(TO BE SUBMITTED ALONG WITH TECHNICAL BID)

TENDER NOTIFICATION NO: ----------

Phone No:- 27296326

TENDER FORM

The Registrar,
Delhi Technological University,
Bawana Road,
Delhi-110042

We the undersigned (herein after called as Contractor/Vendors/Suppliers) hereby offer to execute supply of items as per specification against which we have quoted over rates and for which this tender may be accepted at the rates stated there in and subject to the terms & conditions set forth for such items as may be ordered by the Registrar, Delhi Technological University or officer acting on his behalf.

Date this _____ Day of_____

Signature of Contractor _____

Address_____

_____

_____

I N D E X

S.No.	Particulars of documents	No. of pages

Guidelines/Procedure to be followed in introduction of 'e'-procurement solution:

1.**Payment of cost of Tender documents**: The collection of cost of Tender documents is dispensed away with, as there is no physical supply of tender documents and also to have absolute anonymity of bidder participating in e-procurement solution. The bidders can view/download the tender documents from the: https://govtprocurement.delhi.gov.in. .

2.Submission of bids: The bidders who are desirous of participating in 'e'-procurement shall submit their price bids in the standard formats prescribed in the Tender documents, displayed at : https://govtprocurement.delhi.gov.in. The bidder should upload the scanned copies of all the relevant certificates, documents etc. in the: https://govtprocurement.delhi.gov.in. in support of their price bids. The bidder shall sign on all the statements, documents, certificates, uploaded by him, owning responsibility for their correctness/authenticity and copies thereof may also be submitted in the office of the Asst. Registrar(S&P), DTU along with original EMD. However, documents of the bidders downloaded online or requisitioned subsequently only will form the basis for deciding the tender.

3.**Payment of Bid Security (Earnest Money Deposit):** The EMD shall be in the form of the Demand Draft/Pay Order/BG/Fixed Deposit Receipt of a scheduled bank issued in favour of Registrar, Delhi Technological University, Delhi and the zerox copy thereof is to be scanned and uploaded along with the bid, and the original shall be sent to DTU so as to reach before the date & time of closing of the bids; failing which bid will be rejected.

4.Price Bid Opening: The Price Bids will be opened online by the concerned officer/officers at the specified date & time and the result will be displayed on the: https://govtprocurement.delhi.gov.in. which can be seen by all the bidders who participated in the tenders.

5.Processing of Tenders:The concerned officer/officers will evaluate and process the tenders as done in the conventional tenders and will communicate the decision to the bidder online.

6.**Payment of Performance Guarantee**: The successful tenderer shall furnish a bank guarantee/FDR of the value of 05% of the basic cost of the item for a period of 60 days beyond the warranty period from a nationalized bank to ensure the satisfactory performance of item supplied. The performance guarantee is to be submitted at the time of installation / demonstration of equipments. In case the performance of the item is not found satisfactory, the amount of bank guarantee will be forfeited & credited in university account.

7. **Participation of Bidders at the time of opening of bids**: Bidders have two options to participate in tendering process at the time of opening of Bids:

(i). Bidders can come at the place of opening of bids (electronically) as done in the conventional tender process.

(ii). Bidders can visualize the process online.

8.Participation Financial Rules for e-procurement: The e-procurement system would be applicable for purchase of goods, outsourcing of services and execution of work as prescribed in GFRs.

ASSTT. REGISTRAR (S&P)
DELHI TECHNOLOGICAL UNIVERSITY,
SHAHBAD DAULATPUR, BAWANA ROAD,
DELHI – 110 042

TERMS AND CONDITIONS

TENDER FORMS ARE NOT TRANSFERABLE

Procedure for submission of bids: The bidders who are desirous of participating in 'e'-procurement shall submit their technical and price bids in the standard formats prescribed in the Tender documents, displayed at: https://govtprocurement.delhi.gov.in. The bidder should upload the scanned copies of all the relevant certificates, documents etc. after page-numbering all documents and tender document and prepare an index thereof in the: https://govtprocurement.delhi.gov.in. in support of their price bids. The bidder shall sign on all the statements, documents, certificates, uploaded by him, owning responsibility for their correctness/authenticity and copies thereof may also be submitted in the office of the Asstt. Registrar (S&P), DTU along with original EMD. However, documents of the bidders downloaded online or requisitioned subsequently only will form the basis for deciding the tender.

