



# झारखण्ड केन्द्रीय विश्वविद्यालय Central University of Jharkhand

Brambe, Ranchi, Jharkhand, 835205

CUJ/CoE-GEET/NIT/2015/1

Dated: 08-10-2015

Sealed quotations are invited for the articles enclosed in the separate sheet subject to the terms and conditions given below. The quotation should be addressed to Prof. S.K.Samdarshi, (coordinator and PI of the Project), Centre for Energy Engineering, Central University of Jharkhand, Ratu-Lohardaga Road, Brambe, Ranchi, 835205 and should reach on or before 29/10/2015. Quotations will be opened on the next working day.

## TERMS AND CONDITIONS

1. Quotations without any erasures and overwriting must be submitted in sealed cover addressed to the, Prof. S.K.Samdarshi, Centre for Energy Engineering, Central University of Jharkhand, Ratu- Lohardaga road, Brambe, Ranchi- 835 205 super- scribed Tender/ Enquiry No. and the due date failing which, quotation may be ignored. Tender/ quotation should be sent through Post/ Courier/ By Hand.
2. The rate quoted should be inclusive of all packing, forwarding, commissioning & installation, sales tax, freight and insurance charges and should remain valid for our acceptance for minimum period of six (6) months from the due date of opening of the quotations. The quotation should be CUJ consignee's site basis i.e. Central University of Jharkhand, Ratu Lohardaga Road, Brambe, Ranchi.
3. Manufacturer's name of company of origin of materials offered must be clearly specified. Complete details of illustrated literatures/ or drawings, in original (not photocopies), if any must accompany all quotations.
4. The University will not entertain requests for revision in prices once quoted for whatever reason after the tenders are opened during the period of contract.
5. All goods must be delivered at our University at Ratu- Lohardaga Road, Brambe, Ranchi for inspection by our inspecting authority.
6. Full payment will be made within 30 days of the receipt and acceptance after inspection of supplies at destination. The quotations containing different payment terms are liable to be ignored.
7. All goods must be delivered at our university at Ratu- Lohardaga road, Brambe, Ranchi (Stores & Purchase Section) after confirmed order. The University will provide DSIR certificate, Educational certificate if necessary. The University will not be responsible for issuing any Road Permit.
8. Only Manufacturer/ Authorized dealer/ firms of repute dealing in the items listed in the

quotation having experience in sale and repair/ maintenance, need apply.

9. Only latest models/ mentioned models of items need to be quoted.
10. It should be mentioned specifically whether price quoted includes all taxes and duties. Salestax and/ or other duties legally liable and intended to be claimed should be distinctly shown in the tender.
11. VAT/CST Registration Number and its validity should be indicated. Documentary evidences be supplied/ attached to the tender documents.
12. All rates shall be indicated both in words and figures. Where there is difference between the rates quoted in words and figures, rate quoted in words will prevail.
13. The supplier shall make delivery of the items within the stipulated period from the placement of the purchase order. The purchase order would be placed after assessing the requirement and hence, actual quantity may increase/ decrease
14. The Tender Document for items will be Two- Bid system consisting of Technical Bid and Price Bid. The Tender Document will be submitted item-wise in two separate sealed covers clearly mentioning on the envelope the details of items for which Bid is submitted.
15. The Bidder must enclose point wise compliance of the technical specifications of each item.
16. The price of Tender Document is Rs. 1000/- only (One Thousand rupees only) (nonrefundable).  
The Tender Document price may be attached to the Technical Bid in the form of Bank Draft in favour of "Central University of Jharkhand" payable at Ranchi.
17. The Tender Documents comprising of Price- Bid, Technical Bid and Earnest Money Deposit of Rs. 80,000.00 only (Rupees Eighty Thousand only) (refundable) in the form of Bank Draft in favour of "Central University of Jharkhand" payable at Ranchi kept in the separate envelope super- scribed with the name of the same. The Tender Document must be enclosed with Earnest Money Deposit otherwise the tender document will be rejected. All the documents must be enclosed in a bigger size envelope super- scribed with the tender number and item name.
18. Only those Manufacturers liable to participate having ISO 9001 and ISO 14001 certification.
19. All legal disputes shall be under the jurisdiction of Jharkhand High court, Ranchi.
20. The University reserves the right to accept or reject any Bid, without assigning any reason Thereof. No correspondence in this regard will be entertained.
21. All the participating firms should attach supporting documents in favour of:
  - a) Have at least 5 years of experience in the field.
  - b) Have an annual turnover of at least Rs. 50 Lakh per annum for each of the last 3 years (i.e 2011-12, 2012-13 & 2013-14) (Agency should produce a certificate from their Audit Firm in respect of turnover for the mentioned period)
  - c) Be registered with Directorate of Industries or Small Scale Industries or any other appropriate authorities.
  - d) Have valid TIN Number for registration under VAT/CST

- e) Have PAN for Income Tax. Supporting documents for Income Tax return for the last Twoyears (i.e 2012-13, 2013-14).
- f) Documents as proof in respect of Technical bid along with supporting documents.
- g) Profile and Track Record of the agency. (3 years)
- h) Copy of signed Balance Sheets of last three years.
- i) Minimum 5 installations report of the quoted model in India.
- j) Detailed terms & conditions regarding performance/ warranty/ bank guarantee/ Inspection/LD/ penalty for delayed supplied will be elaborated in purchase order. For proprietary items/ single manufacturers or Government manufacturers, proper certification in original is to be attached along with the Technical Bid.

