



राष्ट्रीय विज्ञान शिक्षा एवं अनुसंधान संस्थान, भुवनेश्वर
(परमाणु उर्जा विभाग, भारत सरकार का एक स्वयं शासित संस्थान)
NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH
(AN AUTONOMOUS INSTITUTE UNDER DEPT. OF ATOMIC ENERGY, GOVT. OF INDIA)

Notice Inviting Tender No. PTN-82/2016(2 Part Tender)

PHYSICAL PROPERTIES MEASUREMENT SYSTEM
(PPMS)

Cost of Tender is 1500.00 (Non Refundable)

Paper Notice



**NATIONAL INSTITUTE OF SCIENCE EDUCATION & RESEARCH
JATNI CAMPUS, P.O. - JATNI
KHURDA – 752050, ODISHA, INDIA
Public Tender Notice (2 Part Tender)**

Sealed Tenders are invited on behalf of the Director, National Institute of Science Education and Research, Jatni from the manufacturers(Indian or Foreign) and their authorised reseller/Indian agent only for supply & installation of the following items:-

Sl. No.	Name of the Items	Tender No.	Name of Department	Indent No.	Qty.	EMD in INR
01	PHYSICAL PROPERTIES MEASUREMENT SYSTEM(PPMS)	PTN-82/2016	School of Physical Science	NC-000620-PHY-16-17	01 Nos	500000.00

For all other details please visit the NISER web-site address: www.niser.ac.in directly.

Stores & Purchase Officer



NATIONAL INSTITUTE OF SCIENCE EDUCATION & RESEARCH
JATNI CAMPUS, P.O. – BHIMPUR-PADANPUR, VIA-JATNI
KHURDA – 752050, ODISHA, INDIA
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NB: PARTIES REGISTERED WITH SSI/DGS&D/DAE AND FOREIGN PARTIES QUOTING DIRECTLY ARE EXEMPTED FROM PAYING EMD ONLY .

Interested parties may collect the Tender Documents from the Dy. Controller of Accounts, NISER, on payment of Rs.1500/-(Non Refundable).The Tender document can also be downloaded from NISER website upto **24th Nov,2016**. The Tender, complete in all respects should be submitted within **05.30 p.m.** on or before **29th Nov,2016** along with prescribed Earnest Money Deposit.

Bidders who submit the form downloaded from the web site must attach Demand Draft of requisite amount Rs1500/- (cost of tender document) prepared in favour of the FINANCE OFFICER, NATIONAL INSTITUTE OF SCIENCE EDUCATION & RESEARCH with their bids.

NISER reserves the right to accept or reject any or all the Tenders without assigning any reason.

Stores & Purchase Officer

**NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH
NIT OPEN DOCUMENT (2 PART BID)
SUPPLY & INSTALLATION
OF
PHYSICAL PROPERTIES MEASUREMENT SYSTEM(PPMS)**

National Institute of Science Education & Research (NISER), Jatni is an Autonomous Institute under Dept of Atomic Energy. NISER would like to procure the following equipment. The Technical Specifications Schedule of Requirements and Allied Technical details are given in Part-1 of tender document.

- **Item: PHYSICAL PROPERTIES MEASUREMENT SYSTEM(PPMS)**
- **Tender Enquiry No: PTN-82/2016**
- **Last date of sale of Tender document : 24th Nov,2016 Upto 05.30PM**
- **Last date of submission of bid-29th Nov,2016 Up to 5.30 P.M**
- **Opening of Technical Bids: 30th Nov,2016, AT 02.30 PM**
- **Date and Time of Pre-bid meeting (Technical discussion only)- 10th Nov,2016 ,At-12.30 P.M in conference hall of school of physical sciences .**

Sealed tenders are invited for supply and installation of **PHYSICAL PROPERTIES MEASUREMENT SYSTEM(PPMS)** in the National Institute of Science Education & Research, Jatni. The tender document consists of the following two parts.

Part-1: "TERMS & CONDITIONS" & "TECHNICAL BID" of the tender.

Part-2: "FINANCIAL BID" of the tender.

The sealed envelope containing "Terms & Conditions", "Technical Bid" and "Financial Bid" on prescribed tender document should reach to the Stores & Purchase Officer, National Institute of Science Education & Research, Jatni on or before **29th Nov,2016 upto 5:30 p.m.** otherwise the tender will not be accepted.

The sealed envelope of the bidders containing Part-1 "Terms & Conditions" and "Technical bid" shall be opened on **30th Nov,2016 at 02:30 p.m** One representative of each vendor may participate at the time of opening the bids (The representative must have the valid authorisation from their respective company for attending the tender opening meeting). The Part -2 "Financial Bid" of only those parties who qualify in Part -1 will be opened on a later date. The date of opening will be informed to each qualified party separately.

