indian Agent	
2.	Address of Indian Agent	
3.	Indian Agent PAN No.	
4.	Indian Agent GSTN No.	
5.	State of GST Registration	
6.	E-mail	
7.	Contact Person's Name & Designation	
8.	Mobile No.	

(To be printed on letterhead of the bidder)

Annexure D

PRICE BID FORMAT

S.No.	Item description & short specification	HSN Code/ SAC Code	Qty in Units	GST %	Price Basis	Total Bid Price
1.	Atomic Force Microscope (As per technical specification)					
2.	Installation and Commissioning Charges (if any, quote in INR)					
3.	Agency Commission (if any, quote in %)					
4.	Other Charges (if any, please specify)					
Grand Total						

#HSN Code: "Harmonized System of Nomenclature Code No." and SAC Code: "Service Accounting Codes Code No."

1. Delivery Period: days

2. Terms of Payment

(a) 90% payment on delivery or by Letter of Credit and balance 10% will be paid by wire transfer after satisfactory installation and commissioning.

3. Validity of the bid: 120 days from the date of submission of quotation/tender.

4. Mode of Shipment:

5. Port of Shipment:

Signature.....

Name

Place:

Company Name & Address:

Date:

Affix Rubber Stamp:

Note: Price Bid should be submitted in given format only. For additional information/extra items above format may be typed and used.

Annexure-E

Reasonability of Prices

Please quote best minimum prices applicable for a premier Educational and Research Institution. The party must give details of at least two purchase orders identical or similar equipment, supplied to any IITS/Research Institutions/ other organisation as per below Format (to be enclosed in Technical Bid) along with the final price paid and details are mandatory.

Previous Supply Orders

Name of the Firm _____

S.No.	PO No. & Date	Description & Quantity of ordered equipment	Value of Order	Date of completion of delivery as per contract	Remarks indicating reasons for late delivery, if any and justification of price difference of their supply order & those quoted to us	Has the equipment being installed satisfactorily (attach a certificate from the Purchaser/ Consigner)	Contact Person along with Telephone no., Fax No. and e-mail address

Place: _____

Date: _____

Signature and Seal of the Manufacturer / Bidder

FORMAT FOR PERFORMANCE GUARANTEE BOND

(To be typed on Non-judicial stamp paper of the value of Indian Rupees of One Hundred) (TO BE ESTABLISHED THROUGH ANY OF THE NATIONAL BANKS (WHETHER SITUATED AT GOA OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT GOA OR ANY SCHEDULED BANK SITUATED AT GOA. BONDS ISSUED BY CO-OPERATIVE BANKS ARE NOT ACCEPTED.

To,
The Registrar,
Indian Institute of Technology, Goa
Farmagudi, Ponda,
Goa – 403401

LETTER OF GUARANTEE

WHEREAS Indian Institute of Technology, Goa (Buyer) have invited Tenders vide Tender No..... Dt. for purchase of
AND

WHEREAS the said tender document requires that any eligible successful tenderer (seller) wishing to supply the equipment / machinery, etc. in response thereto shall establish an irrevocable Performance Guarantee Bond in favour of “**Registrar, Indian Institute of Technology, Goa**” in the form of Bank Guarantee for Rs (5% (five percent) of the purchase value) and valid till **one year or upto warranty period whichever is later** from the date of issue of Performance Guarantee Bond may be submitted within 15 (Fifteen) days from the date of Order Acknowledgment as a successful bidder.

NOW THIS BANK HEREBY GUARANTEES that in the event of the said tenderer (seller) failing to abide by any of the conditions referred in tender document / purchase order / performance of the equipment / machinery, etc. this Bank shall pay to Indian Institute of Technology, Goa on demand and without protest or demur Rs..... (Rupees.....).

This Bank further agrees that the decision of Indian Institute of Technology, Goa (Buyer) as to whether the said Tenderer (Seller) has committed a breach of any of the conditions referred in tender document / purchase order shall be final and binding.

We, (name of the Bank & branch) hereby further agree that the Guarantee herein contained shall not be affected by any change in the constitution of the Tenderer (Seller) and/ or Indian Institute of Technology, Goa (Buyer).

Notwithstanding anything contained herein:

1. Our liability under this Bank Guarantee shall not exceed Rs. (Indian Rupees only).
2. This Bank Guarantee shall be valid up to(date) and
3. We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only if IIT Goa serve upon us a written claim or demand on or before (date).
4. This Bank further agrees that the claims if any, against this Bank Guarantee shall be enforceable at our branch office at situated at (Address of local branch).

Date:

Yours truly,
Signature and seal of the Guarantor:
Name of Bank:

Instruction to Bank: Bank should note that on expiry of Bond Period, the Original Bond will not be returned to the Bank. Bank is requested to take appropriate necessary action on or after expiry of bond period.