

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

No. F5(608)ST/MNIT/CHEM/2021

Phone : 0141-2713312,2713352

NOTICE INVITING QUOTATIONS

Registrar, MNIT, JLN Marg, Jaipur invites sealed tenders for the supply of “**Equipment**” for **Chemical Engineering Department** of this Institute in **Two Bid System (Technical & Financial bids in separate envelop)** as per schedule given below.

Event	Date & Time
Download of Tender	21.12.2021
Pre-Bid Meeting Date & Time	28.12.2021 by 2.00 PM
Bid Submission Last Date& Time	11.01.2022 by 2.00 PM
Technical Bid Opening Date & Time	11.01.2022 at 3.00 PM
Financial Bid Opening	Will be intimated later on
Earnest Money	The attached certificate (Annexure – D) is to be furnished along with your tender in respect of bid security. Failing this your offer will not be considered.

Quotation must be enclosed in a properly sealed envelope address to the MNIT, Jaipur with kind attention to **Deputy Registrar (S&P), MNIT, Jawahar Lal Nehru Marg, Jaipur -302017** (E-mail address storepurchase@mnit.ac.in) by designation and not by name. The quotations must be super scribed “Quotations for the supply of **Equipment** ----- as called for in Tender Notice No. ----- dated _____”DUE ON----- AT -----AM/PM. The Quotation must reach on or before -----AM/ PM on or before the due date and time mentioned in the tender notice/tender document. The documents must be dropped in the tender box available in Central Store during office hours (9.30am to 6.00pm) on all working days. Bids delivered to any other place or any individual shall not be considered as valid document. Quotations sent by e-mail will not be considered valid. The complete Tender document can be viewed and downloaded only from the website (www.mnit.ac.in) and CPPP site <https://eprocure.gov.in/epublish/app> during the tender period.

GENERAL TERMS & CONDITIONS

1. **THE RATES QUOTED SHOULD BE F.O.R. JAIPUR** inclusive of all charges related to transportation from your end to MNIT, Jaipur in Indian rupees. For imported items, the rates are to be quoted CIF(Cost, Insurance & Freight) Delhi only in freely convertible foreign currencies. In case the rates are quoted CIF (Cost, Insurance & Freight) New Delhi, then it will be the responsibility of the supplier to intimate us well in advance prior to dispatch and submission of all the relevant documents in time which will be required in clearing the consignment from Custom. If, there is delay in sending the documents and demurrage is imposed, then it will be in the account of foreign supplier. **Kindly note that if any amendment is required in LC, after its establishment, the Bank Charges in this respect will be in the account of beneficiary only.** Bid shall always be both in the figures and words. The words "No quotations" should be written across any or all of the items in the schedule for which a tender does not wish to tender.
2. As far as possible, bid should be given for goods of India manufacture which are readily available. Foreign goods quoted and proposed to be supplied should be covered by normal import quota of the dealer. This institute is exempted from payment of custom duty.
3. Detailed specifications and "make" of each item should be clearly given supported by the illustrated pamphlets wherever possible. Bid without specifying the make and other particulars may be rejected. The accessories included in the equipment should also be clearly mentioned.
4. Losses or damage in transit will be in to the account of the supplier in case of rates **F.O.R. JAIPUR**. The supplier may, if he so desires, get the goods insured
5. The payment for the ordered items would be made after the articles have been received, found in order and its successful installation.Payment will be made by RTGS to indigenous suppliers. Kindly send the RTGS details and cancelled cheque along with the Invoice.**The payment to foreign supplier will be made through FDD/Wire Transfer OR Letter of Credit as the case may be. However 90 percent payment will be released after receipt of items and remaining 10 present after its successfully installation**
6. Your rates should be valid at least for three months (minimum) from the last date of opening of bid.
7. All legal proceedings, if necessity arises to institute may be any of the parties (Institute or Contractor/Supplier) shall have to be lodged in the courts situated at Jaipur and not elsewhere.
8. The institute is not bound to accept the lowest tender and may reject any tender or any part of the tender without giving any justification for such an action.

9. (a) The Penalty Clause is as under:-

If the seller fails to deliver any or all of the Goods/Services within the original /re-fixed delivery period specified in the Purchase Order, this Institute will be entitled to deduct/recover the Liquidated Damages for the delay at the following percentage:

(i)	Delay up to one month	1%
(ii)	Delay exceeding one month but not exceeding two month	2%
(iii)	Delay exceeding two month but not exceeding three month	5%
(iv)	Delay exceeding three month	5% for each month and part there of subject to maximum 10%

(b) In case of failure to supply the goods within the prescribed time and in accordance with the specifications give in the Quotations, the institute shall be free to cancel the order and make purchases from the next higher tenderer or from the open market as the case may be. In that case the loss sustained by the institute shall be recovered from the defaulting supplier. The institute will be at liberty to recover the loss from the permanent earnest money/or any other pending claims of the supplier without prejudice to its general right to affect recovery from the supplier.

10. The prospective bidders can be those who are the manufacturers of the equipment. For items manufactured outside India, the manufacturer itself can be a bidder or its authorised Indian agent can bid on behalf of its Principal that is the manufacturer.
11. In the event, the country of origin of goods is India, only the manufacturers shall be considered eligible for bidding. Authorised agents of Indian manufacturers may be permitted to submit the bid, provided the concerned manufacturer states that as its policy, it does not bid itself in India and that there is no qualitative difference between manufacturer and its agent as bidder in respect of quality of supplies, cost, and responsibility of maintenance and servicing. The Indian manufacturer must describe the alternatives in clear terms, in the event the bidding agent ceases to continue as agent of the concerned manufacturer within the stipulated warranty period.
12. If any Indian manufacturer requires importing an essential part from a foreign country, the said company may be given to enjoy the benefit of customs duty exemption with the aid of CDEC of MNIT, Jaipur provided the import of the concerned item is done on behalf of MNIT, Jaipur.