**Instrument specifications**

Item name	Technical Specification	Quantity
<b>Atomic Force Microscope (AFM)</b>	<p>Scanning Probe Microscope(SPM) modes included:  <b>In Air:</b></p> <ul style="list-style-type: none"> <li>- Contact AFM</li> <li>- Non-contact /Intermittent Mode AFM</li> <li>- Lateral Force Mode (LFM)</li> <li>- Phase Imaging</li> <li>- Force Modulation Microscopy</li> <li>- Scanning Tunneling Microscopy(STM)</li> <li>- Magnetic Force Mode and Electrostatic Force Mode (MFM/EFM)</li> <li>- AFM Nano-Lithography and Nano-manipulation (Force and Electro-oxidative)</li> <li>- Spreading Resistance Imaging (SRI)</li> <li>- Scanning Capacitance Imaging (SCI)</li> <li>- Scanning Kelvin Probe Microscopy (SKM)</li> <li>- Piezo Response Force Microscopy</li> <li>- AFM spectroscopies</li> <li>- STM spectroscopies</li> <li>- Any other modes which are not mentioned above, bidders may offer those modes separately</li> </ul> <p><b>Single XYZ peizo scanner:</b></p> <ul style="list-style-type: none"> <li>- Scanners must be single peizo tube in comparison to decoupled or flexure based scanners for highest resolution, low noise &amp; high scanning speed. No decoupled or flexure stage scanners will be considered.</li> <li>- Scanning type - XYZ by sample without any motion of the tip in XYZ</li> <li>- Scanning range: 100x100x10um or better. Must be able to operate in both open and closed loop. The same scanner must have capability to work as small area scanner &lt; 5x 5 um for critical resolution.</li> <li>- Scanner should low voltage mode with XYZ range of 3x3x2 um or better.</li> <li>- All modes should be performed by closed loop controlled scanner</li> </ul> <p><b>SPM Controller:</b></p> <ul style="list-style-type: none"> <li>- Digital signals control</li> </ul>	<b>1</b>

	<ul style="list-style-type: none"> <li>- Possibility of using several feed backs simultaneously</li> <li>- Up to 8 signals should be detected during single pass or more</li> <li>- DSP processor 320 MHz floating-point</li> <li>- USB interface with PC</li> <li>- Integrated closed loop control</li> <li>- +/- 10 V module for Bias Voltage control and lithography operations</li> <li>- Three 16 bit controllers for each channel (X,Y,Z).</li> <li>- Controller must provide lock-in capable of 360 degree quantitative cantilever phase detection, 0 Hz to 5 MHz or more.</li> </ul> <p><b>Scanner Closed-loop control and noise level:</b></p> <ul style="list-style-type: none"> <li>- Non-linearity of XY: 0.1%</li> <li>- Non-linearity of Z: 1%;</li> <li>- Noise level of XY: 0.3 nm (Closed-loop – on) or better 0.02 nm (Closed loop - off)</li> <li>- Noise level of Z: 0.03 nm (Closed-loop – on) or better</li> </ul> <p><b>Easy to use software and automation:</b></p> <ul style="list-style-type: none"> <li>- Automated software driven control of measurement modes</li> <li>- Automated tip-to-sample approach</li> <li>- Fully Automated AFM and STM measuring heads exchange</li> <li>- Automated laser/photodiode alignment of optical feedback geometry</li> <li>- Motorized focus and continuous zoom of the optical viewing system with resolution 3µm or better</li> <li>- Must have universal cantilever holder.</li> </ul> <p><b>Computer &amp; Workstation:</b> A compatible desktop computer with monitor (23”) with latest Windows operating system with high speed processor and Video capture capability for onscreen.</p> <p><b>Accessories/Manuals/Warranty:</b></p> <ul style="list-style-type: none"> <li>- At least 50 probes for above mentioned AFM applications/modes</li> <li>- Set of calibration standards for calibration piezo scanners</li> <li>- Complete toolkit enough to operate with device</li> <li>- English version of operating and service manuals</li> <li>- System should have at least 1 years warranty</li> <li>- Software update should be free of charge for life time device use.</li> <li>- Company should provide local service support</li> <li>- HOPG test sample for STM</li> </ul> <p><b>The following options should be available for upgrade: (OPTIONS)</b></p> <p><u>Heating stage</u></p> <ul style="list-style-type: none"> <li>- Possibility to operate with up to 150 °C temperature range;</li> <li>- Temperature stability - 0.05 °C.</li> </ul> <p><u>Hardware Nanoindentation</u></p> <ul style="list-style-type: none"> <li>- A suitable Hardware for Nanoindentation facility to measure hardness of samples.”</li> </ul>	
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