**(Deepak Srivastava)
Stores & Purchase Officer**

The Institute can provide following documents.

1. Custom Duty / Excise duty exemption certificate.
2. Road permit for entering in Orissa, Party has to pay Entry Tax

The Institute can't provide following documents.

1. Form D for Central Sales tax/IIID for Orissa commercial Taxes.

COST OF TENDER IS RS. 1500/- (NON REFUNDABLE).

This is payable in cash or Demand Draft of a scheduled Bank in favour of Finance Officer, National Institute of Science Education and Research, Jatni.



PART - 1
TERMS & CONDITIONS
FOR SUPPLY AND INSTALLATION OF
PHYSICAL PROPERTIES MEASUREMENT SYSTEM (PPMS)
FOR
NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, JATNI

1. Director, National Institute of Science Education & Research, Jatni (NISER) invites sealed tenders for **PHYSICAL PROPERTIES MEASUREMENT SYSTEM (PPMS)** from the Manufacturer and their authorised reseller only .

Pre-Qualification criteria -

- A.** Should have satisfactorily completed **similar 02-03 supply** in last 05 year (at least one of them in Central Government/Central Autonomous Body/Central PSU)
- B. Similar or Similar Nature of work means** Supply & Installation of **PHYSICAL PROPERTIES MEASUREMENT SYSTEM (PPMS)** for any of the following
 - a) Government/Autonomous Institutions**
 - b) Government Research Centres**
 - c) Universities**
 - d) Autonomous/Reputed Private Research Centres**
 - e) Purchase Orders / Completion certificates if any, for supporting above requirements.**

Bidders who qualify in Pre-Qualification criteria will only be consider for further evaluation .

2. The Bidders are requested to give detailed tender in the prescribed forms in two Bids
i.e. Part - I Technical Bid.
Part - II Commercial Bid.

3. **Contact for information:** (Only E-mail enquiries will be entertained)

4. **For Technical Information of : PHYSICAL PROPERTIES MEASUREMENT SYSTEM (PPMS)**

Dr. Sudakshina Prusty

School of Physical Sciences, NISER.

E-Mail – sprusty@niser.ac.in

For Information regarding Commercial & all other Terms & Conditions:

Mr. Deepak Srivastava

Stores & Purchase Officer

National Institute of Science Education & Research, Jatni

E-Mail-spo@niser.ac.in

4. Supply means:

“Supply, Installation, Commissioning and satisfactory demonstration of the whole equipments”.

If any charges extra are payable for Installation and Commissioning, the same should be specified in the commercial offer.

5. Submission of Bids:

(a) Place: Office of Stores & Purchase Officer, NISER, Jatni.

(b) Time and Date of Submission: up to **05.30 PM on 29th Nov,2016**

(c) Time and Date of opening Technical Bid: At **02.30 P.M on 30th Nov,2016**

NISER will not be responsible, for submission / delivery of quotation at wrong places other than the Office of Stores & Purchase Officer, NISER, Jatni.

6. Two Bid System: -

The two bid system should be followed for this tender. In this system the bidder must submit his offer in two separate sealed envelopes. Both the technical bid and commercial bid envelopes should be securely sealed and stamped separately for each quoted equipment and clearly marked as “Envelope No.1 – Technical Bid” and “Envelope No.2 – Commercial Bid” respectively. Both the sealed envelopes should be placed in a third larger envelope. The main envelope which will contain both the bids should be super scribed with our tender enquiry No **PTN-82/2016** due on **30th Nov,2016 with name of the equipment & department** and to be submitted to the address given below so as to reach on or before **05.30 PM on 29th Nov,2016. Separate envelope should be used for each item super scribing name of the indent.**

Stores & Purchase Officer,
National Institute of Science Education & Research,
Jatni Campus, PO-Bhimpur-Padanpur, Via-Jatni, Khurda - 752050

The envelopes must be super-scribed with the following information:

- Tender Reference Number
- Name of the Equipment
- Name of the Department
- Due Date
- Name of the Vendor
- Envelope No. 1: Shall contain “Acceptance of Terms & Conditions”, “Technical Bid” and Earnest Money Deposit (EMD)
The technical offer should not contain any price information.
- Envelop No.2: Shall contain financial bid only.

The Technical Bid must be submitted in an organized and structured manner. No brochures/leaflets etc. should be submitted in loose form. Please indicate page nos. on your quotation eg. If the quotation is containing 25 Pages, please indicate as 1/25, 2/25, 3/25 -----25/25.