13. **THERE IS TWO BID SYSTEM:-**

(TECHNICAL AND FINANCIAL BID, both bids should be submitted in separate envelopes):

(A) Technical Bid:

- a) Bidder must be a manufacturer/authorized distributor/ Dealers and they have to enclose a certificate of authorization of manufacturer in format at **Annexure – A (Authorization certificate in any other format will not be valid)**. OEM itself or any one authorised dealer on behalf of OEM may participate in bid. OEM and its dealers both may not participate at the same time.
- b) The manufacturers should supply documentary proof i.e. Registration with the Registrar of Industries, National Small Scale Industries Corporation or with penal of MNIT in case of

manufacturer. Offers other than the manufacturers should be supported with an authority letter from the manufacturers, authorizing them to quote rates standing guarantee for the satisfactory execution of supply orders failing which offers are liable to be ignored.

- c) One declaration by the Manufacturer to the extent that in case of failure of its local agent /office to provide service support to the satisfaction of MNIT Jaipur, it shall make immediate arrangement for required service support.
- d) **Bidder should enclose technical compliance from the Manufacturer. The specifications of items should be strictly as specified. Deviation, if any may please be mentioned separately. If there is no deviation than it should be mentioned as “No Deviation”.**
- e) The leaflets catalogue, related to quoted equipment/model etc. should be sent invariably, so that a proper evaluation of the equipment offered is possible.
- f) Mention must be made of the pre-installation requirements for the equipment quoted viz. ambient temperature, humidity, weather specifications, power specifications, civil works etc. When items are provided full performance satisfaction should be demonstrated.
- g) Bidder must enclose the acceptance of terms and conditions and must enclose the duly signed and stamped tender document.
- h) All the Annexure enclosed should be duly filled up and signed.
- i) Please attach proof/certificate of each condition required in the tender document.
- j) The firm should provide approximate area required for the setting/installation of the machine / equipment.
- k) Installation support and demonstration for utilizing the equipment is also needed
- l) To mention, if any additional setup/infra is required before installation of equipment (esp. Foundation etc. For larger m/c)
- m) Bidder shall furnish the annexure- D duly filed and signed against EMD

(B) Financial Bid:

- a) The rates to be quoted by the bidder should be clearly mentioned without any overwriting
- b) If there is any cutting in the price box, issued be duly signed
- c) The bidders should clearly mentioned their payment terms & conditions
- d) The GST or any other taxes including Custom duty Etc. should be mentioned clearly

- 14. **Delivery Period:**-The ordered quantity of stores must be delivered within 12 to 14 weeks in the case of indigenous equipment and 14 to 16 weeks in the case of imported equipment after opening of L.C. / FDD and Wire Transfer. The extension of delivery period after placing the PO, if required, will be considered only on genuine reasons and proper justifications only.
- 15. **Installation:** - Successful BIDDER shall depute concerned specialist, for supervision of erection & commissioning of the machine to be carried out as and when necessary. The successful BIDDER shall make necessary arrangements during the entire warranty period at their own expenses for stay, transport and other expenses of their specialist during their stay in Jaipur;
- 16. **Warranty:** All the bidders are required to provide minimum **01 Year + 60 Days** warranty on the quoted equipment / instrument

17. **Performance Bank guarantee**
Successful Bidder has to Provide Performance security @ **3%** of the equipment cost, valid for stipulated warranty period plus 60 days which should be in the form of Bank's Guarantee from a commercial bank in format at **Annexure – B**. Warranty will cover repair/replacement of all defective parts, if any, with the same or equivalent make for any part removed. Maintenance will be provided at site. The supplier will provide after sale service during the warranty period from nearest place to installation. The supplier will attend the complaint within 24 working hours and not beyond 5 working days.
18. **EARNEST MONEY:** The attached certificate (Annexure – D) is to be furnished along with your tender in respect of bid security. Failing this your offer will not be considered.
19. **Jurisdiction:**The Courts of Jaipur alone will have the jurisdiction to try any matter, dispute or difference between the parties arising out of this tender/contract. It is specifically agreed that no Court outside and other than Jaipur court shall have jurisdiction in the matter.
20. **Arbitration Clause: - In the eventuality of any dispute, the sole Arbitrator shall be MNIT, Jaipur and his decision shall be binding on all the parties.**
21. **Force Majeure :** Any failure of omission or commission to carry out the provision of this contract by the supplier shall not give rise to any claim by one party, one against the other, if such failure of omission or commission arises from an act of God; which shall include all acts of nature calamities such as fire, flood, earthquake, hurricane, or nay pestilence or from civil strikes, compliance with any statute and / or regulations of the Government, lockouts and strikes, riots, embargoes or from any political or other reason beyond the supplier's control including war (whether declared or not) civil war or stage of insurrection, provided that notice of the occurrence of any event by either party to the other shall be given within two weeks from the date of occurrence of such an event which could be attributed to Force Majeure conditions.
22. **Risk &Cost :** In the event of failure to carry out the contractual obligations, within the stipulated period or extended period and determination of the contract for any reason, violation of warranties etc. the MNIT Jaipur shall have the right to carry out the unfinished obligation at the exclusive - cost and risk of the bidder/firm, after due notice and the difference so accrued shall be recoverable from the bidder/firm.
23. The material found defective upon opening by the supplier representative in presence of Central stores personnel / indenter of MNIT Jaipur or not as per tendered specifications will have to be lifted back by the supplier at their own cost and risk. The material lying in MNIT Jaipur premises would be at supplier's risk and cost.
24. **Custom Duty :** The MNIT, Jaipur is a public funded research Institution registered with Department of Scientific & Industrial Research and concessional Custom Duty @5.15% is applicable for the goods purchased for research purpose vide Government of India Notification No.51/96-Customs dated 23.07.1996