1. The Competent Authority of the University does not bind himself to accept the lowest or any tender.
2. ALTERATION IN THE SPECIFICATION.
   (i) The specifications mentioned/issued with this form of tender must not be altered by the Suppliers.
3. INCOMPLETE TENDERS
   Tender will not be considered if complete information is not given at the time of tendering or if the particulars and data (if any) asked for are not given.
4. CANCELLATION OF TENDER/ CONTRACT/ IN PART OR IN FULL IN CASE OF DEFAULT IN CONTRACT/SUPPLY:
   If the Supplier, in the opinion of the Institute fails or neglects to comply with any of the terms & conditions forming, part of the order issued, the head of institute shall without prejudice to any other right or remedies under the contract, has the right to cancel the contract /order by giving 15 days notice in writing to the Suppliers/firms without being liable to pay compensation for such cancellation.
5. Tender shall be uploaded as per guidelines indicated for e-procurement solution.
6. Demonstration of equipments has to be arranged by the suppliers, if desired by the institute. The technical committee may visit production facility if so desired for sample verification.
7. The quotation should be valid for a period of one year from the date of opening of the tender.
8. Rates are to be quoted in INR (Rupee terms) only and any revision thereof is not allowed after the tenders have been opened.
9. The delivery period should be clearly mentioned against each item, incase, the items are not readily available, ex-stock offer will be preferred.
10. Rates should be quoted F.O.R Institution. Sales tax/VAT/Octroi, Custom duty and other taxes leviable, should be mentioned clearly; indicating weather these are to be charged extra or included in the quoted price.
11. Consignment will not be insured at the Institute / University Cost.
12. Preference will be given to quotation pertaining to indigenous products, However, where suitable substitutes are not available and item need to be imported the following clarification / information should be given.

(i) Whether the item will be imported by the intended tenderers against its own import license or university will have to provide Custom Exemption Certificate (CDE).
(ii) Name and address of the foreign supplier.

(iii) Break up of CIF, and duty (if paid) should be given along with service charges if any.
(iv) Delivery period including information about mode of dispatch and possible duration (after dispatch) for receipt of item at the port.
(v) Whether the item required any special preparation for installation. In case yes, full details should be given regarding operation maintenance of the items.
(vi) In case of costly/sophisticated items whether the tenderers will arrange any special training regarding operation / maintenance of the items.
(vii) Nature of assurance for the supply of spares after the warranty period.

13. The payment will be made within 30 days after the successful demonstration/installation of the equipment. Rejected items/goods should also be removed within 30 days after which no responsibility will be accepted by University.
14. Conditional quotations and/or incomplete quotations in any respect will be rejected.
15. In case you cannot quote for one or more of the items asked for in the tender the word “NOT QUOTED” (in the rate column) should be indicated.
16. The specification of the item quoted by the firm should confirm to the University specifications. Confirmation, in this respect should be specifically mentioned in the tender. Where the tenderer feels that the specification of the item not fully given or differ, from the specification of the item mentioned by the university, the exact specification of such item should be attached with the tender indicating the item quoted.
17. The Firm is required to link the University specifications with catalogues & leaflets/literature for each item. Details features, for compliance of specification should be provided on specification sheet & appropriate reference i.e. page no. & para of literature, leaflet wherefrom the relevant information has been checked, should be indicated.
18. EARNEST MONEY:- EMD should be attached with the technical bid**.** The EMD shall be in the form of the Demand Draft/Pay order/BG/Fixed Deposit Receipt of a scheduled bank issued in favour of Registrar, Delhi Technological University, Delhi. Zerox copy thereof is to be scanned and uploaded along with the bid, and the original instruments shall be sent to DTU so as to reach before the date of closing of the bids. Failure to furnish the original instrument before the closing of the bid, will entail rejection of bid and blacklisting. If the tenderer after acceptance of the tender refused to take up the purchase order, his Earnest Money will be forfeited. Any tender received without / less Earnest Money deposit shall be summarily rejected.
19. The Competent Authority reserves the right to reject any or all the tenders without assigning any reason, at any stage, and his decision will be final.
20. The supplies shall have to be made within the period specified in the purchase order failing which the order shall be cancelled and the Earnest Money will be forfeited. However, in exceptional circumstance and, on written request, from the supplier/tenderer, extension of date for supply of the material will be considered. Extension in supply period is at the sole discretion of the competent authority.
21. Service manuals, wherever available/ required, should be provided along-with the Equipments.
22. A WARRANTY certificate should invariably be supplied along with the item at the time of delivery. Non-Compliance of the same will result in non-acceptance of the item from the firm with whom the order was placed beside rejection of the tender.
23. The Competent Authority reserves the right to levy liquidated damages up to 2% of the value of the order for delayed supply. If the supply is delayed beyond the extended period, the University reserves the right even to cancel the order and forfeit the EMD of the firm/ tenderer.