Printed conditions of the vendor submitted with the tender will not be binding on National Institute of Science Education & Research, Jatni.

Important Instruction

The parties are requested to make separate bid (technical & financial both) for each quoted equipment along with the requisite amount of EMD.

The Technical Offer should comprise of the following:

- a) Tenders, which are submitted without following the Two-Bid Offer System, will summarily be rejected.

- b) The technical offer should be complete to indicate that all products and services asked for are quoted. Each page of the bid and cutting/corrections shall be duly signed and stamped by the bidder. Unsigned Tenders will also be rejected. Failure to comply with this requirement may result in the bid being rejected.
- c) The purpose of certain specific conditions is to get or procure best product/service etc. for NISER. The opinion of Technical Committee shall be the guiding factor for technical short listing.
- d) The earnest money deposit as indicated against the item should be enclosed along with the terms & conditions & technical bid duly signed and stamped in the form of Account Payee Bank Draft payable on any branch of Nationalised/Schedule Bank at Bhubaneswar/ Jatni in favour of "Finance Officer, National Institute of Science Education & Research, Jatni, in a separate sealed envelope. All tenders submitted without requisite amount of earnest money shall be rejected and their technical and financial bids shall not be opened. No interest is payable on EMD. The EMD will be returned to the bidders(s)/Agents whose offer is not accepted by NISER within one month from the date of the placing of the final order(s) on the selected bidder(s). In case of the bidder(s) whose offer is accepted the EMD will be returned on submission of Performance Bank Guarantee (if applicable). However, if the return of EMD is delayed for any reason, no interest /penalty shall be payable to the bidders.

EMD EXEMPTION:

PARTIES REGISTERED WITH SSI/DGS&D/DAE AND FOREIGN PARTIES QUOTING DIRECTLY ARE EXEMPTED FROM PAYING EMD. FOREIGN PARTIES QUOTING DIRECTLY UNDER ORIGINAL SEAL AND SIGNATURE (NOT SCANNED) WILL GET THE EXEMPTION.

The EMD shall be forfeited:

If the bidder withdraws the bid during the period of bid validity specified in the tender. In case a successful bidder fails to furnish the Performance Bank Guarantee (if applicable).

- e) Undertaking that the successful bidder agrees to give a Performance Bank Guaranty of 10% of the purchase order value in favour of "Director, National Institute of Science Education & Research, Jatni valid till warranty period.

Performance Bank Guarantee:

Within ten (10) days of the award of contract, the vendor shall furnish a Performance Bank Guarantee amounting to 10% of the purchase order value in the form of Bank Guarantee favouring the Director, National Institute of Science Education & Research, Jatni valid till completion of warranty period.

- f) Duly filled in Technical Bid with proper seal and signature of authorized person on each page of the bid should be submitted and the same should accompany with complete specifications and drawings, Manufacturer's name, address and relevant Technical Literature/Brochures with warranty Terms and EMD.

- g) If the bid is for branded makes, authorization letter from principals clearly indicating that the vendor is the competent authority to sell and provide services towards the items mentioned in the scope of supply given in this tender document.
- h) Copy of LST/CST/WCT No. PAN No. and TIN No. allotted by the concerned authorities.
- i) List of deliverables / Bill of materials and services.
- j) Compliance sheet with any deviation with reference to the terms and specifications.
- k) Indicate the names of the Indian reputed Organizations where you have supplied similar equipment and may attach the satisfactory performance report of the equipment from user Organization.
- l) The item should be supplied with manuals and the manuals including technical drawings should be complete in all respects to operate the system without any problem.
- m) Bid documents should be submitted as per the above sequence with Index page and page numbers (including technical literature). Each page of the bid should be signed & stamped in original. Unsigned bids will not be considered for evaluation.

• **Envelope 2: “Commercial Bid” shall contain:**

- a) Price schedule complete in all respects with proper seal and signature of authorized person. **Tender with any condition including conditional rebate shall be rejected forthwith.**
- b) Cost of all the items should be mentioned clearly and individually in the Commercial Offer (Part-II) only.
- c) **The Bidders are requested to quote for Educational/Institutional Price for Machine/Equipment and, since we are eligible for the same.**
- d) **Printed conditions of the vendor submitted with the tender will not be binding on NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH.**

7. Date of opening the Technical Bids.

Technical Bids will be opened on – **30th Nov,2016 at 02.30 P.M** at office of the Stores & Purchase Officer, National Institute of Science Education & Research, Jatni.

The Technical bids will be opened in the presence of the bidders on the specified time and date. Bidders/Agents who have responded to the tender only will be allowed to be present.