25. **GST:** MNIT, Jaipur is a public funded research Institution registered with Department of Scientific & Industrial Research for concessional GST @5% applicable for the goods purchased for research purpose vide Ministry of Finance (Department of Revenue) Notification No.47/2017-Integrated Tax dated 14.11.2017 & Notification No.45/2017-Central Tax dated 14.11.2017.
26. **Bid Validity:** 90 days (Minimum)
27. **Opening of Bids:** The Bids shall be opened by authorised officials of the institute as per schedule given in Date Sheet. In case, the day of bid opening is declared a holiday by the government, the Bids will be opened on the next working day at the same time. No separate intimation shall be sent to the bidders in this regard. Only opening of bids and accepting the bid will not mean that the firm is technically or financially qualified.
28. **Institute right to vary Quantities at Time of Award or later :** Institute reserves the right at the time of awarding the contract to increase or decrease the quantity of goods and services originally mentioned in our NIT without any change in unit price or other terms and conditions.
29. While submitting the tender, the **GST Registration No., PAN No. & E-mail Address** is to be mentioned by the bidder positively. Failing this, there bid will be treated as non responsive.
30. **After Sales Service Certificate :** After sales service certificate is to be furnished by successful bidder in the prescribed form as **annexure –C**
31. **PREFERENCE TO MAKE IN INDIA:**

This Order is issued pursuant to Rule 153 (iii) of the General Financial Rules 2017

Public Procurement (Preference to Make in India), Order 2017 and Public procurement policy for micro and small enterprises (MSEs) as per guideline shall be applicable. For details visit website: www.msme.gov.in

- a. In reference to the Govt. of India fresh initiative “Atmanirbhar Bharat” only items with minimum 20% domestic value addition / local content can participate in public procurement unless global bid are invited. Also items with more than 50% local content will get purchase preference over other items.

Local content means the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent. Bidder has to mention whether they fall in Class-I local supplier, Class-II or Non – Local supplier.

Class-I local supplier, means a supplier or service provider, whose goods, services or works offered for procurement, has local content equal to or more than 50%.

Class-II local supplier, means a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%.

Non-Local supplier, means a supplier or service provider, whose goods, services or works offered for procurement. Has less than or equal to 20%.

Verification of Local Content:-

The Class-I local supplier / Class-II local supplier, shall be required to indicate percentage of local content and provide self-certification that the item offered meets the local content requirement for Class-I Local supplier / Class-II local supplier, They shall also give details of the locations (s) at which the local value addition is made.

The above mentioned documents at Sl. 1. (i), (ii) are to be submitted along with bid positively.

32. Specification Enclosed as annexure – E

Deputy Registrar
(Store & Purchase)

MANUFACTURERS' AUTHORIZATION FORM

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer.]

Date : [insert date (as day, month and year) of Bid Submission]

Tender No. :[insert number from Invitation For Bids]

To : [insert complete name and address of Purchaser]

WHEREAS

We [insert complete name of Manufacturer],who are official manufacturers of [insert type of goods manufactured], having factories at [insert full address of Manufacturer's factories], do hereby authorize [insert complete name of Bidder]to submit a bid the purpose of which is to provide the following Goods, manufactured by us [insert name and or brief description of the Goods],and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 2.20 of the General Conditions of Contract, with respect to the Goods offered by the above firm.

Signed: [insert signature(s) of authorized representative(s) of the Manufacturer]

Name: [insert complete name(s) of authorized representative(s) of the Manufacturer]

Title: [insert title]

Duly authorized to sign this Authorization on behalf of: [insert complete name of Bidder]

Dated on _____ day of _____, _____ [insert date of signing]

*(Not required in case the bidder itself is the manufacturer)

PERFORMANCE BANK GUARANTEE

(To be executed on Stamp Paper of Rs. 100/- or such higher value as per the Stamp Act of the State in which the Guarantee is issued. Stamp Paper should be in the name of the Bank Issuing the Guarantee.)

BANK GUARANTEE NO. :

DATED :

Dear Sirs,

1. THIS DEED OF GUARANTEE made on this day of..... between **MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY, JAIPUR** (hereinafter called the "MNIT" which expression shall unless excluded by or repugnant to the context includes its successors and assignees) of the one part and the (hereinafter called the "**Bank**" which expression shall unless excluded by or repugnant to the context include its successors and assignees) of the other part.

2. AND WHEREAS as per clause _____ of the purchase order in question the supplier shall furnish a Performance Bank Guarantee of 3% of P.O. Value i.e. Rs. (Rs.....

..... only) valid for the period of two months beyond warranty period as and by way of security for satisfactory working of the AND WHEREAS at the request of the supplier, the Bank executes these presents.

3.0 THIS DEED WITNESSETH AND IT IS HEREBY AGREED AND DECLARED BY AND BETWEEN PARTIES HERETO AS FOLLOWS:

3.1 The Bank hereby guarantees to the MNIT, Jaipur that the equipment / service contracted are capable of performing the work as demanded by the MNIT, Jaipur. In the event of equipment / service failing to perform to the satisfaction of the MNIT, Jaipur, which shall be final and conclusive of the factum of non-performance, the Bank shall indemnify and keep the indemnified to the extent of of P.O. Value i.e. Rs. (Rupees) valid for the period of two months beyond the warranty period against any loss or damage that may be caused to or suffered by the MNIT, Jaipur consequent to non-performance of the contracted equipment / services to be supplied by the supplier.

3.2 In consideration of the aforesaid premise and at the request of the supplier, we the Bank hereby irrevocably and unconditionally guarantee that the supplier shall perform in an orderly manner their contractual obligations in accordance with the terms and conditions set forth in the Purchase order dated and in the event of the supplier's failure to do so, the Bank unconditionally pay to the MNIT, Jaipur on demand, any amount up to the value mentioned in Clause 3.1 above without any reference to the supplier and without questioning the claim.

3.3 The guarantee herein shall remain in full force for a period of two months beyond the warranty period from the date of certification by the MNIT, Jaipur of successful installation and commissioning of the equipment/ service contracted. Date of start of warranty period will be notified by MNIT, Jaipur to the Bank.

3.4 The decision of the MNIT, Jaipur regarding the liability of the Bank under the guarantee and the amount payable there under shall be final and conclusive and binding on us without

question. The Bank shall pay forthwith the amount demanded by the MNIT, Jaipur not withstanding any dispute, if any, between the MNIT, Jaipur and the supplier.