24. PERFOMANCE SECURITY DEPOSIT:- The successful tenderer shall furnish Performance Security Deposit of the value of 05% of the basic cost of the item in the shape of Bank Guarantee/FDR etc. from a nationalized bank pledged to Registrar, DTU, for a period of 60 days beyond the warrantee period to ensure the satisfactory performance of item supplied. The performance guarantee is to be submitted at the time of installation / demonstration of equipments. In case the performance of the item is not found satisfactory, the amount of bank guarantee will be credited in university account.
25. DEFAULT: - In the event of default and unsatisfactory service of the contractor/Supplier firm, the DTU will be at liberty to repair/get the item serviced from other party at the cost of supplier/ contractor/ tenderer.
26. In case of software items, the suppliers should ensure that:-
    i. Legal software is supplied in original sealed pouches / P. K. T.
    ii. A license agreement is enclosed with it.
    iii. A registration card is available for software.
27. FAILURE AND TERMINATION: - If the Contractor / Supplier fails to deliver the stores or any installment thereof within the period fixed for such delivery or at any time repudiates the contract before the expiry of such period, DTU may without prejudice to the right of the purchaser may recover damages for breach of the contract.
28. The technical & financial bids of only those bidders will be opened who fulfill the eligibility criteria and the required whose documents are found in order. If any of the date earmarked for opening of technical or financial bids happens to be holiday, the bids will be opened on the very next working day.
29. For any query/clarification in r/o technical aspect of the enquiry, HOD (Applied Physics), DTU may be contacted.
30. Disputes, if any, arising out of this tender shall be subject to exclusive jurisdiction of Courts of Delhi/New Delhi only.

ASSTT. REGISTRAR (S&P)
DELHI TECHNOLOGICAL UNIVERSITY,
SHAHBAD DAULATPUR, BAWANA ROAD,
DELHI – 110 042

CHECK LIST OF DOCUMENTS TO BE SENT WITH TECHNICAL BID.

S.No.	Particulars of documents	Page no.	No. of pages
1.	Proof of EMD (mention amount with instrument number and date)		
2.	Proof of PAN no. (mention no…….)		
3.	Proof VAT/Sales Tax Registration. (mention no. ……)		
4.	Brochure/Leaflets/Technical Information of the item(s), if any		
5.	Page no. 1 of Tender Document, duly signed.		
6.	Detailed Technical specifications, Terms & Conditions and Delivery period to be submitted on firm's letter head		
7.	Warranty Certificate		

Note: All copies of above documents should be duly signed and stamped by the tenderer before uploading.

Signature of tenderer: ……..
Name:……..
Name of firm: ……..
Telephone No……

GOVERNMENT OF NATIONAL CAPITAL TERRITORY OF DELHI

DELHI TECHNOLOGICAL UNIVERSITY

(FORMERLY DELHI COLLEGE OF ENGINEERING) Ph. 27871018

SHAHBAD DAULATPUR: BAWANA ROAD: DELHI-110 042

No.F.211/8-14/10-11/P/ Dated:

NOTICE INVITING TENDER

E- Tenders along with illustrated literature/leaflets for the supply/execution of item(s)/stores/work detailed below are invited in two-bids system through 'e' procurement solution only as per the guidelines and terms & conditions given in tender document - details of the NIT along with terms & conditions, specifications etc. can be seen/downloaded at/from the website.

The interested tenderers should upload duly signed tender form and their bids along with scanned

copies of all the relevant certificates, documents etc. in support of their technical & price bids – all duly signed - on the: https://govtprocurement.delhi.gov.in. latest by **14/03/2012 up to 3.00P.M. An index prepared after pagination of all documents may also be uploaded** The technical bids will be opened online on **14/03/2012 at 3.30 P.M** {those bidders only whose original instrument of EMD amount is dropped in Tender Box placed in the office of Asst. Registrar (S&P)} in the presence of the bidders who wish to be present and will also be displayed on the website. For participation in the tender through e-procurement solution, the tenderers are required to have digital certificate and get registered with application Service Provider NIC.