The technical bids will be evaluated to shortlist the eligible bidders. The commercial bids of only the short listed bidders shall be considered for further processing. Bidders whose technical offer is found acceptable and meeting the eligibility requirements as specified in this tender will be informed about the date and time of the opening of the commercial bid.

Note: (1) Please do not insert ‘Commercial Bid’ (prices quoted) in the technical bid envelope. If the price quoted is submitted with technical bid the tender will be rejected.

(2) No camera mobiles / mobiles are allowed during tender opening.

8. Opening of Commercial Bids

NISER will open commercial bids of only the short listed bidders, in the presence of the bidders or their authorized representatives who choose to attend the commercial bid opening. The Date and Time of opening the Commercial Bid will be intimated only to pre-qualified and technically acceptable Bidders for the item at a later date.

The representatives of short listed firms only will be allowed for commercial bid opening.

ONLY TECHNICALLY accepted competitive bids will be considered for placing Purchase Order. The commercial offers of the vendors whose technical offers are found to be technically deficient or do not meet the qualification criteria as specified in this tender will be returned to them without opening.

The bid can be submitted in person or through post/courier (NISER will not be responsible for delayed / late quotations submitted / sent by Post / Courier etc. resulting in disqualification/rejection of any bid) so as to reach NISER on or before the due date and time. Fax / E-mail / Telegraphic / Telex tenders will not be considered unless it is asked for. The bidders 'authorized representative can attend the bid opening.

9. The Director NISER reserves the right to accept the offer in full or in parts or reject summarily or partly.

10. Delivery Period / Timeliness

The deliveries, installation must be completed within 45 days, after placement of purchase order. The time is the essence of the contract. It is mandatory for the bidders who respond to this bid to meet these expectations, as they are tightly linked to NISER's plans of completing the project within the time frame.

11. Locations for the Supply / Services

The Laboratory Equipments covered by this document is required to be supplied and Installed at School of Physical Sciences of NISER, Jatni. Tender has to give under taking that **he will delivered & install the equipment supplied by him at our new campus at Jatni free of cost.**

12. Order Placement and Release of Payment

The Purchase Order and payment shall be processed by –

**Stores & Purchase Officer
National Institute of Science Education & Research,
Jatni Campus, P.O. – Bhimpur-Padanpur, Via-Jatni,
Khurda – 752050, Odisha, INDIA**

Payment for the items to be supplied by the vendor against the purchase order shall be made by National Institute of Science Education & Research as follows:-

80% payment will be made after 100% delivery of the material on submission of original invoice and original delivery challans duly signed and stamped by the authorised representative of NISER along with performance Bank Guarantee.

Balance 20% payment will be released on submission of installation and warranty certificate duly signed and stamped by the authorized representative of the user department.

In case of imports 100% payment will be made through Letter of Credit. 80% will be paid after submission original shipping documents & balance 20% will be released after satisfactory installation and commissioning along with submission of performance Bank Guarantee.

Agency Commission: Agency Commission to be paid to India Agent should be specified separately and same will be paid in INR.

The tenderers who are not agreeing to above payment terms are requested not to submit their tender otherwise their EMD will be forfeited.

13. NISER will not provide any accommodation/transportation for the engineers/ representatives for attending installation, commissioning and demonstration work. It is the absolute responsibility of the Principal Supplier/Indian Agent to make their own arrangements.

14. The successful bidder, on award of contract / order, must send the contract / order acceptance in writing, within 7 days of award of contract / order failing which the EMD will be forfeited.

15 Period of validity of bids

Bids shall be valid for a period of 90 days from the date of opening the Technical bid.

NISER may ask for the bidder's consent to extend the period of validity. Such request and the response shall be made in writing only. The bidder is free not to accept such request without forfeiting the EMD. A bidder agreeing to the request for extension will not be permitted to modify his bid.

Bid evaluation will be based on the bid prices without taking into consideration the above corrections.

16. AWARD OF CONTRACT

NISER shall award the contract to the eligible bidder whose bid has been determined as the lowest evaluated commercial bid. If more than one bidder happens to quote the same lowest price, NISER reserves the right to award the contract to more than one bidder or any bidder.

Purchaser's Right to vary Quantities at the time of Award: NISER reserves the right at the time of award of Contract to increase or decrease the quantity of items specified in the Schedule of Requirements without any change in price or other terms and conditions.

17. Corrupt or Fraudulent Practices

NISER requires that the bidders who wish to bid for this project have highest standards of ethics. NISER will reject a bid if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices while competing for this contract. NISER may declare a vendor ineligible, either indefinitely or for a stated duration, to be awarded a contract if it at any time determines that the vendor has engaged in corrupt and fraudulent practices during the execution of contract.

