

**TENDER**

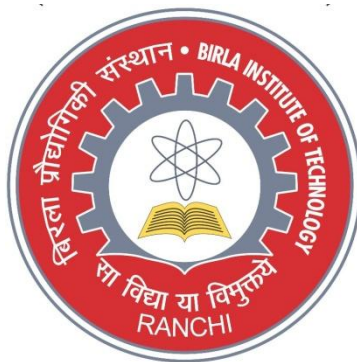
**FOR**

**Supply and Installation of**

**DIFFERENTIAL SCANNING CALORIMETER**

**in the Central Instrumentation Facility**

**BIT MESRA, Ranchi**



**Tender No.: IC/000927**

**Tender date: 16th January, 2018**

**Last Date of submission: 13th Feb, 2018**

**Birla Institute of Technology, Mesra**

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

Tender Reference No.	<b>IC/000927</b>
Last Date and Time for receipt of Tender	13/02/2018 at 1500 Hrs
Time and Date for Opening of Technical Bid	13/02/2018 at 1600 Hrs
Address for Communication	As Stated below in the Instructions to the bidders.
Contact Telephone Number	<u>0651-2275444 Ext. 4596</u>
For technical Details Contact : Central Instrumentation Facility Dr. S.K.Swain	<a href="mailto:cif@bitmesra.ac.in">cif@bitmesra.ac.in</a> ,
Opening of Bids	Technical Bids will be opened on 13/02/2018, at 1600 Hrs in the Institute's Conference Room in the Main Building.
Price bids	Price bid of only Technically qualified bidders will be opened. Dates will be declared later.

## **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 DIFFERENTIAL SCANNING CALORIMETER**  
**TENDER REF. NO: IC/000927, DATE: 16/01/2018**  
**LAST DATE FOR SUBMISSION: 13/02/2018 Till 1500 Hrs.**

The Registrar  
Birla Institute of Technology, Mesra  
Ranchi - 835215.

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

## **Eligibility Criteria**

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 5 Modulated DSC System India in last 5 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.	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.		
3.	Supplier must have proven capability and trained expert manpower to troubleshoot equipment both in the hardware and application part.		
4.	Backup software must be provided on optical media. Any further version of the software and updates must be provided free of cost for 5 years		
5.	Suitable and essential tool kit is to be supplied with the equipment for the required maintenance.		
6.	Any accessories must be needed for operation of the equipment, but not mentioned in this specification shall be quoted by the vendor.		
7.	If in any case, shifting of the instrument is required in future, the vendor need to shift the instrument being offered after installation. It should be free cost for the dismounting, packing, unpacking, re installation and commissioning of the system with test running of the systems. Damage during the shifting, if any of the machines must be the liability of the vendor.		
8.	Specification claimed must be supported by printed literature of the company.		

## **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. **Upgrades etc.:** Provision should be present in the offer to upgrade with four terminals in future.
6. **Delivery date etc.:** Time taken for delivery, installation and commissioning should be separately specified.
7. **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.
8. **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.
9. **Price:** Prices quoted should be on F.O.R., BIT Mesra, Ranchi on **Door Delivery** basis.
10. **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.
11. **Dealers:** Dealership certificate/ authorization certificate from OEM if the bidder is a dealer.
12. **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.
13. **Validity of Quotation:** Quotations should be valid for 90 days.
14. **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.
15. **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.
16. **Bank Details:** Banker's details of quoting Firm/ Vendor should be clearly mentioned as attached
17. **Performance security:** The supplier shall furnish a Performance Security within 21 days after the receipt of the Purchase Order 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. In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected/replaced material shall be extended to a further period of 12 months and the **Performance Bank Guarantee** for proportionate value shall be extended 60 days over and above the extended warranty period. 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 delivery / installation of the material.
18. **Warranty/ Guarantee/ AMC:** The supplier should provide comprehensive warranty for three years for all components without any additional cost to the purchaser from the date of satisfactory commissioning . Components include all parts (accessories / consumables / spares parts). All accessories/ consumable/ spare parts replaced shall be from OEM/ Supplier of same model or

higher version. If within a period of three years after commission, any 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. Service response time must be less than 72 hours.