Tender document is also available for viewing on the website of Delhi Technological University, Delhi at www.dce.edu and www.dce.ac.in

Yours faithfully,

EMD: Rs. 1,00,000/-

Asst. Registrar (S&P)

S. No	Item Description	Qty
1	Scanning Probe Microscopy (AFM and related microscopy) System with Accessories	1 No.

Technical Specifications on next page ……

SPECIFICATIONS OF SCANNING PROBE MICROSCOPY (AFM AND RELATED MICROSCOPY) SYSTEM

1. **Measuring Modes**:

Following measuring modes should be provided by offered specifications of device. Both software and necessary hardware should be provided to do following experiment: AFM: Contact mode, Non-contact and Semi-contact mode, Intermittent/Dynamic/Tapping mode, Lateral Force Microscopy, Phase Imaging, Fluid Imaging, Scanning Tunneling Microscopy (STM) with electrical noise level: <10pA (peak – to – peak), Force Modulation Microscopy (FMM), Magnetic Force Microscopy (<FM), Electrostatic Force Microscopy (EFM), Nanolithography and Nanomanipulation, Lift mode, Dark lift mode, Conductive AFM, AFM operation in liquids, Force-Distance (F-d) curves capabilities/ Spectroscopy.

2. General Requirement:

Must be a sample-scanning system, maintaining the X,Y and Z position of the constant with respect to the laser and photo detector position at all times.

3. Scanners:

XYZ tube scanner design, Opto-mechanical scan linearization compensating for piezo hysteresis, creep and non linearity, Position sensors mounted to actual scanner (not dummy), Unipolar voltage driving scanner in XYZ, closed loop Z for force curves and lift mode, System allows turning off closed loop while engaged while retaining XY registry.
For large scans, maximum scan area more than 90 µm X 90 µm in XY and Z-scan range above 7 µm.

Optional: Scanner should be de-coupled and closed loop in XY and Z. Decoupled scanner in XY & Z with 5 µm x 5µm. in XY and Y-scan range above 7 µm.

4. Sample Size:

Stage should able to accommodate maximum 45mm x 45mm, 18mm thick or above.

5. Sample Stage Moment:

Above 5 mm in X and Y, about 5 mm in Z directions and motorized with software controlled pitch and tilt corrections.

6. **Tip-Sample Viewing System**:

Built-in-on-axis Optical Viewing System with video camera with 2 µm (or lower) resolution and 450x or better magnification.
The basic configuration should include minimum 10 each of Contact and Non-Contact probes, Conductive AFM, MFM and STM probes and required calibration standards. Provide the cost of Additional Probes and other consumables, if any.
Offer suitable integrated Acoustic and Vibration Isolation Platform/Table along with the basic configuration.
Offer 3-5KVA UP with 30 minutes back-up, HP Photo Quality Color Laser jet Printer with the basic configuration.

7. Required Optics Features:

Optics FOV 1.25mm – 0.25mm, 5x software controlled, motorized, 3.3:1 continuous optical zoom, 2 µm optical resolution with standard 10x objective, 0.75 µm optical resolution with optional 50x objective, clearly resolves 1 µm grid, On axis optical view without any parts (such as prisms) between objective and tip/sample, Bright white light LED illumination under software control, thermally shielded from AFM head and scanner.

8. Required System Performance:
System achieves atomic resolution on graphite or mica with the large area (90 µm XY) scanner, System noise floor in Z, open loop < 0.05nm RMS, on large area (90 µm XY) scanner, Closed loop XY noise < 1.2nm RMS @ 1kHz handwidth, Z-linearizer noise < 0.2nm RMS @ 625 Hz bandwidth, Open loop XY drift < 1nm/min, Closed loop XY drift < 3nm/min.

9. **Required Microscope Features**:
Non Vertical beam bounce scheme for optical lever, Orthogonal laser alignment, Kinematic head mount.

10. Required Modes and Options:
Has to provide autotune and auto-phase adjust, finding cantilever resonance and adjusting phase measurement with a single click. Has to include full dual lock-in that can provide X or Y components of the cantilever oscillation.

Contact and tapping mode in air and in liquid.

Intelligent lift mode for EFM and MFM. In the Liftmode technique the sample's topography should be determined on a continuous first pass over a scan line. The data are stored and a second parameter, such as magnetic field, should be determined by an amplitude or phase shift of the cantilever vibration on a second pass of the same scan line. This should get accomplished by lifting the probe a set, but short (e.g. 50nm) distance above the surface. To guarantee correct lift-mode imaging, it has to be possible to use closed loop Z to achieve the desired lift height. The, while using the stored data from the first pass scan, the exact topographical changes along the scan line are tracked while monitoring and storing the cantilever's interactions with magnetic forces emanating from the samples surface. The MFM and topography images should get displayed simultaneously in real-time as acquired line by line. Other methods, eg which simply skim the tip some height above the sample without regard to topography are not acceptable.