18. Interpretation of the clauses in the Tender Document / Contract Document

In case of any ambiguity / dispute in the interpretation of any of the clauses in this Tender Document, Director, NISER's interpretation of the clauses shall be final and binding on all parties.

19. Price

The price quoted shall be considered firm and no price escalation will be permitted at any time. The quotation should be in Indian Rupees or any known foreign currency. Packing, forwarding, freight, insurance, **Agency commission** and commissioning charges, if any extra may be quoted separately in Commercial Bid.

In case of INR bids the price criteria should be on F.O.R., NISER, Jatni. Govt. Levies like central excise duty, sales tax, octroi, WCT etc., if any, shall be paid at actual rates applicable on the date of delivery. Rates should be quoted accordingly giving the basic price, Central Excise Duty, VAT/

Central Sales Tax etc., if any. Please note that NISER is exempted from payment of Excise duty vide Govt. Notification No.10/97-Central Excise dated 1st March, 1997.

Please provide TIN no. of the firm along with the CST/WCT No. allotted by the concerned authorities in your quotation.

In case of Foreign Currency bid: - Price criteria should be FOB nearest airport detail break up of Price, FCA cost, **Agency Commission**, Insurance, Freight up to Kolkata Airport is required.

20. Pre-installation:

Pre-installation facilities required for installation may please be intimated in the technical bid. Subsequently, before the consignment lands in NISER, Jatni the bidder shall confirm that the pre-installation requirements are sufficient for installation of the equipments. In other words the bidder should continuously monitor the pre-installation requirements and see that everything is ready before the consignment is taken to the site for installation.

21. Installation, Warranty & Support

Bidder shall be responsible for installation / demonstration wherever applicable and for after sales service during the warranty and thereafter.

The items covered by the schedule of requirement shall carry minimum three years comprehensive warranty from the date of acceptance of the equipments by NISER. Warranty shall include free maintenance of the whole equipment supplied including free replacement of parts. The defects, if any, shall be attended to on immediate basis but in no case any defect should prolong for more than 24 hours. The comprehensive warranty includes onsite warranty with parts.

The defects, if any, during the guarantee/warranty period are to be rectified free of charge by arranging free replacement wherever necessary. This includes cost, insurance, freight, custom duty, octroi, local taxes if any should be borne by the beneficiary or his agent. A clear confirmation should be given for this item.

The bidder shall assure the supply of spare parts after warranty is over for maintenance of the equipment supplied if and when required for a period of 10 years from the date of supply of equipment on payment on approved price list basis.

The equipment must be supported by a Service Centre manned by the principal vendor's technical support engineers. The support through this Centre must be available 24 hours in a day, seven days a week and 365 days a year. Also it should be possible to contract the Principal's vendor support Centre on a toll free number/web/mail.

The vendor will have to arrange for all the testing equipment & tools required for installation, testing & maintenance etc.

22. Indemnity

The vendor shall indemnify, protect and save NISER against all claims, losses, costs, damages, expenses, action suits and other proceeding, resulting from infringement of any law pertaining to

patent, trademarks, copyrights etc. or such other statutory infringements in respect of all the equipment's supplied by him.

The successful will be fully responsible for payment of wages and other dues as prescribed and compliance of various Labour Laws.

The successful tender should give an undertaking that the staff deployed at the centre in terms of this contract at all time will be employees of the agency exclusively and they shall not be entitled to any claim of employment or permanency of job with NISER.

NISER reserves the right to forfeit whole or part of the security money towards any damage/lose caused due to the negligence on the part of the agency engaged.

23. Insurance

The equipment's to be supplied will be insured by the vendor against all risks of loss or damage from the date of shipment till such time it is delivered at NISER site in case of Rupee/Foreign currency transaction.

24. Penalty for delayed Services / LD

As time is the essence of the contract, Delivery period mentioned in the Purchase Order should be strictly adhered to. Otherwise the bidder will forfeit EMD/SD and also LD clause will be applicable /enforced.

If the supplier fails to Supply, Install and Commission the equipment as per specifications mentioned in the order within the due date, the Supplier is liable to pay liquidated damages of 1% of order value per every week of delay subject to a maximum of 10% beyond the due date. Such money will be deducted from any amount due or which may become due to the supplier.

NISER reserves the right to cancel the order in case the delay is more than 30 days Penalties, if any, will be deducted from the EMD.

25. Jurisdiction

If a dispute arises out of or in connection with the contract, or in respect of any defined legal relationship associated therewith or derived therefrom, the parties agree to submit that dispute to arbitration under the ICADR Arbitration Rules, 1996.