- 3.5 The Bank further agrees that the guarantee herein shall remain in full force during the pendency of aforesaid period mentioned in Clause 3.3 above and also any extension of the guarantee which has been provided by the Bank for this purpose beyond the aforesaid period provided, further, that if any claim accrues or against the Bank by virtue of this guarantee, should be lodged with us within a period of 60 days from the date of expiry of the guarantee period.
- 3.6 This Guarantee shall not be affected by any change in constitution of the supplier, MNIT, Jaipur or us not shall it be affected by any change in constitution or by any amalgamation or absorption or reconstruction thereof otherwise, but will ensure for and be available to and endorsable by the absorbing amalgamated company or concern.
- 3.7 The MNIT, Jaipur has the fullest liberty without affecting the guarantee to postpone at any time or from time any of the powers exercisable by it against the supplier, either to enforce or forbear the clause governing guarantee in the terms and conditions of the said contract and Bank shall not be released from its liabilities under the guarantee by any matter referred to or by reason of time being given to the supplier or any other forbearance, act or omission on the part of the MNIT, Jaipur or any material or things whatsoever which under the law relating to sureties shall but for the provisions hereof have the effect of so releasing the Bank from its liabilities.
- 3.8 We further agree that the MNIT, Jaipur shall have the fullest liberty without affecting in any way our obligations hereunder with or without our consent or knowledge to vary any of the terms and conditions of the said contract or to extend the time of delivery from time to time.
- 3.9 The Bank undertakes not to revoke this guarantee during its currency except with the previous consent in writing of the MNIT, Jaipur.
- 3.10 We further agree that in order to give full effect to the guarantee herein contained MNIT, Jaipur shall be entitled to act as if we were its principal debtors in respect of its claim against the Supplier hereby guaranteed by us as aforesaid and we hereby expressly waive all our rights of suretyship and other rights if any which are in any way inconsistent with the above provision of this Guarantee.

Notwithstanding anything herein before, liability of the Bank under this guarantee is restricted to Rs. (Rupees only) and it will remain in force up to the period specified in Clause 3.3 unless a suit to enforce any claim under the Guarantee is filed against the Bank before the period specified in Clause 3.4. All your rights under this Guarantee shall be forfeited and we shall be relieved and discharged from all liabilities thereunder.

COUNTERSIGNED

Signature :	Signature :
Name :	Name :
Designation :	Designation :
Organization :	Organization :

AFTERSALE SERVICE CERTIFICATE

From:

To

The Registrar,
 Malaviya National Institute of Technology (MNIT),
 Jaipur

Whereas, we M/s (Bidder Name) are established & reputable manufacturers (Make of items) of [items name] having service offices at Delhi, Jaipur and in the state of Rajasthan. Details are as under:

Sr.No. Address of Service Centre Phone No. Number of Engineers

1.

2.

3.

 We do hereby confirm that:

Services including repair/replacement of defective parts will be done by us. Replacement of defective Systems/parts will be done by equivalent or better systems/parts of the same make. We will attend all the complaints/service calls within 24 working hours and not beyond 5 working days. Down time will not exceed beyond 5 working days. In case, down time exceed 5 working days then we will extend the warranty period of that item(s) double of the down time.

(Signature)

Name :

Designation :

(Head or Senior Executive of Firm)

Address :

Phone No :

Fax No:

Mobile No :

Bid Securing Declaration Form

Date: _____

Tender No. _____

To (insert complete name and address of the purchaser)

I/We. The undersigned, declare that:

I/We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with you for a period of one year from the date of notification if I am / We are in a breach of any obligation under the bid conditions, because I/We

- a) have withdrawn / modified /amended, impairs or derogates from the tender, my/ our Bid during the period of bid validity specified in the form of Bid; or
- b) having been notified of the acceptance of our Bid by the purchaser during the period of bid validity (i) fail or reuse to execute the contract, if required, or (ii) fail or refuse to furnish the performance security, in accordance with the Instructions to Bidders.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed: (insert signature of person whose name and capacity are shown)

In the capacity of (insert legal capacity of person signing the bid securing Declaration)

Name: (insert complete name of person signing he Bid Securing Declaration)

Duly authorized to sign the bid for an on behalf of (insert complete name of Bidder)

Date on _____ day of _____ (insert date of signing)

Corporate Seal (where appropriate)

(Note: In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid)

Sr. No.	Name of Equipment	Specifications	Number of Units
1	Crystalliser	<ul style="list-style-type: none"> • Crystallisation vessel with jacket for heating and cooling , vessel filling and drain arrangement • Solution concentration measurement by conductivity meter • Vacuum filtration assembly • Hot air oven for crystal drying <ul style="list-style-type: none"> ○ Temp: up to 150°C ○ Size: 18” x 18” x 18” ○ SS partition: 2 • Sieve shaker with complete set of sieves (8”, sieve size) , Mesh size: 60, 85, 100, 150, 200, 300, 400, 500 • Sieves MOC: Brass Weighing balance with 2 digit accuracy (max capacity 250 gms)	01
2	CSTR in Series (stand alone.)	Reactor (3Nos.) : Material Stainless Steel, Capacity 1 Ltr.(Approx.) Agitator : Material Stainless Steel Impeller and shaft coupled with FHP motor Feed Tank (2Nos.) : Material Stainless Steel, Capacity - 20 Ltrs. (Approx.) Feed Circulation : By Peristaltic Pump (2Nos.) Piping : Stainless Steel and Silicon pipe Control Panel comprising of: Standard make on/off switch, Mains Indicator etc. Operating manual An English instruction manual consisting of experimental procedures, block diagram etc. will be provided along with the Apparatus The whole set-up is well designed and arranged on a rigid structure painted with industrial PU Paint. Two and half feet height SS stand for the equipment	01
3	Thermal Conductivity of Liquid	Liquid chamber -Dia-165 mm SS-304 Cooling chamber for water circulation: SS-304 make Heater: Diameter 150 mm sandwiched between copper plates Testing material – Capillary: 10 MM Diameter and 150 mm long Thermal conductivity range -0.05-0.75 w/m. ⁰ K Heater capacity-1 KW Insulation- Ceramic wool Control panel comprising of: PID Controller: 0-200°C Energy meter: Digital type for power measurement Digital Temperature Indicator 0-200°C with multichannel switch, Temperature sensor- RTD PT-100 type (minimum 6 no) Should Provide MS Cabinet to accommodate slab assembly. The whole Set-up should well designed and arranged on a rigid structure painted with Industrial PU paint. Equipment should provide with painted SS table for setup support.	01
4	Weighing Balance	Readability :0.1 mg or 0.0001 g Operation: Touch screen, keys for important basic functions Weighing capacity [g]: 2.1 Typical response time [<s]: 10 Repeatability [<±mg]: 0.00025 Linearity [<±mg]: 0.0009	01
5	Double Distillation Unit	Double stage glass (quartz) distillation unit, Distillation water capacity should be 4 lit/hr, Distillation unit type should be horizontal, Condenser material should be quartz glass. Electrical requirement should be 230 Volts 50/60 Hz Single phase, pH value should be 6.9-7.0, Conductivity (µs/cm) should be less than	01

