

TENDER

FOR

Supply and Installation of

SCRATCH TESTER

in

BIT MESRA, Ranchi



Tender No.: IC/000421

Tender date: 23 Sept. 2021

Last Date of submission: 21October, 2021

Birla Institute of Technology, Mesra

Birla Institute of Technology, Mesra, Ranchi invites tender for supply, installation, commissioning, testing, demonstration and training of **SCRATCH TESTER** , as per specifications given in the Annexure attached to the Tender.

Tender Reference No.	IC/000421
Last Date and Time for receipt of Tender	21/10/2021 at 1500 Hrs
Address for Communication	As Stated below in the Instructions to the bidders.
Contact Telephone Numbers (For Technical specification / clarification)	7687849002
For technical Details Contact Dr. Arkadeb Mukhopadhyay	arkadeb.mukhopadhyay@bitmesra.ac.in

INSTRUCTIONS TO BIDDERS

All interested vendors are requested to send their sealed quotation for supply of the above item under two bid systems in the following manner:

- a) Envelope – I: Technical Bid.
- b) Envelope – II: Financial Bid.

NOTE: The bid documents are not transferable and the firm's seal and signature of the authorized official must appear on all papers and envelopes submitted.

Both the envelopes should be sealed, signed, marked and kept in a bigger envelop superscribed with the Tender Reference No. and Tender notice detail as appended hereunder.

TENDER FOR SUPPLY OF SCRATCH TESTER
TENDER REF. NO: IC/000421, DATE: 23/09/2021
LAST DATE FOR SUBMISSION:21/10/2021 Till 1500 Hrs.

Dy. Registrar (Purchase & MM)
Birla Institute of Technology, Mesra
Ranchi - 835215.

From: M/s -----
Contact No: -----
E-mail ID: -----

Sr. No.	Criteria	Comply (Yes/No)	Page number in support of compliance. Deviations (if any) should be mention clearly and details thereof should be indicated.
1.	The supplier must have sold at least 3 SCRATCH TESTER within India in last 5 (five) years. The supplier should provide list of installation in India with all contact details and model details so that BIT, Mesra can approach contact person for any feedback.		
2.	Specification claimed must be supported by printed literature of the company.		
3.	The supplier of the instrument must confirm in writing that the spares for the entire instrument will be available for a period of at least ten years after the model of equipment supplied has been phased out. For frequently required spares, there should be adequate inventory with the Indian agency.		
4.	Supplier must have proven capability and trained expert manpower to troubleshoot equipment both in the hardware and application part.		
5.	Bidders shall invariably furnish documentary evidence (client's certificate) in support of the satisfactory operation of the equipment.		
6.	Suitable and essential tool kit is to be supplied with the equipment for the required maintenance.		
7.	Any accessories that must be needed for operation of the equipment, but not mentioned in this specification shall also be quoted by the vendor.		
8.	The instrument should be installed and commissioned at site. Site requirement has to be mentioned by the supplier. Complete technical details of pre-installation requirements should be furnished along with the technical bid. Birla Institute of Technology, Mesra will only provide the installation room, air-conditioning units and required electrical outlets. Vendors are expected to supply all other installation accessories, infrastructures, facilities and services required for successful installation and smooth operation of the equipment. Vendors may conduct the site survey before installation at no additional cost		

GST Exemption: The Institute is partially exempted from the payment of GST vide GOI Notification No.45/2017-Central Tax (Rate), dated 14.11.2017 and 47/2017-Integrated Tax (Rate), dated: 14.11.2017 the applicable IGST will be at the rate of 5%. Necessary documents (DSIR) and related certification will be provided.

