



**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 E-Tender No. NIT-14/2018 (NC-000004-CHE-17-18)**

**BET\_Gas Sorption Equipment**

**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**

### **Notice Inviting E-Tender No. NIT-14/2018 (NC-000004-CHE-18-19)**

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:-

<b>Sl. No.</b>	<b>Name of the Items</b>	<b>Tender No.</b>	<b>Name of Department</b>	<b>Indent No.</b>	<b>Qty.</b>	<b>EMD in INR</b>
01	BET_Gas Sorption Eupment	NIT-14/2018	School of Chemical Sciences	NC-000004-CHE-18-19	01 No.	200000/-

Tender can be downloaded and bided from website address: [www.tenderwizard.com/NISER](http://www.tenderwizard.com/NISER). Tender documents for viewing only are also available in NISER web-site address: [www.niser.ac.in](http://www.niser.ac.in). further all corrigendum and addendum will be published on NISER website and tenderwizard portal.

NISER is publishing all its public and limited tender on NISER website.

**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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E- 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:-

**NB: PARTIES REGISTERED WITH SSI/DGS&D/DAE/MSME/NSIC AND FOREIGN PARTIES QUOTING DIRECTLY ARE EXEMPTED FROM PAYING EMD and Tender Fee.**

**Standard e-Tender Terms & Conditions**

1. The details of tender notification can be downloaded from [www.tenderwizard.com/NISER](http://www.tenderwizard.com/NISER) under "Tender Free View" link.
2. Vendors should obtain the USER ID and PASSWORD from [www.tenderwizard.com/NISER](http://www.tenderwizard.com/NISER) by clicking on "REGISTER ME" link in the homepage.
3. The Vendor registration fee has to be paid to ITI Ltd for Rs. 1180/- including GST using the e-payment link provided at the time of registration, and the mode of payments are Credit Card, Debit Card and Internet Banking. Vendor Registration is Valid for 01year.
4. For further details on e-Tender participation, please contact ITI Help desk on
  - Telephone: 080-49352000/9686115318
  - Email: [harishkumar.kb@etenderwizard.com](mailto:harishkumar.kb@etenderwizard.com), [ambasa@etenderwizard.com](mailto:ambasa@etenderwizard.com).
5. Tenders should be submitted only through E-Tender portal and obtain the Tender Acknowledgement copy as a proof of successful submission.
6. **For any query regarding tender terms & conditions please sent email to [spo@niser.ac.in](mailto:spo@niser.ac.in).**

**Stores & Purchase Officer**



**NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH  
NIT OPEN DOCUMENT (2 PART BID)  
SUPPLY & INSTALLATION  
OF  
BET\_Gas Sorption Equipment  
Notice Inviting E-Tender No. NIT-14/2018 (NC-000004-CHE-18-19)**

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: BET\_Gas Sorption Equipment**
- **Tender Enquiry No: NIT-14/2018 (NC-000004-CHE-18-19)**
- **Last date of submission of E-bid : 11/10/2018 up to 11.00 a.m**
- **Opening of Technical Bids : 11/10/2018 at 12.30 p.m**

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

**The Institute can provide following documents.**

1. **Custom Duty exemption certificate (for custom duty @5.15%)**
2. **GST Exemption Certificate (for GST @ 5%)**

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

**This is payable in cash or Demand Draft of a scheduled Bank in favour of  
Director, NISER payable at Bhubaneswar/Jatni**



**PART - 1**  
**TERMS & CONDITIONS**  
**FOR SUPPLY AND INSTALLATION OF**  
**BET\_Gas Sorption Equipment**  
**FOR**  
**NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, JATNI**  
**Notice Inviting E-Tender No. NIT-14/2018 (NC-000004-CHE-18-19)**

1. Director, National Institute of Science Education & Research, Jatni (NISER) invites E-Tenders for **BET- Gas Sorption Equipment** from the Manufacturer and their authorised reseller only having following credentials.
  - A. Should have satisfactorily completed **03 similar supplies** (at least one of them in Central Government/Central Autonomous Body/Central PSU) in last 05 years.
  - B. Similar or Similar Nature of work means** Supply & Installation of **BET- Gas Sorption Equipment** 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.**

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.