19. **Delivery:** Unless otherwise stated delivery of goods at BIT, Mesra, will have to be maximum 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.
20. **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.
21. **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.
22. **Conditional tenders:** Conditional tenders shall not be accepted.
23. **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.
24. **Customs Duty:** The Institute is exempted from payment of Customs/Excise Duty Vide GOI Notification No. 51/96 Customs, dated 23.07.1996 & No.24/2007-Customs dated 01.03.2007.
25. **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.
26. **Authorization for signing the bid:** The authorization shall be indicated by written power-of-attorney accompanying the bid. All pages of the bid, except for un-amended printed literature, shall be initialed by the person or persons signing the bid.
27. **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.
28. **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.
29. **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.

30. **Acceptance and rejection of bids:** The Institute may accept or reject any or all the bids in part or 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.
31. **Manual:** One set of operating manual and service manual including detailed drawings and circuit diagrams (in English) should be provided with the instrument
32. **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.**
33. **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.
34. **No part Shipment:** While transshipment will be allowed, part shipment will not be allowed.
35. **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.
36. **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.
37. **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.
38. **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.
39. **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.
40. **Award of Purchase Order:** The Purchaser will award the Order to the successful Bidder whose bid has been determined to be substantially responsive and has been determined as the lowest evaluated bid, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.
41. **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.
42. **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.
43. **Undertaking:** While sending rates, the firm shall give an undertaking to the effect that "the terms/conditions mentioned in the enquiry letter/Tender Notice against which the rates are being given are acceptable to the firm." In case the firms do not give this undertaking, their rates will not be considered.
44. **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.

45. **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.
46. **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. **Where there is no mention of packing, forwarding, freight, insurance changes, 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/Excise Duty Vide GOI Notification No. 51/96 Customs, dated 23.07.1996 & No.24/2007-Customs dated 01.03.2007.
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.
- vii) While transshipment will be allowed, part shipment will not be allowed.



**Proforma for Performance Statement (last three 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			

## Annexure II

### Technical Specifications for Modulated Differential Scanning Calorimeter System (MDSC)

Modulated Differential Scanning Calorimeter System (MDSC) should have the following specifications :

Sl. No	Features	Specifications
1	Type of Measurement	Thermal analysis of various kinds of materials such as organic and inorganic compounds, polymers, drugs, explosives etc. to find out transition temperatures, enthalpy of phase transition, glass transitions, heat capacity, melting points. Crystallization temperature, degree of cure, heat of fusion of reaction, reaction kinetics, reversing and non reversing component of heat flow, specific heat capacity, oxidative stability etc.
2	DSC Type	Heat Flux or Power Compensation type modulated DSC
3	Temperature Range	-70 <sup>0</sup> C to 700 <sup>0</sup> C or better
4	Temperature accuracy	± 0.2 <sup>0</sup> C or better
5	Temperature Precision	± 0.05 <sup>0</sup> C or better
6	Temperature Calibration	Up to 5 points
7	Temperature Repeatability	0.1 <sup>0</sup> C
8	Programmable Temperature Scanning Rate (Heating and Cooling)	0.1 <sup>0</sup> C to 100 <sup>0</sup> C/min or better for heating rate 0.1 <sup>0</sup> C to 50 <sup>0</sup> C/min or better for cooling rate
9	Thermocouples	Platinum/platinum-Rhodium or similar type.
10	Enthalpy accuracy	± 1% or better
11	Enthalpy Precision	± 0.2% or better
12	Calorimetric sensitivity	0.2µW or better
13	Calorimetric Precision	± 1% based on metal standards
14	Data Collection Rate	10 point per second or better
15	Atmosphere	The system should be able to work under different atmospheres: inert, oxidizing, reducing. e.g. helium, argon, nitrogen, oxygen, hydrogen, carbon dioxide, air etc.
16	Gas Flow	Up to 200ml/min or better Accuracy: 1ml/min
17	Cooling System	Intra Cooler/ Liquid nitrogen based cooling system
18	Base Line Curvature	± 100 µW or better
19	Base Line Reproducibility	± 100 µW or better
20	Signal Noise (Max. peak to peak)	< 1µW
21	Calibration	<ul style="list-style-type: none"> <li>The system should be supplied with traceable standards for temperature and enthalpy calibration.</li> <li>Accurate sensitivity calibration should also be</li> </ul>

