

**SHRI GURU GOBIND SINGHJI**  
**INSTITUTE OF ENGINEERING & TECHNOLOGY,**  
**VISHNUPURI, NANDED - 431 606**



**TENDER DOCUMENTS**

**For**

***Chemical Engineering Lab Equipments***

**Tender Notice No.**

SGGSIE&T/Stores-774/Chemical Engg/2011-12 Dates 16/01/2012

**File No. 774/Chemical Engg/2011-12**

**Price of Tender Documents Rs. 1,000/-**

**SHRI GURU GOBIND SINGHJI  
INSTITUTE OF ENGINEERING & TECHNOLOGY, VISHNUPURI, NANDED.  
431 606**

No. SGGSI&T/Stores-774/Chemical Engg/2011-12

Date 16/01/2012

**NOTICE FOR INVITATION OF TENDER**

1. The institute invites sealed tenders/quotations for **Chemical Engineering Laboratory Equipments for Chemical Engineering department** of the institute from **Manufacturers, Authorised dealers & suppliers** who have registered under Shop Act & Central Sales Tax Act /VAT; details as per the Tender Notice published in News paper. (**Press note** enclosed here with).
2. The Terms and conditions, which are Govern the contract made on behalf of the institute, are also enclosed.
3. The Tenderers is requested to read the enclosed instructions; Terms and conditions carefully before quoting the rates in quotations / Tender Schedule and comply with the same.
4. The Tenderer should satisfy & comply all the Terms & conditions and instructions, which are mentioned in the Tender Notice and in this Tender document.
5. The institute reserves the right to delete any item or items or to increase or to decrease the quantity of any item or items from the Tender Schedule.
6. **The right to accept or reject any / or all the tenders/quotations from any or all parties without assigning any reason is reserved.**

Sd/-  
**DIRECTOR**  
**Shri Guru Gobind Singhji**  
**Institute of Engg. & Tech.**  
**Vishnupuri, Nanded.**

**Press note**



SHRI GURU GOBIND SINGHJI  
INSTITUTE OF ENGINEERING AND TECHNOLOGY,  
VISHNUPURI, NANDED 431 606

---

**No. SGGSI&T/ Stores-774/Chemical Engg/2011-12**

**Date 16/01/2012**

**TENDER NOTICE**

Sealed Tenders / quotations are invited for Chemical Engineering Laboratory equipments from manufacturers, authorised dealers and suppliers those who have registered under Shop Act, Sales Tax / VAT. The Tender documents containing all detailed **specification of the equipments** & Tender's **Terms and conditions** will be available on our web site <http://www.sggs.ac.in>. Vendors can down load and submit with D.D. of **tender** document's **fees Rs. 1,000/-**. In such a case D.D. issued on or before the last date of issuing the tender documents i.e. **31/01/2012**. Also tenders documents will be issued from **16/01/2012 to 31/01/2012** between 10.30 am to 01.30 pm on working days on cash payment. EMD is @3% of the quoted total cost for each item. All tenders should be submitted on or before **07/02/2012 at 1:00 pm & tenders will be opened on 07/02/2012 at 3:00 pm**.

The right to accept or reject any or all the quotations / tenders from any or all parties without assigning any reason is reserved.

Sd/-  
**Director**

[The tender notice is published in **Daily SAKAL, Nanded supplement** on date **16/01/2012** as well as on our web site [www.sggs.ac.in](http://www.sggs.ac.in)]

**SHRI GURU GOBIND SINGHJI**  
**INSTITUTE OF ENGINEERING & TECHNOLOGY,**  
**VISHNUPURI, NANDED. 431 606**

---

---

No. SGGsIE&T/Stores-774/Chemical Engg/2011-12

Date 16/01/2012

**INSTRUCTIONS TO TENDERERS**

1. The Tenderer should submit quotations / Tenders in sealed Envelop super scribing the Tender Notice No. SGGsIE&T/774/Chemical Engg/2011-12 Date 16/01/2012
2. We are giving here with Tender Schedule with **specifications of the Chemical Engineering Laboratory Equipments required for the Chemical Engg department. Your quoted equipment/material should be strictly as per our specifications**, and should be given with detailed specifications in writing along with catalogue on your letter head / on our Tender Schedule.
3. **Tenders / Quotations received late will not be considered and postal delay will not be entertained.**
4. The quotations in sealed covers should reach this office at **Vishnupuri, Nanded** on or before date **07/02/2012 at 1.00 PM.**
5. Sealed cover should be super scribed as **“QUOTATION FOR EQUIPMENTS FOR CHEMICAL ENGG DEPT”**
6. The Technical Bids will be opened on date **07.02.2012** at 3.00 P.M. and after that commercial bid.
7. All the terms and conditions are enclosed herewith.
8. The Tenders / quotations should be strictly **as per the G.R. of Maharashtra Govt.** (G. R. No. *Bhankhasa* – 1094 / (2679) *Udyog* -6 dates 30.03.1994 for two Bid systems, and Tenderer should submit detailed statement for their own specifications. If not as per our specifications giving the details (facts) as to why not as per our specifications, and submit the statement in your Technical Bid i.e., envelop No. 1 (see format as per clause No. 9 (iv)).
9. Procedure for submission of quotations: -

Tenderer should note that they will have to submit two separate sealed envelopes as below:

**a) ENVELOPE No. 1 [TECHNICAL TENDER ENVELOPE / TECHNICAL BID]:** The first Envelope should be clearly marked as **“ENVELOPE No. 1” for Equipments for Chemical Engg Dept.”** shall be consisting of the following documents.