The authority to appoint the arbitrator(S) shall be the International Centre for alternative dispute resolution.

The International Centre for Alternative Dispute Resolution will provide administrative services in accordance with the ICADR arbitration Rules, 1996.

**Stores & Purchase Officer
NISER, Jatni**

DECLARATION BY THE VENDOR

It is hereby declared that I/We the undersigned, have read and examined all the terms and conditions etc. of the tender document for which I/We have signed and submitted the tender under proper lawful Power of Attorney. It is also certified that all the terms and conditions of the tender document are fully acceptable to me/us and I/We will abide by the conditions from serial no. 1 to 25 and we have not given any printed conditions beyond the scope of this tender. This is also certified that I/We/our principal manufacturing firm have no objection in signing the purchase contract if the opportunity for the supply of the items against this tender is given to me/us.

Date:

Signature:

Address:

Name:

Designation:

On behalf of:

(Company Seal)



PART - 1
FOR SUPPLY AND INSTALLATION OF
PHYSICAL PROPERTIES MEASUREMENT SYSTEM (PPMS)
FOR
NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, JATNI
General Information

1.	Name of the Company	
2.	Full address of company alongwith Telephone no. Fax no. E-mail address :	
3.	Local address of company for communication, if any	
4.	Are you a manufacturer or dealer/reseller	
5.(a)	Annual turn over in last 3 financial years in Rs. Crores. (i) Year 2013-2014 (ii) Year 2014-2015 (iii) Year 2015-2016	
5.(b)	Supply & Installation of PHYSICAL PROPERTIES MEASUREMENT SYSTEM (PPMS) equivalent to our tendered OF last 3 financial years in State Government or Govt. of India Department(s) /Reputed Organisation(s) (in Nos. and Value) (Please attach list of clients) (i) Year 2013-2014 (ii) Year 2014-2015 (iii) Year 2015-2016	
5.(c)	Trade Tax / Sales Tax Registration no. with Place	
5.(d)	Income Tax Registration no. with place	



**SUPPLY AND INSTALLATION
OF
PHYSICAL PROPERTIES MEASUREMENT SYSTEM (PPMS)
FOR
NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, JATNI
TECHNICAL SPECIFICATION**

S. No.	Item Specification	Offered specification with Make & Model No. please specify any deviation if any. Please attach separate sheet if required
(1)	(2)	(3)
01	PHYSICAL PROPERTIES MEASUREMENT SYSTEM (PPMS) (NC-000620-PHY-16-17)	
	Please find the detailed specification of “ PHYSICAL PROPERTIES MEASUREMENT SYSTEM (PPMS) ” attached in Annexure-I	

Note: - Parties must mention make & model no. of the equipment offered by them, with detailed specification (on separate sheet) & deviation if any. Otherwise their tender will not be accepted.

Physical Properties Measurement System (PPMS)

Supply and installation of completely integrated and fully automated, computer controlled cryogen free magnet system for measurement of physical properties as a function of temperature (1.8-400 K) and magnetic field up to 9 T that should be fully compatible with various measurement probes such as *ac susceptibility, heat capacity, vibrating sample magnetometer, electrical transport, rotating sample stage, thermal transport, FMR etc.*

BASE System:

- 1) System should be fully cryogen-free, i.e. no requirement of liquid Helium and/or liquid Nitrogen. Both superconducting magnet and cryostat assembly should be cooled by single pulse tube type (two stage) closed cycle refrigerator (CCR) of appropriate cooling capacity of cold head and compressor.
- 2) Any Liquid Helium and/or cold Helium gas flow into sample chamber or to any other parts within the system, and all low temperature operations must be handled in fully automated way through electronic and computer controls. The system should NOT have any manual control in the entire operation of the system.
- 3) The system should be equipped with number of thermometers at different stages/locations to monitor their temperatures through the main operating software.
- 4) System should be well isolated for low noise measurements.
- 5) Magnet control software monitors the temperature of the magnet and cryostat at 3 locations to ensure proper operation of the magnet system and avoid time consuming quenches.
- 6) System should have a built in magnetic shield. For a system with a 9 T magnet, this shield maintains the 5 gauss line <30 cm the surface of the cryostat cabinet allowing the system to be installed closer to other sensitive instruments for better lab space utilization. (provide data)

Superconducting magnet with longitudinal field in the range of $\pm 9T$

1. ± 9 Tesla field strength
2. Sweep rate: Up to 200 Oe/sec
3. Field homogeneity ± 0.01 % over 3 cm on axis
4. Field stability: 1 ppm/h
5. Thermometer directly on the magnet. Automatic discharge of the magnet if the cryocooler system fails. (E.g. due to water chiller failure.)
6. Bi-polar power supply with over voltage protection & indication. There should be no overshoot in the field or the tolerable overshoot in "No Overshoot" mode should be specified for various field strengths. Please also
7. specify the approach mode i.e. linear, oscillating or non-overshoot.
8. Magnet must be protected from quenches
9. The magnet should have Oscillating mode so as to reduce remnant magnetic field as small as possible.