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

**For Technical Information of BET- Gas Sorption Equipment:**

**Indentor name : Dr. Jogendra Nath Behera**

School of Chemical Sciences, NISER.

E-Mail – Jogendra Nath Behera <jnbehera@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

**3. Supply means:**

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

**4. Tender Document:**

**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.

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 sent by post so that it reaches on or before the opening of the technical bid of e-tender system in the form of Account Payee Bank Draft payable on any branch of Nationalised/Schedule Bank at Bhubaneswar/ Jatni in favour of “Director, 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 & TENDER COST. 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.

a) 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. Following documents needs to be uploaded on E-Tender portal.

a) 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.

b) Copy of GST No. and PAN No. allotted by the concerned authorities.

c) List of deliverables / Bill of materials and services.

d) Compliance sheet with any deviation with reference to the terms and specifications.

e) 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.

#### **“Commercial Bid” shall contain:**

a) Price schedule shall complete in all respects. **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 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.**

## **5. Tender process & award of contract.**

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.

- (a) NISER will open commercial bids of only the short listed bidders, 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.
- (b) ONLY TECHNICALLY accepted competitive bids will be considered for placing Purchase Order.
- (c) **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.

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

## **7. Delivery Period / Timeliness**

The deliveries, installation must be completed within 90 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.

## **8. Locations for the Supply / Services**

The Laboratory Equipment covered by this document is required to be supplied and installed at School of Chemical Science of NISER, Jatni.

## **9. 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:-

### **Foreign Currency payment:-**

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, commissioning, warranty certificate and along with submission of Performance Bank Guarantee.

### **INR payment:-**

80% will be released after receipt of material in good condition & balance 20% will be released after satisfactory installation, commissioning, warranty certificate and along with submission of Performance Bank Guarantee.

**Agency Commission: Agency Commission to be paid to Indian 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.**

**10. 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.

**11. 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.

**12. Period of validity of bids**

- (a) Bids shall be valid for a period of 90 days from the date of opening the Technical bid.
- (b) 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.
- (c) Bid evaluation will be based on the bid prices without taking into consideration the above corrections.

**13. 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.

**14. 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.

**15. Price**

- (a) 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.
- (b) In case of INR bids the price criteria should be on delivered at NISER, Jatni including Free onsite comprehensive **Three years** warranty, packing, transportation, insurance, loading & unloading (At NISER) etc. charges. Govt. Levies like GST, etc., if any, shall be paid at actual rates applicable on the date of delivery. Rates should be quoted accordingly giving the basic price, GST, etc., if any.
- (c) Please provide GST No. of the firm allotted by the concerned authorities in your quotation.
- (d) In case of Foreign Currency bid: - Price criteria will be FOB nearest International Airport/Sea Port including Free onsite comprehensive **Three years** warranty, installation, commissioning & Training & demonstration charges. Agency Commission if any is required to be quoted separately in Financial bid which will be paid directly to Indian agent in INR.

**16. 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.



## **17. 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 year free comprehensive warranty from the date of installation of the equipment*** 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, GST, local taxes if any should be borne by the beneficiary or his agent. A clear confirmation should be given for this item.***
- The OEM/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 7 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, three 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 tools required for installation, testing & maintenance etc.

## **18. 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 bidder will be fully responsible for payment of wages and other dues as prescribed and compliance of various Labour Laws.
- The successful tenderer 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.

## **19. Insurance**

The equipment 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 or as per agreed terms, in case of Rupee/Foreign currency transaction.

## **20. 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 EMD/SD will be forfeited 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.