Terms & conditions

1. **Representation:** One Indian agent cannot represent two different foreign principals in one tender.
2. **Instructions to the OEM:** Either the Indian Agent on behalf of the Principal/OEM or Principal/OEM can bid but both cannot bid simultaneously for the same item/product in the same tender.
3. **Single Order:** A single order will be processed for entire configuration.
4. **Spares availability:** The supplier of the instrument must confirm in writing that the spares for the entire instrument will be available for a period of at least ten years after the model of equipment supplied has been phased out. For frequently required spares, there should be adequate inventory with the Indian agency.
5. **Delivery date etc.:** Time taken for delivery, installation and commissioning should be separately specified.
6. **Bid Submission:** The bids can be sent to us by Hand/ Speed post/ Courier so as to reach the marked address by due date and time. Late bids will not be accepted. The price bids of only those firms will only be opened who are found to be technically qualified after evaluation. The Institute reserves the right to cancel/reject any or all bids without assigning any reason thereof.
7. **Bid document:** The vendor should read the Tender documents carefully before quoting. It shall be deemed that the vendor has gone through the documents carefully and has understood its implication. Any lack of information shall not relieve the bidder of its responsibility to fulfill its obligations under the Bid.
8. **Price:** Prices quoted should be on F.O.R., BIT Mesra, Ranchi on **Door Delivery** basis.
9. **Technical bid:** The technical bid should accompany full technical literature, pamphlets, leaflets of the technical features of the offered equipment must be submitted for proper evaluation.
10. **Dealers:** Dealership certificate/ authorization certificate from OEM if the bidder is a dealer.
11. **Similar Installation:** A complete list of Institutes' / Organisations' list wherein the installation has been done and a Performance certificate along with such list where these installation has been done in past three years.
12. **Validity of Quotation:** Quotations should be valid at least for 90 days.
13. **Declaration:** The bidder should attach a self-declaration stating that he is not debarred/ blacklisted or banned from any University/ Central Government / PSU / State Govt of India / any other Govt. agencies or any Institute of National / International importance.
14. **GST etc:** Copy of up-to-date GST clearance certificate & sales tax registration certificate indicating also the GSTIN number of the Firm will have to accompany the quotations. Copy of PAN must be submitted of Firm / Company along with the Technical Bid.
15. **Bank Details:** Banker's details of quoting Firm/ Vendor should be clearly mentioned as attached
16. **Performance security:** The supplier shall furnish a Performance Security after installation of the material for an amount of 10% (Ten percent) of the Purchase order value, valid **upto 60 days** after the date of completion of performance obligations including warranty obligations. This Performance Bank guarantee should be issued from any Nationalized Bank and validity of the same will be till **warranty period +60 days** from the date of installation of the material. The claim of the same can be done by email, email id of the bank for correspondence shall be mentioned. The claim period of Performance Bank Guarantee shall be one year after expiry of Performance Bank Guarantee.