		<p>possible with sapphire(<math>C_p</math> method).</p> <ul style="list-style-type: none"> <li>• Must have upto six points for temperature calibration.</li> <li>• Calibration kit for <math>C_p</math> measurement should be quoted.</li> </ul>
22	Work Station and Software	<p>The software should be an original licensed copy software with specific part number mentioned in the offer with integrated database. No pirated version of the software will be allowed and if found the offer will be strictly rejected. Periodical updates of the software should be provided free of cost for a period of five years. The system should have the suitable software with user interactive data analysis tools for analyzing the captured data and automatic report generation. It should facilitate storage of both raw DSC data as well as deconvoluted data in the form of standard DSC curves. It should have the facility of choosing different baseline e.g line, tangential, horizontal, integral tangential, polygon line etc for correct evaluation/integration of peaks. Option for baseline correction, data smoothing, plot expansion, curve overlay etc should be available The software shall have the provision to evaluate peak temp. onset temperature, glass transition temp.melting temp, % crystallinity, purity, crystallization temp, curing temp., activation energy, kinetic studies, heat enthalpy, second and higher derivative blank curve subtraction, normalization, Z-scaling with respect to time, temperature, choice of different base lines for interpretation etc. Provision to view total heat, modulated heat flow and total heat capacity signals in real-time during the experiment shall be included in the software.</p> <p>Software for kinetics studies for single and multiple steps through non linear regression analysis, measuring the specific heat capacity and possible correction software for correcting instrumental errors.</p> <p>Operating software should control mass flow controllers and should have capability to collect data during cooling for cooling curve analysis.</p> <p>The data analysis software should be unkeyed or multi-user licensed, to allow installation at minimum 2 PCs. Universal application range (ASCII files import/export, word/ excel compatibility, pdf formats). The software should also have the provision for the analysis of testes mentioned in SI No. 1.</p>
23	Auto Sampler(Optional)	Auto sampler with minimum 10 sample position may

		also be quoted as optional.
24	Computer & Printer	A suitable branded computer for system control & data acquisition. It should have following minimum specs: i5 processor, 4GB RAM, 1 TB HDD or above, DVD combo drive, 2 USB Ports, 19" TFT/LED Color Monitor, Keys Keyboard, Optical mouse, with original operating system, HP or any standard brand Laser Jet Printer with scanner.
25	UPS	Suitable 5KVA online UPS having at least 2 Hour battery backup should be supplied.
26	Essential Accessories	i) Reference materials indium, tin, Zinc & Sapphire for DSC calibration should be supplied. ii) Suitable cooling accessories like chiller if required should be supplied iii) Ultra high pure Nitrogen and Oxygen filled cylinder (7 cm <sup>3</sup> with double stage SS gas regulator, connectors, PTFE/SS gas tube, nuts, ferrules, tubes, gas flow meters has to be supplied and those have to be connected and integrated with the main unit. iv) Hermetic standard Aluminum pans with lids 500pcs v) Non Hermetic standard Aluminum pans with lids 500pcs vii) Platinum crucible : 10nos viii) Silica crucible : 10nos ix) Alumina Crucible : 10nos x) Crimping Machine
27	Manual	One set of manual and service manual (both hard and soft copy in English) should be supplied with the equipment.
28	Pre installation Requirements	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.
29	Training	The manufacturer / supplier of instrument should provide three days onsite training in both hardware and software to the laboratory personnel in the installation, operation and maintenance of the instruments. The supplier or manufacturer should also provide three days

		applications training.
<b>30</b>	Warranty	<p>Minimum warranty of 3 years should be quoted with main system. The supplier should provide comprehensive warranty for three years for all components without any additional cost to the purchaser from the date of satisfactory commissioning of equipment. Components include all parts (accessories/ consumables / spares parts) of the equipment. All accessories/ consumable/ spare parts replaced shall be from OEM/ Supplier of same model or higher version. If within a period of three years after commission, any 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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