Temperature Control:

Cryostat assembly which will include sample chamber and radiation shields and other assembly must be cooled by counter flow heat exchange mechanism for efficient cooling and efficient use of cooling resources. It should be equipped with double cold gas flow control systems, one for primary large impedance gas flow and a secondary fine flow of gas/liquid to achieve quick and good temperature control. It should be continuous low temperature operation. All the operations must be fully automated without user intervention

The system should enable cooling of samples from highest temperature to the lowest at the highest specified cooling rate at any given magnetic field (up to 9T) without affecting the system performance or heating of magnet or resulting in a magnet quench. Same thing should hold for heating of the samples as well

1. Temperature range of 1.8 to 400 K , with mili kelvin stability and accuracy.
2. Temperature stability should be at least $\pm 0.5\%$ for $T < 10$ K / $\pm 0.05\%$ for $T > 10$ K
3. Cooldown time from RT to 1.8 K not more than 45 minutes Sweeps through 4.2 K are smooth and monotonic on cooling and warming sequences.
4. Dual Helium impedance design (no mechanical “cryogenic needle-valve”) for continuous, fully automated, low temperature operation. Measurement at $T < 4.2$ K are possible for a continuous long time.
5. Accuracy: $\pm 1\%$ and sweeping rate 0.01 to 30K/min irrespective of the magnitude of applied magnetic field.
6. Temperature Stability: at least $\pm 0.2\%$ or better
7. Fast Settle, No Overshoot, and Sweep mode.
8. Temperature control should be fully automated.

Heat capacity:

1. Heat Capacity measurement using Relaxation technique, fully automated sequencing & curve fitting. The software should provide the features to measure & subtract addenda.
2. Sample Size: 1 – 500 mg (20 mg, typical)
3. Heat Capacity Resolution: 10 nJ/K @ 2K (to be specified by the company and the claim to be corroborated by appropriate references of the papers/patents published by scientists using their equipment)
4. Measurement Accuracy: $< 5\%$, 2K – 300K $< 2\%$ (typical)
5. Suitable sample holders to be provided to keep the sample along the field directions, in order to protect the strongly magnetic samples while sweeping the magnetic field.
6. Thermometers on the platform.
7. Full curve fitting analysis, 2 tau & slope-analysis

Horizontal Rotator:

1. To measure angular dependence of resistivity, Hall Effect, I-V Characteristics, etc., in an axis perpendicular to vertical magnetic field.
2. Should have easily mountable/dismountable PCB sample loading platform with gold pads for electrical connections. It should be capable of mounting 2 samples and should have thermometer to closely monitor sample temperature.

3. Angular range: -10° to 370° with a step size of 0.05° ; Angular speed \sim
4. $10^{\circ}/\text{sec}$.
5. Angular step Resolution 0.011 deg/step

Thermal Transport:

1. Thermal conductance measurement accuracy: $\pm 5 \%$ or better
2. Typical accuracy of the Seebeck coefficient: $\pm 5 \%$ or better
3. Seebeck coefficient measurement range: 1 V/K to 1 V/K or wider
4. Slew rate should be 0.2 K/min or larger

AC and DC transport:

1. 4-wire & 2-wire resistivity and simultaneous Hall effect measurement, I-V characteristics and differential resistance measurement (dV/dI vs. I or dV/dI vs V)
2. Should have two built-in independent sources and meters so that two measurement channels are truly independent.
3. In addition to standard mode (4-wire resistance up to $10\text{M}\Omega$), there should be high impedance mode - 2-wire resistance measurement up to $5\text{G}\Omega$.
4. Current Source: DC & AC, **10nA** (or less) to 100 mA (or more) or better continuous (1 Hz to 200hz or better for ac)
5. Sensitivity: 20 nV or better

AC Susceptibility:

1. AC magnetic measurements with $1 \times 10\text{E-}8$ emu sensitivity at 10 kHz
2. Drive amplitude 5mOe to 15 Oe
3. Frequency range 10Hz to 10 KHz
4. Phase resolution 0.5 deg
5. Stability: $\pm 1\%$ for $T < 50 \text{ K}$: $\pm 0.5\%$ for $T > 50\text{K}$
6. Accuracy: $\pm 0.5\%$ over the entire temperature and field range
7. DC sensitivity $5 \times 10^{-6} \text{ emu}$
8. Option to measure AC susceptibility down to 50 mK (using DR option)

A dedicated software is necessary that controls all features.