17. **Delivery:** Unless otherwise stated, delivery of goods at BIT, Mesra, will have to be executed within Eight (8) weeks from the date of issue of the Purchase Order. All aspects of safe delivery shall be the exclusive responsibility of the OEM / Bidder.
18. **Bid Currencies:** The quoted price should be in Indian Rupees for offers received for suppliers within India and in freely convertible foreign currency in case of offers received for supply from foreign countries.
19. **Foreign bidders:** In case a bidder not doing business within India, it shall furnish the certificate to the effect that the bidder is or will be represented by an agent in India equipped and able to carry out the supply, maintenance, repair obligations etc. during the warranty and post warranty period or ensure a mechanism at place for carrying out the supply, maintenance, repair obligations etc. during the warranty and post-warranty period, without which their offers are liable to be ignored.
20. **Conditional tenders:** Conditional tenders shall not be accepted.
21. **Late and delayed Tenders:** Late and delayed tender will not be considered. In case any unscheduled holiday occurs on prescribed closing/opening date the next working day shall be the prescribed date of closing/opening.
22. **Customs Duty:** The Institute is exempted from payment of Customs Duty Vide GOI Notification No. 51/96 Customs, dated 23.07.1996 & No.24/2007-Customs dated 01.03.2007 with registration no 11/161/90-TU-V dated 24.07.2019.
23. **Rejection of Tender:** The tenders are liable to be rejected if the conditions mentioned in the tender documents are not complied with. The tender should be complete in all respects and duly signed wherever required. Incomplete and unsigned offer will not be accepted.
24. **Liquidated Damage:** If a firm accepts an order and fails to execute the order in full as per the terms and conditions stipulated therein, it will be open to this Institute to recover liquidated damages from the firm at the rate of 0.5% to 1% per week of the order value subject to a maximum of 10% of the order value. It will also be open to this Institute alternatively, to arrange procurement of the required stores from any other source at the risk and expense of the firm, which accepted the order but failed to execute the order according to stipulated agreed upon.
25. **Payment Terms:** - 100% payment will be released after receiving of stores in good order and condition and successful installation and commissioning duly certified by the concern authority.
26. **Termination for default:** Default is said to have occurred: -
 - (a) If the supplier fails to deliver any or all of the services within the time period(s) specified in the purchase order or any extension thereof granted by BIT, Mesra.
 - (b) If the supplier fails to perform any other obligation(s) stated in the Purchase Order.
 - (c) If the vendor, in either of the above circumstances, does not take remedial steps within a period of 30 days after receipt of the default notice from BIT Mesra (or takes longer period in spite of what BIT Mesra may authorize in writing). BIT Mesra may terminate the contract / purchase order in completely or in part. In addition to above, BIT Mesra may at its discretion also take the following actions: BIT Mesra may procure, upon such terms and in such manner, as it deems appropriate, goods similar to the undelivered items/products and the defaulting supplier shall be liable to compensate BIT Mesra for any extra expenditure involved towards goods and services to complete the scope of.
27. **Acceptance and rejection of bids:** The Institute may accept or reject any or all the bids in part of in full without assigning any reason and doesn't bind himself to accept the lower bid, without thereby incurring any liability to the affected Bidder or bidders. The institute at its discretion may change the quantity / upgrade the criteria / drop any item or thereof at any time before placing the Purchase Order.
28. **Manual:** One set of operating manual and service manual including detailed drawings and circuit diagrams (in English) should be provided with the instrument

29. **Blacklisting of Supplier:** Furnishing of wrong/ambiguous information in the compliance statement may lead to rejection of bid and further black listing of the bidder, if prima-facie it appears that the information in the compliance statement was given with a malafied/fraudulent intent.
30. **Delivery at Kolkata Airport/ Seaport only:** Since our SFIS bond is valid in Kolkata Airport/ Seaport only delivery is to be made through Kolkata Airport/ Seaport.
31. **No part Shipment:** While transshipment will be allowed, part shipment will not be allowed.
32. **Clarification of Bids:** Clarifications may be sought by the Evaluation committee of the Institute during the Process of Technical Evaluation. The request for the clarification and the response shall be in writing. There shall be no change in prices or substance of the bid shall be sought, offered or permitted. The Purchaser will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.
33. **Waivers:** The Institute may waive off any minor informality non-conformity or irregularity in a bid which does not constitute a material deviation, provided such a waiver does not prejudice or affect the relative ranking of any Bidder.
34. **Bid responsiveness:** A responsive bid is one in which the bid is substantively responsible i.e. the bid which conforms to all the terms and conditions of the bidding documents without material deviations. Deviations from or objections or reservations to critical provisions such as those concerning Performance Security, Warranty, Force Majeure, Limitation of liability, Applicable law, and Taxes & Duties will be deemed to be a material deviation. The Purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.
35. **No Canvassing:** Any effort by a Bidder to influence the Purchaser in its decisions on bid evaluation, bid comparison or contract award may result in rejection of the Bidder's bid.
36. **Rejection of Bid:** If a bid is not substantially responsive, it will be rejected by the Purchaser and may not subsequently be made responsive by the Bidder by correction of the non-conformity.
37. **Patent Rights:** The Supplier shall indemnify the Institute against all third-party claims of trademark, industrial design right or infringement of Patent arising from the use of Goods or any part thereof in India.
38. **Insurance:** For delivery of goods at site, the insurance shall be obtained by the Supplier in an amount equal to 110% of the value of the goods from "warehouse to warehouse" (final destinations) on "All Risks" basis including War Risks and Strikes.
39. **Packaging:** The packaging should be such to prevent their damage, rough handling during transit and exposure to extreme temperatures etc or deterioration during transit to the final destination as indicated in the Purchase order. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.
40. **Tax liabilities:** Suppliers shall be entirely responsible for all duties, taxes, license fees, octroi, road permits, etc., incurred until delivery of the Goods to the Purchaser as per the Purchase order.
41. **Termination for Insolvency:** The Purchaser may at any time terminate the P.O by giving written notice to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Purchaser.