**i) E.M.D.:- Demand Draft/Banker cheque for amount @3% of quoted total cost in the name of The Director, S.G.G.S. Institute of Engineering & Technology, Vishnupuri, Nanded. Payable at the State Bank of India, Nanded Branch or at any Nationalised Bank as “Earnest Money Deposit”, E.M.D. amount will be refundable after 90 days without interest from the date of opening of the quotations.**

The firms those have registered with CSPO, SSI Units, NSIC, and DGS&D will be exempted from payment of E.M.D., **but they should submit the written evidence accordingly with that effect.**

**ii) The attested copies of the Registrations under Shop Act and Sales Tax Act / VAT; Registration for SSI Units, CSPO Registration, NSIC registration, DGS&D Registration should be attached along with Envelope No. 1.**

iii) Attested copies of Registration with CSPO, and Govt. & Semi Govt. Institutions, SSI Units, with the Directorate of Industries, NSIC and DGS&D authorities as applicable should be enclosed.

iv) The statement as per above clause No.8 in following format.

Specifications as per Tender Notice	Specifications quoted by Tenderer	Specifications given by Tenderer are as per Tender Notice or not	Specifications given by Tenderer are not as per Tender Notice <b>specify Reasons clearly</b>
1	2	3	4

v) **Sales tax / VAT clearance certificate [attested copy] should have to attach with the technical bid. [Envelope No.1].**

vi) Authorised dealer certificate from original manufacturer is required.

viii) income tax returns "SARAL" certificate.

**b) ENVELOPE No. 2 [commercial bid / envelope for Rates]: -**

The second Envelope clearly marked as "ENVELOPE No. 2" for Tender/Quotation for "Equipments for Chemical Engg Dept" shall contain only the "Price Bid/Quotation for Equipments for Chemical Engg. Dept"

Envelope No.2 Commercial Bid should be contain only the Tender Form / Tender schedule / quotation for the required material.

- 10 **The Tenderer should note that in case Envelope No. 1 does not contain E.M.D., registration of Shop under Shop Act and Sales Tax / VAT. Registration Certificate / Sales Tax clearance / exemption Certificate or SSI Unit Registration, the Envelope No.2 will not be opened and the offered quotation will be liable for rejection.**
- 11 The tenderer should **quote the rates on quotation/our enclosed Tender schedule duly signed with date and seal of firm.** He should not quote the rates anywhere directly or indirectly in Envelope No. 1.
- 12 If there is any correction in quotation, **every correction/s in the rates should be initialled by the Tenderer.**
- 13 Tenderer must follow all instructions, terms and conditions. If he fails to follow any of the conditions, and instructions, his / her Tender / Quotation are to be liable for rejection.
- 14 Tenderer, whose rates are found to be lowest & as per our specifications, will be informed about the same, He will have to deposit 5% amount of total quantity as Security Deposit (S.D.); after receipt of S.D. orders will be placed.
- 15 **If the Tenderer is manufacturer or authorised dealer and the item is the PROPRIETARY item then they should furnish the "PROPRIETARY ITEM CERTIFICATE" along with the quotation /Tender.**