At least two sets of spare sample holders for each option (for heat capacity, dc resistivity, ac transport, etc..) should be included. Standard samples for test purpose of each option is necessary.

Future options like pressure cell, Dilatometer, VSM, oven, He3, DR, FOSH, multi function probe etc should be compatible with the system.

Suitable UPS and chiller also should be provided.

PART-2



**FINANCIAL BID
FOR SUPPLY AND INSTALLATION
OF
PHYSICAL PROPERTIES MEASUREMENT SYSTEM (PPMS)
FOR
NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH,
JATNI**

Sl. No.	Systems	Approx. Qty.	Unit Price FOB in Foreign currency	Unit Price including all taxes, freight, Insurance, entry tax (delivered at NISER, Jatni) service charges, installation and warranty charges in INR
(1)	(2)	(3)	(4)	(5)
01	PHYSICAL PROPERTIES MEASUREMENT SYSTEM (PPMS)	01 Nos		
2.	Above item should carry three years onsite comprehensive warranty . In case the tendered provide warranty less than 03 years then bidders has to give justification for lesser period of warranty. Without justification tender submitted is liable to be rejected.			
3.	Agency Commission to be paid to Indian Agent (will be paid in INR only after successful installation)	Included/Excluded _____ . _____ % of basic price		
5	CIP Kolkata Charges	Amount		
6	Excise Duty Included/Excluded in the quoted price	_____ . _____ % of basic price (Excise duty exemption certificate will be issued)		
7	Custom Duty Included/Excluded in quoted price	_____ . _____ % of basic price (Custom Duty exemption certificate will be issued)		
9	Any other charges Included/Excluded in the quoted price (i) Trade tax/Sales tax (Institute will not issue any Sales Tax concession form) (ii) Any other levies	_____ . _____ % of (basic price + excise duty) _____ . _____ %		
10	AMC Charges after expiry of warranty	Amount in INR		

ALL ABOVE ITEMS ON 3 YEARS ONSITE FULL COMPREHENSIVE FREE WARRANTY.

Date:

Address:

(Company Seal)

Signature:

Name:

Designation: On behalf of:

(Please take the printout on your letter head along with all details)

To,
The Finance Officer
NISER, Jatni Campus
P.O. – Jatni, Khurda - 752050
Odisha, INDIA

Ref: Tender Ref. No.: _____ Dated. _____

Sub: Refund of EMD

Dear Sir,
We have deposited EMD of Rs. _____/- vide D/D No. _____ dated.
_____ of _____ **(Name of Bank)** against
above mentioned tender. Since our tender has not being qualified, we request to release our
EMD.

Yours faithfully,

Signature of the Authorised Signatory
(with company seal)

Our addressed is verified as below:

M/s. _____

Pin Code: _____

Phone No.: _____



**NATIONAL INSTITUTE OF SCIENCE EDUCATION & RESEARCH
JATNI CAMPUS, P.O. – BHIMPUR-PADANPUR, VIA-JATNI
KHURDA – 752050, ODISHA, INDIA
Tender Notice No.PTN-82/2016**

CHECK LIST

Your bid should accompany with following documents. Please enclose the required document and put (√) mark in the check list where ever applicable.

Sl. No.	Description of Documents	Enclosure
1.	EMD to be attached with Technical bid only	Yes / No
2.	Part I of Tender Documents with Declaration by the Vendor	Yes / No
3.	Duly filled EMD refundable sheet (if EMD is there)	Yes / No
4.	General Information Sheet	
	Annual turnover in last 3 financial years in Rs. Crores (i) Year 2011-2012 (ii) Year 2012-2013 (iii) Year 2013-2014	Yes / No
	Supply & Installation of equivalent to our tendered for the required item from last 3 financial years in State Government or Govt. of India Department(s) /Reputed Organisation(s) (in Nos. and Value) (Please attach list of clients) (i) Year 2011-2012 (ii) Year 2012-2013 (iii) Year 2013-2014	Yes / No
	Trade Tax / Sales Tax Registration no. with Place	Yes / No
	Income Tax Registration no. with place	Yes / No
5.	Detailed technical description of the item	Yes / No
6.	Detailed filled Financial Bid	Yes / No
7.	Authorisation letter in letter head duly signed by the authorised signatory for allowing your representative to attend the tender opening meeting.	Yes / No

Signature of the Authorised Signatory with Date
(with Company Seal)