

Applied Mechanics, IIT D
NIQ for Item 2: Instrumented Nanoindenter

State of art nanoindenter capable of performing quantitative testing for characterization of materials at nano scale level. The device should be capable of conducting various tests such as evaluation of mechanical properties, hardness, scratch etc.	
Device	Description
Nanoindentation device	<p>The instrument should be capable of performing hardness and nano-scratch testing</p> <p>Basic module is required for the measurement of force and displacement.</p> <p>The instrument should contain:</p> <p>Maximum load: 500 mN Load resolution:40nN or better Maximum displacement: 200 μm or better Displacement resolution: 0.04 nm or better</p>
Sample stage and holder	Positioning accuracy = 1μm or better, step resolution 0.25 μm or better, motorized sample manipulation (X and Y table), sample stage, holder, accessories
Indenter	The instrument should have pre-mounted Berkovich diamond tip indenter of 100 μm diameter, conical indenter for scratch test with 90° cone angle and 50 μm tip radius, low thermal drift of 0.15 nm/s or better
Materials for calibration	Fused quartz for hardness calibration.
Anti-vibration table	Integrated active anti-vibration table for the complete instrument platform, environmental isolation system
Microscope	Magnifications upto2000 X or better, standard high resolution color video camera (CCD camera), scanning probe microcopy (SPM) imaging
Electronics and computer package	External communication connectivity USB 2.0 or better, computer workstation with monitors, electronic control module, full software package for data acquisition and analysis, user friendly software that allow for easy calibration/operation/data acquisition at high rates and data analysis
On-site Installation & Basic Training	System installation, verification of performance, hardware & software training, instrument calibration
Warranty	3 Years
<p>Include the following modules as <u>optional items</u>.</p> <ul style="list-style-type: none"> - Nano-Dynamic mechanical analysis (DMA) - Heating/cooling stage option (for high temperature measurement) -Cell mechanics package. 	

General condition: 1. The vendor should have sold the quoted instruments in India before, and should be able to arrange for "on site" demonstration on request. Purchase committee needs the list of the references where the instruments have been sold.
2. The purchase committee will also give priority to after sell service record of the vendor.
3. Deposit EMD (Earnest Money) amount of **2.5 Lakhs for** Item 2: Instrumented Nanoindenter through demand draft drawn in favor of "**The registrar, IIT Delhi**" or bank guarantee of equal amount can be provided.
4. Sealed quotations in two bids (Technical and commercial in separate sealed envelopes) are invited for Item 2: Instrumented Nanoindenter. The vendor bidding for Item2: Instrumented Nanoindenter, must include two separate envelopes containing (Technical and commercial bid) put under a single external envelop, superscripted "Quotation for Item2:Instrumented Nanoindenter". Please include a detailed compliance statement with explanation.

General guidelines:

1. Please quote the above item on **FOB** (Freight on Board) mode as per the IIT Delhi policy.
2. If the above system is a proprietary item then a Proprietary Certificate should be enclosed.
3. Letter from the manufacturer specifically to quote for this tender is to be attached for authenticity of dealership/ agency and the dealer should be authorized service provider.
4. Vendor should get a fresh certificate directly from their product principal's clearly mentioning about three years warranty of the equipment to be delivered from the date of installation.
5. The lowest quotation however does not depend upon the warranty period and AMC price beyond 3 years should be mentioned separately.
6. The lowest quotation does not depend on the optional items included.
7. The validity of the quotation should be at-least three months, the vendors will do the **installation, training and demonstration in the IIT Delhi premises without additional charges.**
8. Taxes, terms and conditions should be clearly mentioned.
9. Specifications form should be similar to the given specification sheet.
10. Compliance statement for the required specification should be attached.
11. Payment terms and conditions should be clearly mentioned. No advance payment is encouraged by IIT Delhi.
12. Firm **MUST** provide a compliance statement vis-à-vis specifications in a "tabular form" clearly stating the compliance (please mention numerical data wherever necessary) and giving justification, if any supported by technical literature with clear reference of page number, paragraph or lines. This statement must be signed, with the company seal, by the tendered for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification of the tender. The quotation should be complete in all respects. (as per IIT-Delhi rules).
13. The bidder must be a reputed Original Equipment Manufacturer (OEM) or an authorized local agent.
14. Further, if the Indian agent quotes for the above mentioned item on behalf of the foreign supplier, then the Indian agent should be enlisted with the department of Expenditure, Ministry of Finance (Government of India). Copy of the supporting documents has to be enclosed with the quotation. Further, in the letter it must be clearly stated from the principles that the bidder is an authorized agent.
15. Vendor should be able to arrange for onsite demonstration of technical specifications on request.
16. The products will be used for educational purposes. Any applicable academic institution discounts should be offered and stated clearly.

The Institute/ purchase committee has the right to accept or reject any bid or all quotations without assigning any reason whatsoever.

**Dr. Rajesh Prosad,
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**The quotations should reach the Department of Applied Mechanics , IIT-Delhi by 1200 hrs
9th January, 2013.**