## **21. 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 there from, 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 21 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 has 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)



**SUPPLY AND INSTALLATION  
OF  
BET\_Gas Sorption Equipment  
FOR  
NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, JATNI  
Notice Inviting E-Tender No. NIT-14/2018 (NC-000004-CHE-17-18)**

**General Information –Self Attested**

[www.tendewizard.com/NISER](http://www.tendewizard.com/NISER)

<b>Vendor Name</b>			
<b>Sl. No.</b>	<b>Basic Information</b>	<b>Please fill details</b>	<b>Page No. with name of the documents attached in support of information required</b>
1	<b>Name of the Company</b>		
2	<b>Full address of company along with Telephone no. Fax no. E-mail address :</b>		
3	<b>Local address of company for communication, if any</b>		
4	<b>Are you a manufacturer or dealer/reseller</b>		

5	<b>If dealer please attach certificate from your principal company clearly showing validity of the certificate</b>		
6	<b>If foreign supplier : Please give details of your Indian authorised partner if any</b>		
7	<b>Annual turn over in last 3 financial years in Rs. Crores. (i) Year 2015-2016 (ii) Year 2016-2017 (iii) Year 2017-2018 Please attach balance sheet</b>		
8	<b>Supply &amp; Installation of BET_Gas Sorption Equipment 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 2015-2016 (ii) Year 2016-2017 (iii) Year 2017-2018 Please attach copy of Purchase Order/ Completion Certificate</b>		
9	<b>GST Registration no. with Place</b>		
10	<b>Income Tax Registration no. with place</b>		
11	<b>Photocopy of EMD (If Applicable)</b>		

12	<b>Name and address on whom purchase order will be placed</b>		
13	<b>Bank details of the supplier on which order will be placed</b>		
14	<b>If you are claiming exemption certificate under SSI/DGS&amp;D/DAE, Please attach self attested copy of certificate which should be valid during the tender process</b>		
15	<b>Service centre details &amp; principal vendor support centre</b>		
16	<b>Delivery period :Please mention time of delivery &amp; Installation</b>		
17	<b>Declaration to be submitted by Vendor</b>		
18	<b>Warranty :- 03 year</b>		



**TECHNICAL BID  
SUPPLY AND INSTALLATION  
OF  
BET\_Gas Sorption Equipment  
FOR  
NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, JATNI  
Notice Inviting E-Tender No. NIT-14/2018 (NC-000004-CHE-17-18)**

[www.tenderwizard.com/NISER](http://www.tenderwizard.com/NISER)

Vendor Name		-	
SL. No.	Item Specification	Accepted/Not Accepted/Deviation if any. Please specify your specification if deviation is there	Page No. of your specifications/Brochure/Deviation, etc attached in support of your specification/deviation
1	PHYSISORPTION		
A.	Isotherms : Up to 1000 data points (per station) adsorption and /or desorption Hysteresis Scanning		

B.	<p>a.Surface Area: BET, Langmuir, STSA, DFT, BJH or more methods</p> <p>b.Micropores : NLDFT, t-plot, alpha-s or more methods</p> <p>c. Mesopores : NLDFT, BJH or more methods</p> <p>d. Operating modes: Classical helium void volume or helium free mode</p> <p>e. Simultaneous Operation : Analysis with degassing</p> <p>f. P/Po range : &lt;math&gt; &lt; 1 \times 10^{-8} - 0.999 &lt;/math&gt;</p> <p>g. Degas system : 6 port degassing system with vacuum capability down to <math>10^{-3}</math> mmHg.</p> <p>Additionally the instrument should be capable of degassing samples under highvacuum <math>10^{-8}</math> mm Hg or better. The degas vacuum should not be shared with analysis ports</p>		
C.	<p>Analysis system : Minimum Two Sample Port, dedicated vacuum pump with capability of <math>5 \times 10^{-9}</math> mm Hg or better, this should not be shared with the degas stations</p>		
D.	<p>Surface Area Range : 0.0005 m<sup>2</sup>/g and up</p>		
E.	<p>a.Pore Size Range : 0.35 to 500 nm or more</p> <p>b.Micropore Volume : Detectable within 0.0001 cc/g</p> <p>c.Pressure Transducer : Both the analysis station should have 0.1, 10 and 1000 torr transducer</p>		
F.	<p>Coolant Level : Controlled to maximum <math>\pm 1</math> mm with level sensor or system without involving level sensors</p>		
G.	<p>LN2 Dewar : 3 liters (minimum, Should provide up to minimum 50 hours of unattended analysis. Cryogen Dewar may be refilled without affecting the accuracy of results</p>		
H.	<p>Re-circulating Dewar Kit for CO<sub>2</sub> measurement : Double-wall dewar, holder, water level sensor and any other attachments needed to run CO<sub>2</sub> sorption experiments</p>		