		1,Biological activity should be Pyrogen free, Organic matter should be nil, Total solids should be less than 0.01 mg/lit, silica should be less than 0.01 mg/lit Distillate temperature:65 °C, Quartz heater capacity should be 3.5 KW	
6	Capillary Micron Analyzer	Capillary flow (Air/Liquid) with flow meter, 50 ml wetting liquid It should measure pore size range from 50 to 1900 kDA and capable for measurement of flat sheet membrane The maximum pressure to 500 psi with pressure sensor and regulator SS 316 should be material of construction of outside body Flow sensor and measuring system Provision of sufficient solenoid valve for shut and release with dampener pressure gage for feed and pore pressure Manual and digital pressure controlling arrangement Human Machine interface for porometer control porosity measuring software assistance and capable for producing live wet and dry curves data along with PSD and half dry curves data/graphs Export to MS Excel At least three Sample size of test cell: Hollow fiber: between 1 to 2 mm diameter Flat sheet: 20 to 30 mm and 40 to 50 mm diameter Three Perforated screen sheet for sample support sample size standard 6 mm on 25 mm diameter Manual and Automatic (hydro pneumatic) clamping arrangement for sample holder High pressure Test cell of SS 316 with high pressure testing hose SS Tube line Gas cylinder with regulator followed by motorized valve Emergency push button 230 V 50 HZ Based on ASTM F 316-03 Manual and Brochure Installation and training	01
7	Digital Compression Testing Machine	Capacity 200 Tonnes (2000 KN) Electrically Cum Manually Operated Suitable to test concrete cubes of 15 X 16 x 15 cm. Cylinders of 15 X 30 cm 4 pillar type load frame Specimens duly hardened and surface ground for excellent smooth finish Suitable to operate on 440 volts, three phase Having adjustable rate of Loading and auto cut-off mechanism which will stop the machine a little before reaching its maximum load all the electrical fittings including motor used will be of standard mak Fitted with digital load indicator of capacity 2000 KN with least count 1.5 KN	01
8	Digital Rockwell Hardness Testing Machine	Dwell Time: 1-60s Adjustable Max Height Specimen: 230mm Power Supply: AC220V/50Hz Total Force: 147.1n (15 kgf), 294.2n (30 kgf), 441.3n (45 kgf) Throat: 133mm	01
9	Automatic Proximate Analyzer	Furnace temperature: 0 Degree C~200 Degree C (Low temperature furnace), 0 Deg C ~ 1000 Deg C (high temperature furnace), Power: Greater Than Equal to 2 KW, Dimension: 400mm x 510mm x 640 mm, Weight: 65Kg, Temperature controlling precision: +- 5 Deg C, Weight of sample: 0.5g ~ 0.7g, Sample number: 11 samples per time, Testing Time:20 minutes per sample, Airflow Rate: 600ml/min	01

		(nitrogen), 400ml/min (oxygen), Sample weight: 45mg~100mg, Power Supply: 100 ~260V, Frequency: 50/60HZ	
10	Muffle Furnace (with PID controller)	<p>Inside Chamber Size 6" x 6" x 6", 3.6L approx with swing aside door at the front</p> <p>Furnace construction:</p> <ul style="list-style-type: none"> (i) Double shell steel case with cooling fan to keep outside case cool (ii) High purity alumina fiber insulation for max. energy saving <p>Heating element: The chamber section should be heated by six to eight Super Kanthal Molybdenum disilicide heating elements (Super 1800 grade MoSi₂) suspended in a chamber made of high temperature refractory fiber lined with a combination of ceramic fibre blankets.</p> <p>Standard Working: Temperature : 1600° C (continuous) Maximum Working Temperature: 1700° C (< 3 hours) Temperature Control: The temperature controller should be a PID automatic control power control and programmable with necessary safety features. Heating Rate: The furnace should be of fast heating type with the maximum attainable temperature should reach as a ramp function in less than one hour. Temperature Accuracy : +/- 1.0 °C Thermocouple Pt. Pt. Rh. Thyristor controller should be provided along with the furnace to measure the temperature with Re crystallized alumina sheath & connecting holder complete set. Cooling Fan/ Air Circulation: Attached with Furnace, Provided inside the control unit to protect Costly component Max. Power Up to 8 KW Certificate CE certified</p>	01
11	Tubular Furnace	<p>Max. Temp: 1150°C Max. Working Temp: 500°C – 1000°C Temp. Accuracy: ±1°C Heating Elements: Kanthal –A1 wire, Coil type with end connection, easily replaceable. Inner Chamber: Ceramic Refractory with heating elements placed on the sides. Insulation: Ceramic Fibre Construction: Tripple walled with air insulation on the outer side For Minimal Skin Temp. Body: Made of mild steel duly Powder Coated Tube Material: Aluminaor Quartz Tube Size: Inner Dia. = 65mm / Hot Zone Length=225mm / Overall length = 1000 mm Gas Purging: Ends of the tube have Aluminium couplers with Cooling attachment for purging of gases. Power Control: SSR Unit Temp. Control: Microprocessor based Programmable (1prog x 16 segments) Temp. Controller, with ramp and soak segments Dual display of Set & Actual Temp. with soft touch keys. With Thermocouple break protections & Cold junction compensation. CE mark to Meet EMC regulations. Sensor: Cr /Al Safety: Over current and Short Circuit Protection. Thermocouple break alarm. High Temp. alarm. Power Supply: 220 volts, single phase AC supply. Exhaust gases cooling tower Rotameter with needle valve Flow rate up to 500 SCCM</p>	01