Price bid

1. **Bid Price:** The Bid Price should be enclosed in a sealed envelope and properly marked. The Bidder shall indicate on the appropriate price bid, the unit prices and total bid prices of the goods it proposes to supply under the contract.
2. **Bid Currencies:** Prices should be quoted in Indian Rupees for offers received for supply within India and in freely convertible foreign currency for offers received for supply from foreign country.
3. **Vendor should mention of packing, forwarding, freight, insurance charges, taxes etc. such offer shall be rejected as incomplete.**
4. The price quoted shall remain fixed during the contract period and shall not vary on any account.
5. All lots and items must be listed and priced separately in the Price bid. If a Price bid shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. Lots or items not listed in the Price bid shall be assumed to be not included in the bid.
6. **Customs Duty:** The Institute is exempted from payment of Customs Duty Vide GOI Notification No. 51/96 Customs, dated 23.07.1996 & No.24/2007-Customs dated 01.03.2007 with registration no 11/161/90-TU-V dated 24.07.2019.
7. **Arithmetical errors:** The arithmetical errors will be rectified as follows. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If there is a discrepancy between the figures and words. The amount in words will prevail. If the supplier does not accept the correction of errors, its bid will be rejected.
8. Prices indicated on the price-bid should be mentioned in the following manner:

For Goods manufactured within India

- i) The price of the goods should be quoted Ex –works.
- ii) GST and other taxes etc. which will be payable on the goods if the contract is awarded. The details should be mentioned separately.
- iii) The charges for inland transportation, insurance and other local services required for delivering the goods at the desired destination as specified in the price bid.
- iv) The installation, commissioning and training charges including any incidental services, (if any) should be clearly mentioned.

For Imported Goods:

- i) The price of the goods, quoted on FCA (named place of delivery abroad) or FOB (named port of shipment), as specified in the price schedule form.
- ii) The charges for insurance and transportation of the goods to the port/place of destination.
- iii) The agency commission charges, (if any).
- iv) The installation, commissioning and training charges including any incidental services, (if any).
- v) The terms FOB, FCA, CIF, CIP etc. shall be governed by the rules prescribed in the current edition of the Incoterms published by the International Chambers of Commerce, Paris.
- vi) **Delivery at Kolkata Airport/ Seaport only:** As we do not have clearing agent in any other Airport, delivery is to be made only at Kolkata.

Proforma for Performance Statement (last five years)

Sr. No	Name of the Buyer (With full address)	Order No. and date	Full description of the Item and value	PO Value	Delivery Details		Delay reason (if any)	Attach satisfactory performance certificate (from the buyer)	Contact Persons Details and contact No.
					As per P.O	Supply date			

