

Indian Institute of Technology, Delhi
(Nanoscale Research Facility)

Notice Inviting Quotation (NIQ) for the purchase of a high performance scanning probe microscope (SPM)

Date: 10/07/2014

Last Date for submitting quotations: 11/08/2014

Ref: IITD/NRF-RP02395/2014-15/SPM

We are in the process of purchasing a high performance scanning probe microscope (SPM). The detailed specifications for the same are mentioned below. Vendors are also requested to read and fully comply with the terms and conditions mentioned below.

S. No.	Item	Spec. Required
1.	Scanner	<ol style="list-style-type: none">1. Large multi-purpose scanner which can scan 90 x 90 μm in a single scan. Atomic resolution on graphite or mica should be demonstrated.2. Vertical (Z) noise floor should be <0.05 nm (RMS). Lateral (XY) noise floor should be <1.2 nm.3. The scanner must be able to accurately repeat the image of a sample surface.4. The lateral and vertical data should be collected by high quality piezo-electric tube scanners.
2.	Measurement Modes Required	<ol style="list-style-type: none">1. Contact mode, Non-contact/intermittent contact (tapping) mode, phase imaging, force-distance spectroscopy, nanoindentation, lateral

		<p>force microscopy, magnetic force microscopy (MFM) and electrostatic force microscopy (EFM).</p> <p>2. MFM and EFM modes should have the capability of obtaining interleaved data. First scan should collect topography in non-contact/intermittent contact mode and the second scan should collect magnetic/electrical data from a user specified vertical height. Also, topography and magnetic/electrical images should be visible simultaneously in real time.</p>
3.	Scanning System and Sample Stage	<p>1. Must be a sample scanning system which can maintain a constant tip position w.r.t. the laser and the photodetector.</p> <p>2. Direct and non-destructive sample analysis should be possible.</p> <p>3. A sample size of 40 mm (L) x 40 mm (W) x 15 mm (H) should be measurable.</p>
4.	Optics	<p>1. Effective sample navigation to locate the region of interest is required. Optical field of view (FOV) of 1.25 mm-0.25 mm is needed.</p> <p>2. An on-axis optical microscope of 10x objective lens and color camera with at least 2 μm resolution is needed.</p> <p>3. Software-controlled motorized zoom is required for fast-zooming on the region of interest.</p>
5.	Probes and Cantilevers	<p>1. Pre-mounted and pre-aligned cantilevers should be provided.</p> <p>2. Probe holders which can securely hold the tip-cantilever assembly should</p>

		<p>be provided.</p> <ol style="list-style-type: none"> 3. Change of cantilevers without the need for changing the scan-head should be possible. 4. At least 30 probes for tapping mode, 10 probes for contact mode, 10 probes for MFM and 10 probes for EFM should be provided.
6.	Isolation	Anti-vibration platform and acoustic enclosure for the SPM must be provided.
7.	Controller	<ol style="list-style-type: none"> 1. Minimum 20-bit digital to analog converters for scan control in the three directions (X, Y and Z). 2. The controller should have an ultra-low noise voltage amplifier (noise limit of 0.4 mV over a 400V scan). 3. The controller should include at least two lock-in amplifiers for advanced experiments. 4. The controller should include at least eight 16-bit analog to digital converters which can process high frequency ac signals. 5. The controller should be able to process signals at a sampling rate of at least 100 kHz. 6. The controller should allow access to controller and lock-in signals for customized and advanced experiments.
8.	Workstation computer	<ol style="list-style-type: none"> 1. Windows based Operating System with high speed processor. 2. Two LCD monitors to allow for dual PC monitor support.
9.	Maintenance support	<ol style="list-style-type: none"> 1. Warranty of at least 1 year from the date of installation should be provided. 2. In addition, AMC support

		for 1 year after warranty should also be provided.
--	--	--

Terms and Conditions

1. **Preparation of Bids:** The bids should be submitted in the two bid system, i.e., separate Technical bid and Financial bid.
2. **Submission of Bids:** The quotations/bids are to be submitted online through the NIC website (<http://eprocure.gov.in>), as per the instructions given. No hard copy is to be submitted.
3. **Pricing:** The prices quoted should be on **Freight on Board (FOB)** basis. The price quoted should be exclusive of any taxes and duties which should be separately mentioned. IIT Delhi is exempted from excise duty and enjoys concessional rates on custom duty. Necessary certificates will be issued on demand.
4. **Validity of the quotation:** The quoted prices should be valid for at least 3 months.
5. **Authorized agencyship:** In case the quotation is being submitted by an authorized agent of the principal company, the AUTHORIZED SALES AGENCYSHIP certificate from the principal company should be furnished along with the quotation.
6. **Proprietary Certificate:** If the items are proprietary in nature, a copy of the proprietary certificate must be furnished.
7. **Institute's Rights:** The Institute reserves the right to accept/reject all/any quotation without assigning any reason thereof.
8. **Discounts/Rebates:** Special discounts/rebate wherever admissible keeping in view that items are being procured for academic research at a public institution of national importance may please be indicated.
9. **Opening of bids:** The bids will be opened by a committee duly constituted for this purpose. The technical bid will be opened first and examined by a technical committee which will decide the suitability according to our requirements.
10. **Pre-qualification criteria:** An undertaking from the principal should be issued stating that necessary technical updates and warranty/AMC support will be extended to the bidder. The principal should be an internationally reputed company. Non-compliance of the tender terms, non-submission of the required documents, lack of clarity of specifications, contradiction between bidder specification and supporting documents, etc. may lead to rejection of the bid.
11. **Installation and Demonstration:** The supplier is required to install and demonstrate the working of the equipment within one month of the arrival at the site of installation.
12. **Warranty and AMC:** Warranty should be for the period of 12 months from the date of installation at IIT Delhi. In addition AMC for 1 year should also be provided after the warranty.

13. **Payment:** Payment will be made through an irrevocable Letter of Credit (LC). LC will be established in the favor of foreign supplier after submission of performance security. The applicable exchange rates will be taken on the date of the establishment of LC.
14. **User List:** Brochure detailing technical specifications and performance, list of academic and industrial establishments where the quoted equipment has been installed must be provided.
15. **Clarifications and Enquiries:** For any clarifications and enquiries regarding the submission of bids, please contact the Store Purchase Section, IIT Delhi (Tel: 01126591726).