		GAS= Nitrogen GAS= Carbon Dioxide																					
12	Bomb Calorimeter ((Digital) Type-Automatic Microprocessor	Power Supply: 220 V GCV Range: Up to 10,000 Kcal Microprocessor Based Beckmann Thermometer (High Precision) Automatic Measurement & Calculation of Calorific value/Water Equivalent Least count 0.0010C Big Jumbo LCD 20x4 display (Blue Colour) In built Thermal Printer PC Software for Data Record 16 soft touch keypad Weight of mass feed able Water Equivalent value feed able Final Test report printout with Date & Time Alarm on Firing & Final reading Fuse wire Open detection & LED indication “No Paper” or “Printer’s Door Open” Detection Type of Test Select able Real Time Clock Computer Interface Push-n-Fit type Gas filling System for User	01																				
13	Chiller	Media to be cooled is water, Delta T (output temperature- input temperature) = 30 °C, Target temperature should be less or equal to 5 °C, Ambient Temperature Range is + 25 °C ~ +45°C Refrigeration load should not be less than 3 Tonnage capacity with compressor of reciprocating type of 415 V, 3 Phase, 50 Hz Cooling Output rate is 9000 Kcal / hr @ T ambient =+ 45° C, Condenser should be air Cooled Copper Tube and Aluminium fins type, Condenser fan motor should be external Rotor Type – 415 V, 3 Phase 50 Hz, 600 mm Sweep Rated Voltage-415V, 3 ~/ PE, Mains Frequency- 50 Hz, Rated Current-12 Amps – Max per phase, Connected Load-10 kW, Primary Voltage- 415V, 3 ~/PE, Control Voltage-230V, 1 ~/PE, Power Supply Voltage- 415V/3PH/50Hz, Control supply- 230 V/1ph Cooling pump flow rate should be 2 to 10 lpm, Insulated reservoir tank should be 100 litres, Internal circulation pump should be deliver 27 to 30 LPM @ 2 to 2.5 bar pressure Digital Display Temp Controller, Chilled Water Failure trip, Compressor over load trip, Anti-freezing Protection with safety locks, Noise Level should be less than 80db at 1.5 m distance, Expansion device should be Thermostatic Expansion Valve	01																				
14	Pan Coater	<table border="1"> <tr> <td>Diameter of holding</td> <td>12” inch</td> </tr> <tr> <td>Baffles</td> <td>4-6</td> </tr> <tr> <td>Atomized spray gun</td> <td>1</td> </tr> <tr> <td>Motor</td> <td>5-10 Hp</td> </tr> <tr> <td>RPM of holding tank</td> <td>20-90</td> </tr> <tr> <td>Diameter of holding</td> <td>12 inch</td> </tr> <tr> <td>Automatic pneumatic controller</td> <td></td> </tr> <tr> <td>Variable Angle of Holding Tank</td> <td>20-80⁰</td> </tr> <tr> <td>Hot air blower</td> <td></td> </tr> <tr> <td>Electric Heater</td> <td>1.2 Kw</td> </tr> </table>	Diameter of holding	12” inch	Baffles	4-6	Atomized spray gun	1	Motor	5-10 Hp	RPM of holding tank	20-90	Diameter of holding	12 inch	Automatic pneumatic controller		Variable Angle of Holding Tank	20-80 ⁰	Hot air blower		Electric Heater	1.2 Kw	01
Diameter of holding	12” inch																						
Baffles	4-6																						
Atomized spray gun	1																						
Motor	5-10 Hp																						
RPM of holding tank	20-90																						
Diameter of holding	12 inch																						
Automatic pneumatic controller																							
Variable Angle of Holding Tank	20-80 ⁰																						
Hot air blower																							
Electric Heater	1.2 Kw																						

15	DO Meter	Dissolved Oxygen Range	0.00 to 90.00 ppm (mg/L); 0.0 to 600.0 % saturation	01
		Dissolved Oxygen Resolution	0.01 ppm (mg/L); 0.1% saturation	
		Dissolved Oxygen Accuracy	±1.5% of reading ±1 digit	
		Dissolved Oxygen Calibration	automatic using single or two-point calibration; user calibration single point	
		Dissolved Oxygen Temperature Compensation	0.0 to 50.0 °C; 32.0 to 122.0 °F; 237.1 to 323.1 K	
		Salinity Compensation	0.0 to 70.0 % / 0.0 to 45.0 g/L / 0.0 to 42.0 psu	
		DO Probe	Polarographic DO Probe with built-in temperature sensor (included)	
		Connectivity	Opto-isolated USB	
		GLP	Last calibration data, calibration info	
		Autoend	DO only	
		BOD/OUR/SOUR	Yes (Inside/Outside limits)	
		Display	color graphic LCD with on- screen help, graphing, and custom color configuration	
		Power Supply	12 VDC adapter (included)	
		Environment	0 to 50°C (32 to 122°F; 273 to 323 K), RH max 95% non-condensing	
		Dimensions	160 x 231 x 94 mm (6.3 x 9.1 x 3.7 “)	
		Weight	1.2 Kg (2.6 lbs)	
Other Information	DO probe, electrode holder, electrolyte solution (30 mL), DO membrane caps (2), 12 VDC adapter, instrument quality certificate and instruction manual			
		pH Range	0	
		pH Resolution	0.1 pH / 0.01 pH / 0.001 pH	
		pH Accuracy	±0.1 pH / ±0.01 pH / ±0.002 pH ± 1LSD	
		pH Calibration	Up to five-point calibration, eight standard buffers available (pH 1.68, 3.00, 4.01, 6.86, 7.01,9.18, 10.01, 12.45), and five custom	