I.	Ultimate Vacuum : $5 \times 10^{-10}$ mbar		
J.	<b>Adsorbates :</b> The system should be designed to use following gases. He, Kr, N <sub>2</sub> , Ar, O <sub>2</sub> , H <sub>2</sub> , CO, CO <sub>2</sub> , NH <sub>3</sub> , H <sub>2</sub> O, NO, SO <sub>2</sub> , H <sub>2</sub> O, CH <sub>3</sub> OH, C <sub>2</sub> H <sub>5</sub> OH, C <sub>7</sub> H <sub>8</sub> (Toluene), C <sub>6</sub> H <sub>6</sub> (Benzene) and other non-corrosive gases Choice of gas should be selectable automatically through the software program during analysis.		
K.	<b>Gas line:</b> The System should have atleast one mixed gas line with provision for expansion to three or more		
L.	Software : Proper software should be supplied for smooth running of the system which will able to do all types of calculations mentioned above		
M.	Consumable : The instrument should be supplied with all the accessories and consumables to run for at least five years More precisely, Sample cell of 6, 9 and 12 mm stem with both large and small bulb and corresponding filler rods : Five numbers each, All types of O-rings necessary for the operation Additional Flanges: 10 numbers Reference cell: 2 numbers Surface Area Reference materials of various surface areas should be supplied		
N.	Chiller for running CO <sub>2</sub> at low temp : Imported branded chiller for use with vapor option and for CO <sub>2</sub> /0 °C applications. The temp range if between -30 °C to 65 °C or better		
O.	Vacuum Pump : Suitable vacuum pump needed for operation should be offered along with the system		
P.	Vapor sorption capability : Factory installed full vapor capability with all accessories for trouble free operation		

2	<b>Chemisorption Facility (separate unit)</b>		
A.	Furnace and Temperature System : A furnace should be offered to run automatically the temperature-programmed experiment. It should have facility for easy removing and loading of the sample holder.		
B.	Temperature Range : Ambient temperature to 1100 oC and fan assisted cooling		
C.	Ramp rates: 50 oC per minute from 50 oC to 500 oC range. 30 oC per minute from 500 oC to 1000 oC range.		
D.	Temperature Programmed studies : TCD , for Temperature Programmed Desorption Temperature Programmed Reduction Temperature Programmed Oxidation Single point BET and pulse chemisorption measurement		
E.	Liq. N2 Storage Dewar : 5 and 30 liter		
F.	Sample holder : The unit should be provided with suitably designed quartz tube to accommodate various catalyst volumes and sizes for use up to 1100 oC.		
G.	Computer and printer 2 : computers with Intel i7 with 3.1GHz, RAM 8 GB, HDD 1 TB, DVD-RW, 2x Gigabit Ethernet network card, ATI Radeon HD6670 1GB, Windows 7 Ultimate 64-bit or better, Laserjet printer		
H.	Mass Spectrometer (optional) : Instrument should have provision to connect Mass spectrometer		
I.	Gas supply and regulators : 10 gas cylinders with proper regulators and its accessories for Physisorption and Chemisorption analysis of the following gases [N2 (2 nos), H2, CO2, NH3, He, CH4, Ar, N2-H2 mixture, N2-O2mixture)		

