

**Tender Notification for the procurement of a " High Temperature Nano-Indenter" at IISc
(Last Date for submission of tenders: 20th June 2016)**

Dear Sir/Madam,

Kindly send your best quotation for the following item on C.I.P. Bangalore basis. Your quotation should clearly indicate the terms of delivery, delivery schedule, E.D., payment terms etc. The tender should be submitted in two separate sealed envelopes - one containing the technical bid and the other containing the commercial bid, both of which should reach us, duly signed on or before 1700 hours 30th June, 2016. Please make a note of the updated deadline.

Please enclose a compliance certificate along with the technical bid.

Specifications for the product

	Must have requirement	Optional requirement
Temperature Related Requirements		
Maximum temperature	$\geq 800\text{ }^{\circ}\text{C}$	Modular upgrade to higher temperatures in future releases
Minimum temperature step	$\leq 1\text{ }^{\circ}\text{C}$	$\leq 0.1\text{ }^{\circ}\text{C}$
Temperature accuracy at 800 °C	$< 1\text{ }^{\circ}\text{C}$	
Temperature stability at 800 °C	0.1 °C/h	0.01 °C/h
Heating of the sample and indenter	Independent	
Environmental requirement	In-built environmental / purging chamber	
Load Related Requirements		
Maximum load at 800 °C	$\geq 10\text{ N}$	Multiple load modules (high load and low load)
Load resolution at 800 °C	$\leq 100\text{ nN}$	
Noise floor in load at 800 °C	$\leq 10\text{ nN}$	
Minimum load at 800 °C	$\leq 100\text{ nN}$	
Loading direction	Vertical or Horizontal	

Displacement Related Requirements		
Maximum displacement while indenting (z)	$\geq 10 \mu\text{m}$	
Resolution (z)	$\leq 1 \text{ nm}$	
X and Y displacement	$\geq 50 \text{ mm}$	
Resolution (X and Y)	$\leq 10 \text{ nm}$	
Indentation area at 800 °C	$\geq 1 \text{ mm diameter}$	
Maximum drift at 800 °C	$\leq 2 \text{ nm/s}$	
Maximum drift at room temperature	$\leq 0.1 \text{ nm/s}$	
Indentation speed at 800 °C	$> 2 \text{ indents per seconds}$	
Other Critical Requirements		
Creep duration at 800 °C after temperature stabilization	$\geq 30 \text{ minutes}$	
Minimum measurable creep rate at 800 °C	10^{-5} s^{-1}	10^{-7} s^{-1}
Capability to perform stress jump and stress drop test	Yes	
Fatigue frequency range at 800 °C	At least 1 Hz to 50 Hz	
SPM capability	Required at 800 °C	
Indenter material	Range of options including diamond, sapphire, BC, etc.	
Indenter shape	Range of options, including Berkovich, spheroconical, wedge and spherical types	
Optical microscope	$> 100 \text{ X}$	
Service and training team	In India	Bangalore/ Southern India
Warranty and annual maintenance contract	1 year	Up to 3 years
Acceptance criterion	Demonstration of all	

	aforementioned technical specifications on site after installation	
Payment terms		LC will be opened but money will be released only after satisfying acceptance criterion or 30 days after delivery, whichever is earlier. The vendor will have to give the power and other requirements for installation on the machine immediately after selection so that the necessary infrastructure can be ready before delivery

Terms and Conditions

1. Two bid system (separate technical and financial bids) in sealed tenders
2. The technical bid must clearly specify the prescribed technical specifications without including the prices. Vendors who include price information in the technical bids will be automatically disqualified.
3. Technical bids will be opened first. IISc may seek clarifications after opening of technical bids, and may ask them to perform some example experiments on the sample given by IISc to demonstrate the promised technical specifications. Vendors may be required to give presentations. There are several items that require information to be provided by the supplier. If information is not provided against any of these items, this will disqualify the supplier. After technical evaluation by a committee, vendors may be asked to re-quote in a specific format to facilitate comparison of prices. IISc also reserves the right to cancel the tender at any time without assigning any reason whatsoever.
4. Price bids of only technically qualified vendors will be considered and the vendors will be informed the day of opening the price bids.
5. The price bids must offer CIF Bangalore prices.
6. Prices to be quoted separately for baseline system and options. Prices will should be quoted in adequate detail with relation to packing details to cover insurance compensation in case of damage to any specific modules

7. Indicate separately price of spares listed above in terms of unit cost. The price of these spares will be included in the price comparison. Any additional spares recommended by the company will be considered for ordering but not included in the comparison. The buyer reserves the right to make the final decision on ordered spares
8. Indicate price for annual maintenance contract.
9. The payment will be by letter of credit: payable 80% on shipping, 20% after satisfactory installation and acceptance.
10. Indicate Delivery period
11. Order will be placed on lowest bid from technically qualified vendor

- The tender documents can be sent at the following address:

Dr. Praveen Kumar

Assistant Professor

Department of Materials Engineering

Indian Institute of Science, Bangalore 560012

Karnataka (INDIA)