16	pH-EC-TDS-ISE meter with electrodes for PH and EC-TDS		buffers	01
		pH Temperature Compensation	automatic or manual from -20.0 to 120.0 °C	
		mV Range	±2000.0 mV	
		mV Resolution	0.1 mV	
		mV Accuracy	±0.2 mV ± 1LSD	
		mV Relative Offset	±2000.0 mV	
		ISE Range	e.g. 10 ⁻⁷ to 10M/ 0.005 to 105 ppm/ 5·10 ⁻⁷ to 5·10 ⁷ conc	
		ISE Resolution	1 conc./ 0.1 conc. / 0.01 conc. / 0.001 conc	
		ISE Accuracy	±0.5% (monovalent ions); ±1% (divalent ions)	
		ISE Calibration	Up to five-point calibration, seven fixed standard solutions available for each measurement unit, and five custom solutions	
		EC Range	0.000 to 9.999 µS/cm, 10.00 to 99.99 µS/cm, 100.0 to 999.9 µS/cm, 1.000 to 9.999 mS/cm, 10.00 to 99.99 mS/cm, 100.0 to 1000.0 mS/cm actual EC*	
		EC Resolution	0.001 µS/cm, 0.01 µS/cm, 0.1 µS/cm, 1 µS/cm, 0.001 mS/cm, 0.01 mS/cm, 0.1 mS/cm	
		EC Accuracy	±1% of reading (±0.01 µS/cm)	
		EC Calibration	automatic standard recognition (0.000 µS/cm, 84.00 µS/cm, 1.413 mS/cm, 5.000 mS/cm, 12.88 mS/cm, 80.00 mS/cm, 111.8 mS/cm) or user standard; single point or multi-point calibration	
		TDS Range	0.000 to 9.999 ppm, 10.00 to 99.99 ppm, 100.0 to 999.9 ppm, 1.000 to 9.999 ppt, 10.00 to 99.99 ppt, 100.0 to 400.0 ppt actual TDS* (with 1.00 factor)	
		TDS Resolution	0.001 ppm, 0.01 ppm, 0.1 ppm, 1 ppm, 0.001 ppt, 0.01 ppt, 0.1 ppt	
		TDS Accuracy	±1% of reading (±0.01 ppm)	
		EC/TDS Temperature Compensation	Disabled / Linear / Non linear (natural water)	
		Temperature Correction Coefficient	0.00 to 10.00 %/°C	
		Reference Temperature	5.0 °C to 30.0 °C	
Cell Constant	0.0500 to 200.00			
Cell Type	4 cells			
Temperature Range	-20.0 to 120.0 °C**; -4.0 to			

			248.0 °F**; 253.15 to 393.15 K**	
		Temperature Resolution	0.1 °C, 0.1 °F, 0.1 K	
		Temperature Accuracy	±0.2 °C; ±0.4 °F; ±0.2 K (without probe)	
		Input Channels	2 (pH/mV/ISE; Conductivity/Resistivity/TDS/ Salinity)	
		pH Electrode	glass body pH electrode with BNC connector and 1 m (3.3') cable (included)	
		EC/TDS Probe	four-ring EC/TDS probe with and 1 m (3.3') cable (included)	
		Temperature Probe	stainless steel temperature probe with 1 m (3.3') cable (included)	
		Display	Color Graphic LCD 240 x 320 pixels, 8 keys capacitive touch keyboard	
		Power Supply	12 VDC adapter (included)	
		Environment	0 to 50°C (32 to 122°F; 273 to 323 K), RH max 95% non-condensing	
		Dimensions	160 x 231 x 94 mm (6.3 x 9.1 x 3.7")	
		Weight	1.2 Kg (2.6 lbs)	
		Other Information	pH electrode, temperature probe, conductivity probe, electrode holder, pH 4.01 buffer solution sachet, pH 7.01 buffer solution sachet, electrode cleaning solution sachet (2), 3.5M KCl electrolyte solution (30 mL), 12 VDC power adapter and instructions.	
17	COD meter cum multi parameter with a provision for pH measurement	pH Range	Photometer: 6.5 to 8.5 pH pH electrode: -2.00 to 16.00 pH	01
		pH Resolution	Photometer: 0.1 pH pH electrode: 0.01 pH	
		pH Accuracy	Photometer: ±0.1 pH pH electrode: ±0.01 pH	
		pH Calibration	Automatic one or two point calibration with one set of standard buffers available (4.01, 6.86, 7.01, 9.18, 10.01)	
		pH Temperature Compensation	Automatic (-5.0 to 100.0 °C; 23.0 to 212.0 °F); limits reduced based on the pH electrode used	
		pH CAL Check (electrode diagnostics)	clean electrode and check buffer/check probe	

		displayed during calibration
pH Method		Photometer: phenol red
pH-mV Range		±1000 mV
pH-mV Resolution		0.1 mV
pH-mV Accuracy		±0.2 mV
Dissolved Oxygen Range		0.0 to 10.0 mg/L (as O ₂)
Dissolved Oxygen Accuracy		±0.4 mg/L ±3% of reading
Chemical Oxygen Demand Range		Low Range: 0 to 150 mg/L Medium Range: 0 to 1500 mg/L High Range: 0 to 15000 mg/L
Chemical Oxygen Demand Resolution		1 mg/L
Chemical Oxygen Demand Accuracy		Low Range: ±5 mg/L ±4% of reading Medium Range: ±15 mg/L ±4% of reading High Range: ±150 mg/L ±2% of reading
Input Channels		1 pH electrode input and 5 photometer wavelengths
pH Electrode		digital pH electrode (not included)
Photometer/Colorimeter Light Source		5 LEDs with 420 nm, 466 nm, 525 nm, 575 nm, and 610 nm narrow band interference filters
Photometer/Colorimeter Light Detector		silicon photodetector
Cuvette Type		round, 24.6 mm
Number of Methods		128 max.
GLP		calibration data for connected pH electrode
Display		128 x 64 pixel LCD with backlight
Connectivity		USB-A host for flash drive; micro-USB-B for power and computer connectivity
Power Supply		5 VDC USB 2.0 power adapter with USB-A to micro-USB-B cable (included)
Battery Type/Life		3.7 VDC Li-polymer rechargeable battery / >500 photometric measurements or 50 hours of continuous pH measurement
Environment		0 to 50.0 °C (32 to 122.0 °F); 0 to 95% RH, non-condensing
Other Information		sample cuvettes and caps (4 ea.), cloth for wiping cuvettes, USB to micro USB cable connector, power adapter and instruction manual.