3	<b>OPTIONAL ITEMS: High pressure adsorption measurement system</b>		
A.	Measurement principle: Volumetric adsorption method		
B.	Adsorptive: N <sub>2</sub> , Ar, O <sub>2</sub> , CO, H <sub>2</sub> , CO <sub>2</sub> , CH <sub>4</sub> and other non-corrosive gas		
C.	Pressure range : High Vacuum to 100 bar or more		
D.	Temperature range: Cryogenic to 400 oC or more		
E.	Measurement software: Adsorption / desorption isotherm measurement and adsorption kinetics.		
F.	Analysis software: Adsorption / desorption isotherm, BET method, Langmuir method, Langmuir method, Micropore volume by DA method Isosteric heat of adsorption (Clausius-Clapeyron equation)		
G.	Computer and vacuum pimp : A personal computer and an oil vacuum pump and a refrigerated/heating circulator must be provided		
H.	UPS : 10 kva ups with battery and minimum 1 hour backup		
I.	Warranty : Warranty Three years + AMC for additional 2 years		

J.	Installations & training : Installation, Commissioning and On-Site Training		
K.	Prices : To be quoted as CIF Kolkata		
L.	Note : Compliance statement: With soft copy - point wise according to our document User List: Provide user list with contact (address and Phone) details where the quoted model has been installed in last 3 years. Original documents supporting the specifications should be provided.		
M.	AMC Charges after expiry of warranty (in percentage)		



**FINANCIAL BID  
SUPPLY AND INSTALLATION  
OF  
BET\_Gas Sorption Equipment  
FOR  
NATIONAL INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, JATNI  
Notice Inviting E-Tender No. NIT-14/2018 (NC-000004-CHE-17-18)**

[www.tenderwizard.com/NISER](http://www.tenderwizard.com/NISER)

Vendor Name							
SL · No ·	Item Specification	Qty	Type of Curren cy	Unit Price in Foreign currenc y as per terms & conditio n no.15(d ) of Tender docume nt.	Total Price in Foreign Currenc y as per terms & conditio n no.15(d ) of Tender docume nt.	Unit Price in INR as per terms & conditio n no.15(b ) of Tender docume nt.	Total Price in INR as per terms & conditio n no.15(b ) of Tender docume nt.
1	<b>PHYSISORPTION</b> (Specification as per technical Bid)	1					
2	<b>Chemisorption Facility (separate unit)</b> (Specification as per technical Bid)	1					
	<b>Sub Total</b>				<b>0.00</b>		<b>0.00</b>

	<b>Agency Commission</b>						
	<b>GST Charge If Any</b>						
	<b>Grand Total</b>				<b>0.00</b>		<b>0.00</b>
<b>2</b>	<b>OPTIONAL ITEMS:</b>						
<b>i</b>	<b>High pressure adsorption measurement system</b>						
<b>ii</b>	<b>Measurement principle: Volumetric adsorption method</b>						
<b>iii</b>	<b>Adsorptive: N2, Ar, O2, CO, H2, CO2, CH4 and other non-corrosive gas</b>						
<b>iv</b>	<b>Pressure range : High Vacuum to 100 bar or more</b>						
<b>v</b>	<b>Temperature range: Cryogenic to 400 oC or more</b>						
<b>vi</b>	<b>Measurement software: Adsorption / desorption isotherm measurement and adsorption kinetics.</b>						
<b>vii</b>	<b>Analysis software: Adsorption / desorption isotherm, BET method, Langmuir method, Langmuir method, Micropore volume by DA method Isosteric heat of adsorption (Clausius-Clapeyron equation)</b>						
<b>viii</b>	<b>Computer and vacuum pump : A personal computer and an oil vacuum pump and a refrigerated/heating circulator must be provided</b>						
<b>ix</b>	<b>UPS : 10 kva ups with battery and minimum 1 hour backup</b>						

x	<b>Warranty : Warranty Three years</b>						
xi	<b>Installations &amp; training : Installation, Commissioning and On-Site Training</b>						
	<b>Comprehensive AMC charges after expiry of Warranty period in % of basic price only.</b>						