Technical Specifications

SCRATCH TESTER should have following specifications

Sl. No	Specifications:	Compliance (Yes/ No) along with the reference page no. of the bid.
1	<p>Specifications for SCRATCH TESTER should have of the following minimum (Basic) specification (better & higher specification will be given preference):</p> <p>Basic requirements:</p> <ol style="list-style-type: none"> 1. The system should be capable of determining the tribological characteristics of various bulk materials and coatings by evaluating the scratch resistance and critical loads for adhesive failure. 2. This mechanical tester should offer automated loading system capable of constant, ramp or step load profiles during the scratch test. 3. The instrument should be equipped with motorized x-y stage. 4. The instrument should be integrated with digital microscope to visualize the damage of scratched surface and record the complete scratch length and width. 5. The image acquisition software should provide complete auto-stitched length of entire scratch in a single image. 6. System design should be compatible with real-time imaging of the scratch process without interrupting the test. 7. System should be compatible with traction force sensor, acoustic emission sensor and depth sensors. 8. The control software should have necessary options to obtain and to plot variation in lateral force and co-efficient of friction with respect to scratch length during scratch testing. 9. The system must use fully decoupled and separate friction force sensors and normal load sensor to mechanically eliminate sensor cross talk. Note - 2D capacitance sensors are not acceptable. 10. This mechanical tester should offer automated closed loop loading system. 11. Software should be capable of computation of indentation hardness, scratch hardness and indentation fracture toughness. <p>Detailed specification:</p> <ol style="list-style-type: none"> 1. Load ranges: 1 N to 50 N with an LC of 0.1 N with accuracy of 1% or better 2. Loading modes: Constant, Ramp and step with single and multiple scratches 3. Loading rate: 1 to 20 N/mm 4. Multi-pass scratch and bidirectional. 5. Scratch length: variable with a max of 50 mm or better having resolution of 0.1 mm and accuracy 1% or better. 6. Scratch speed: 0.1 to 5 mm/sec. 7. Full control of length, speed and loading rate. 8. Indenter: Rockwell C diamond indenter of tip radius 200 micron and 120° cone angle. Vickers indenter [diamond pyramid with a square base, whose opposite sides meet at the apex at an angle of $\theta = 136^\circ$]. 9. Indentation with user defined dwell time. Should aid in measurement of indentation fracture toughness. 10. Traction force sensor: up to 50N with a resolution of 0.1N and accuracy 1% or 	

	<p>better.</p> <p>11.Imaging module: CCD Camera (Mega Pixel). 5 mega pixel, auto exposure and brightness control, USB protocol. Auto Stitching of Image length.</p> <p>12.Specimen holder: 20 to 60 mm square samples of 5 mm thick.</p> <p>13.Acoustic emission sensor: 90 to 295 kHz.</p> <p>14.Penetration depth sensor: Up to 2 mm.</p> <p>15.Reference samples: Mild steel, EN 31, Copper, Aluminium, TiN coated samples.</p> <p>Control and data acquisition system:</p> <p>1.It should feature integrated electronic controller and touch panel PC with pre-loaded software to conduct tests, acquire data and post analysis module for comparison of multiple tests for offline processing.</p> <p>2.System control on inputs and output should be viewable in real-time during the tests and having a feature to export the test raw data to a spreadsheet.</p> <p>3.The software should offer centralized cloud-based data storage that assures data traceability. The data storage and security should follow ISO 27001.</p> <p>4.Cloud based analytics should offer instant statistical reports of big data (hundreds of tests) at the click of a button.</p> <p>5.It should offer real-time health monitoring and prognostics capability for tracking instrument usage, minimizing unplanned downtime to ensure maximum availability of instrument.</p> <p>6.Desktop PC and printer with interface data transfer & Data acquisition peripheral device output data cable acquisition mode should be quoted along with main system.</p>		
2	<ul style="list-style-type: none"> i. Detailed datasheet, calibration reports for load and friction force and test reports indicating capability as required by the tender should be submitted with bid. ii. Scratch tip qualification report using 3D profilometry and optical imaging as per ASTM guide should be submitted with the offer. iii. Compliance with BCR 692 reference coating and critical failure loads as per the reference. Report should be submitted with bid. iv. Software for instrument and sensor health, data analytics, cloud-based storage and remote with security protocols as per ISO 27001 should be submitted with bid. 		
3	Training	<p>Training of 1 or more working days to our analysts by the application specialist at our lab after successful commissioning of the instrument by the service engineer is to be provided.</p>	
4	Warranty	<p>Standard warranty 1-year should be offered with main system. If within a period of one year after commission, any</p>	

		<p>accessory / consumable/ spare part is proved to be defective then such product shall be replaced by the manufacturer / supplier. Such replacement shall be sole obligation of manufacturer / supplier, Including payment of charges for freight delivery, custom duty and transportation, if any. In case of breakdown during the warranty period, a competent Service Engineering of the supplier should make as many visits as are required to rectify the problem and replace the faulty parts, without any liability of cost.</p>	
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