18	COD Digester	Power Supply	115 Vac; 60 Hz; 250 W	01
		Environment	5 to 50°C (41 to 122°F)	
		Dimensions	190 x 300 x 95 mm (7.5 x 11.8 x 3.7")	
		Weight	approximately 4.8 kg (10.6 lb)	
		Other Information	power cable and instruction manual.	
		Reaction Temperature	105°C or 150°C (221°F or 302°F)	
		Temperature Stability	±0.5°C	
		Temperature Range	-10°C to 160°C	
		Temperature Accuracy	±2°C (@ 25°C)	
		Capacity	25 vials (dia 16 x 100 mm), 1 receptacle for a stainless steel reference thermometer	
		Warm up time	10 to 15 minutes, depending on selected temperature	
		Operating Mode	timed (0 to 180 minutes) or infinity mode	
		Heater Block Material	Aluminum	
		Package	vials	
Quantity	25 each			
Method	dichromate EPA			
19	Peristaltic Pump	No. of Channels	One	01
		Flow Rate	0.1 to 1499.9 ml/min	
		Set Volume	0 to 999.9 ml	
		Interval Time	0 to 99.9 sec.	
		Tubing	3 to 10 mm ID, 1.5 to 2 mm Wall thickness	
		No. of Rollers	2	
		Pressure	UP to 2 Bar	
		Accuracy	± 1 %	
		Input Supply	230V +/- 10%, 50Hz, Single phase AC, 60 Watt	
		Display	Single line 8 Character Liquid crystal Display	
		Motor	DC Stepper Motor (Cont. Duty)	
		Drive	Microcontroller Based control Circuit and PWM Based DC Stepper Motor Drive	
Remote ON	Potential free Digital Input			
20	UV- Vis Spectrophotometer	Photometric Accuracy Instrument	1A: ±0.006A 2A: ±0.010A Measured at 440 nm using calibrated neutra	01
		Connections	USB or RS-232	
		Wavelength Range	190 to 1100nm	
		Detector Type	Dual Silicon Photodiodes	
		Display	None	
		Baseline Flatness	±0.0010A, 200-800nm, 1.0nm SBW, smoothing	
Data Interval	10, 5, 2, 1.0, 0.5, 0.2, 0.1nm			

Dimensions (L x W x H)	62.2 x 48.6 x 27.9 cm (24 x 19 x 11 in)
Electrical Requirements	100-240V 50-60Hz, selected automatically, 150W maximum
Lamp	Xenon Flash Lamp, 3 year warranty (7 years typical lifetime)
Pharmacopoeia Compliance Testing	Photometric Accuracy (60mg/L K ₂ Cr ₂ O ₇): ±0.010A Stray Light: ≤1%T at 198 nm: KCl; ≤0.05%AT at 220 nm: NaI, KI Wavelength Accuracy: ±.5 nm 541.9, 546.1nm Hg emission lines, ±0.8 nm full range Wavelength Repeatability: ≤0.05 nm, repetitive scanning of 546.1 nm Hg emission line
Photometric Range	>3.5A
Scan Ordinate Modes	Absorbance, % Transmittance, % Reflectance, Kubelka-Munk, log (1/R). log (Abs) Abs*, Intensity
Spectral Bandwidth	1.0 nm
Wavelength Repeatability	≤0.05 nm (546.1 nm mercury line, SD of 10 measurements)
Weight (English)	32 lb
Operating System	Microsoft Windows 7, Windows 8
Type	Evolution 201 UV-Vis Spectrophotometer, Computer Control, includes Euro/US/UK power cords
Wavelength Accuracy	±0.5 nm (541.9, 546.1 nm mercury lines); ±0.8 nm (full range 190 to 1100 n)
Accuracy (Photometric)	0.5: ±0.004; 1: ±0.006; 2: ±0.010; Measured at 440nm using neutral density filters traceable to NIST
Certifications/Compliance	ISO 9001:2008
Beam Geometry	Double-beam
Description	Cutting-edge instrumentation, intuitive and powerful software, and a wide range of accessories consistently deliver high quality results and improved productivity.
Drift	<0.0005A/hr, 500 nm, 1.0 nm SBW, 1 hr

			warm-up	
		Item Description	Evolution 201 UV-Vis Spectrophotometer, Computer Control, includes Euro/US/UK power cords	
		Noise	0A: <0.00015A; 1A:<0.00025A; 2A: <0.00080A; 260 nm, 1.0 nm SBW, RMS	
		Pathlength (Metric)	Up to 100 mm cuvettes	
		Photometric Display	-0.3 to 4.0A	
		Photometric Repeatability	±0.0002A	
		Scan Speed	<1-6000nm/min, variable	
		Wattage	150W max.	
		Wavelength Scan Speed	<1 to 6000; variable	
		Description	Cutting-edge instrumentation, intuitive and powerful software, and a wide range of accessories consistently deliver high quality results and improved productivity.	
		Drift	<0.0005A/hr, 500 nm, 1.0 nm SBW, 1 hr warm-up	
		Item Description	Evolution 201 UV-Vis Spectrophotometer, Computer Control, includes Euro/US/UK power cords	
		Noise	0A: <0.00015A; 1A:<0.00025A; 2A: <0.00080A; 260 nm, 1.0 nm SBW, RMS	
		Pathlength (Metric)	Up to 100 mm cuvettes	
		Photometric Display	-0.3 to 4.0A	
21	Drop Shape Analyzer	<p>Two axes movement provision for adjusting focus Droplet to grip droplet LED Lamp to irradiate sample droplet camera and digital Graphic sensor with provision of cable for USB Vertical plane movement to 300 mm with movement in order to position for proper concentration on sample droplet Placing of sample liquid droplet on Table (XY) using syringe Dosing system resolution 0.1 µL Drop: Range: 0 to 180° (b)Accuracy: 1° (c) Resolution: 0.05° Operating Temperature 10 to 40° C Software for Image capturing Installation and Training</p>		01

Deputy Registrar
(Store & Purchase)