Must be able to perform all of the following SPM modes without changing and removing scan head; contact and Tapping Mode AFM, STM, Lateral Force Microscopy (LFM), Force Modulation Microscopy (EFM), Conductive AFM (CAFM), Magnetic Force Microscopy (MFM), Electric Force Microscopy (EFM). The same microscope head must support all advanced modes. Conductive AFM must have with user-selectable gain range of 103 – 1011 Voltas/A and typical noise of 250 fA at highest gain range. Change in gain stage does NOT require change of probe holder. Must offer dark lift mode for conductive AFM..

Electrochemical AFM/STM must be capable of Cyclic Voltammetry, Linear Sweep Voltammetry, Chronamperometry, Chronopotetiometry and Pulse technique.
The ECSPM cell must offer an integrated counter electrode and real reference electrode. Must offer closed loop pint and shoot probe positioning for every mode.

11. Vibration Isolation and Environment Control Rquirements:
System has to be delivered with a passive vibration isolation table as well as with a protective cover to decrease air flow across the scan area.

12. Ease of Use and Productivity Requirements:
Must offer pre-mounted and pre-aligned cantilevers, must use mechanical clip for probe mounting, must use kinematic mount for mounting probe cartridges, must be able to change cantilevers or samples without removing scan head.

13. Control Electronics Requirements:
Must have 20-bit digital-to-analog converters for scan control in X,Y and Z. Must have ultra low noise high voltage amplifier (0.4 mV over 400V scan), Controller-Computer connection via

industry standard USB2, Must have two independent software controlled lock-in amplifiers with separate amplitude and phase outputs, Must have 8 dedicated 100 kHz 16-bit A/D converters, Requires a completely automatic engage under software control into feedback on the sample surface, using the stepper motor and the Z-piezo incrementally to find the lowest possible imaging force with a minimum of false engages and a minimum of user interaction, Minimum sampling Rate of 100 kHz, All collected data has to be saved into a buffer, Has to provide access to controller signals.

14. System Computer & Software:

Computer: Intel Core-2 Duo, i3 processor with Windows XP operating system, 3 GHz or faster CPU, 3GB RAM, 160 GD Hard Drive, 52 x CD-RW, 19" LCD Monitor provided (1280 x 1024 pixel, Super VGA graphics, DVI) and color laser jet printer.

Software: Suitable software for data acquisition, image processing, analysis and presentation.

15. Data Acquisition Software Requirements:

Can display at least 16 imaging window, if more than 2 channels selected to be displayed they all have to show either trace or retrace. A mixture of trace and retrace is not acceptable, Real-time Software with on-the-fly parameter update (i.e. during image acquisition) including feedback gain, drive amplitude, scan rate, setpoint, lock-in filter, lock-in gain scan size, pixels, offset, must have generalized multi channel spectroscopy capability. Must have generalized multi meter signal display capability, Must have intelligent LiftMode for MFM and EFM, Must be able to sweep frequency in both directions in Auto-Tune, Must have phase Adjustment capability in Phase Imaging for maximum sensitivity (to set the Phase to 'zero' at the operating point), Must have probe-positioning routing with linking capability to I/V and force curves, Can display external signals as images or spectroscopy data, needs capability to overlay the amplitude & phase signals in Auto-Tune, Single Click transfer of partial images into analysis suite for immediate full analysis during ongoing data acquisition.

16. Required Nanolithography Features:

Must include basic nanolithography capability, Must be able to import Postscript level-1 files, Must allow single click transfer of data from the image acquisition suite.

17. Optional Accessories:

i). Ambient to High temperature Stage above 100 deg. C or -35 deg. C to 250 deg. C.
ii). A suitable cell for inert gas atmosphere operations or liquid medium imaging and operational in sample environment at temperature ranges from 4 C to 60 C in liquid medium and up to 160 C in air.
iii). Variable current Conductive AFM/Low current STM with current noise: < 3pA, gain: **10^3, 10^4 upto 10^9** V/A. This is required to measure the current in non-conductive samples.
iv). External Magnetic Field generator up to a range of -300 to + 300 Gauss
.v). Nano-indentation option for the force > 1mN.
vi) Confirm that the offered AFM can be upgraded for NSOM and can be integrated with Raman Spectroscopy System.
vii). Option remains for accessories to be installed in future.
viii). Suitable number of consumable spares.