Sd/-  
DIRECTOR

**SHRI GURU GOBIND SHINGHJI  
INSTITUTE OF ENGINEERING & TECHNOLOGY,  
VISHNUPURI, NANDED. 431 606**

No. SGGSI&T/Stores-774/Chemical Engg./2011-12

Date 16.01.2012

**TERMS AND CONDITIONS**

1. The rates should be quoted as F.O.R. Destination at our **Vishnupuri, Nanded.**
2. The Excise Duty, Central Sales Tax / Maharashtra Sales Tax/VAT, if any must be inclusive, or must be clearly stated in the percentage and calculated in amount.
3. The Freight, Packing, Forwarding and Insurance Charges must be inclusive.
  - a) If it is not possible to quote the rates F.O.R. at VISHNUPURI site, then Freight, Packing, Forwarding and Insurance should be quoted in percentage clearly calculated in amount.
  - b) Transit insurance has to be done by the contractor/supplier at supplier's cost. If extra quoted will be payable by us with total bill amount by verifying the insurance documents.
4. The validity period for the rates offered should be clearly mentioned and it should be minimum 180 days from the date of opening of a items quoted should be confirms our specification, in addition, please furnish your detailed specifications against each item, the relevant catalogue/pamphlet should be necessary to accompany with the quotations; if any deviations in the specifications then please submit the statement duly signed as mentioned in "Instructions to Tenderer", clause No.8 and clause No. 9 (iv).
5. The delivery period should be clearly stated.
  - a) Liquidated Damages: Firm should have to quote the delivery period clearly from the date of receipt of order or confirmed order.
  - b) If supplier fails to supply the ordered material within the scheduled delivery period, for late delivery of goods we will entitled to recover the liquidated damages as a sum equal to ½ percent of the price of stores delivered late per week.
6. Extension of Delivery period: The delivery period as mentioned in purchase order may be extended.
  - i) If the completion of supply of goods/components/equipments/etc is Delayed due to reasons such as act of God, act of Public enemy, Wars, Act of Government, Fires, Floods, Epidemics, Quarantine, Restrictions, Strikes and Freight embargoes the delivery period may be extended.
  - ii) Supplier will have to give notice within 10 days to this institute in writing of his claim for an extension of the delivery period. After receipt of such notice and verification; if necessary the delivery period will be extended but without prejudice to other terms and conditions of the purchase order and Tender notice/Tender document's conditions.
  - iii) If supplier has delivered material even after expiry of extended delivery period then we will be entitled to recover the liquidated damages.
7. The instructions manual for each equipment/components/machinery/material should be supplied separately with each item/s supplied.
8. Supplier's Technician/Engineer on free of cost must carry out the demonstration and installation at our site.
9. The institute reserves the right to accept any/all quotations, reject any/all quotations and to order any of the item/s in any quantity without assigning any reason.
  - a) The institute reserves the right with itself to delete any item/s from Tender Enquiry.

10. The items will be checked at the institute and acceptance is subject to the approval of the institute.
11. If the supply of goods/equipments/material or any part there of is rejected by the institute, the supplier will have to bear all expenses incurred in the matter including all charges for return and replacement of the items. The rejected material/ equipments/parts of equipments should be got it back by supplier on their own cost.

**12. PAYMENT CONDITION:-**

**\* For equipments and instruments/components etc those items are required to install and demonstrate at this institute:**

**I.** 90% payment on demonstration of satisfactory working and installation of instruments/equipments/goods/components and balance 10% after 30 days for balance 10% firm has to submit separate bill/invoice.

**\* For the items those need not to install and demonstrate at this institute:**

**II.** 100% payment will be released after receipt of material in good condition and approved by this institute.

13. Inspection of Goods: - The ordered equipments/goods/instruments will be inspected if required by our representative at your workshop/show room before despatch of goods.
  - a) The supplier should inform the date of inspection in advance by 10 days.
  - b) The supplier will have to provide free lodging and boarding facilities to our representative who would carryout inspection.
14. The equipments should be guaranteed for minimum one year from the date of installation of the goods.
15. The repairs within the guarantee period must be carried out at own cost of supplier.
16. If any damages in transit, that should be repaired / or equipments should be replaced by the supplier of their own cost.
17. The gate pass of excise duty must be supplied in duplicate.
18. Demurrage: - If any demurrage will be charged due to any delay any other reasons from supplier; then the same should be beard by supplier or it can be deducted from their final payment.
19. Mode of Despatches: - Equipments/Stores/Components/Machineries should be despatched by Railway or Road Transport as per availability of facilities. The road transporters office / Godown must be available at Nanded City. A copy of the invoice / bill and packing list should invariably be kept inside each of the packages.
20. The package should be marked as follows
  - I) Consignee: - Director, S.G.G.S. Institute of Engg. and Tech., VISHNUPURI, NANDED – 431 606 (MAHARASHTRA)
  - II) Purchase Order No. \_\_\_\_\_ Date \_\_\_\_\_ Department. \_\_\_\_\_ R.R. /L.R. No. \_\_\_\_\_  
Number of cases/packages \_\_\_\_\_ S.G.G.S. Institute of Engineering and Technology, VISHNUPURI, NANDED (M.S.) Destination: Nanded.
21. Cancellation of purchase orders: - institute reserves the right to cancel the purchase orders on following grounds.
  - a) If supplier fails to supply the goods/equipments/machinery/components within the delivery period without confirmation of extension of the period from the institute or without obtaining the permission for extension of delivery period.
  - b) If the supplier fails to supply the goods within extended delivery period.

- c) If supplier fails to follow the terms & conditions and instructions as mentioned in the tender documents or conditions mentioned in purchase orders.
  - d) If supplier found defaulter.
22. The institute has reserves the right to place an order for any party who is ready to supply on lowest rate for the items cancelled the order as above clause 21, and institute has reserves the right to place an order on 2<sup>nd</sup> lowest rate if any supplier not ready to supply on 1<sup>st</sup> lowest rate for items which order cancelled (which was placed on 1<sup>st</sup> lowest but party fails to supply).
- 23. Security Deposit:** - Successful tenderer will be informed that their quotation/Tender rates are acceptable to us, such Tenderer should deposit the **5% value** of the equipments/order value; in form of Demand Draft/Bank Guarantee in favour of Director, S.G.G.S.I.E.& T., Nanded, payable at State Bank of India, main branch, Vazirabad, Nanded or any Nationalised Bank at Nanded. The Security Deposit will be refundable after completion of 1 year from the date of complete payment of ordered items.
- 24. Exemption from security Deposit:** - The following tenderer s are exempted from the payment of Security Deposit
- I. If the Tenderer has produced a certificate from the Director of Supplies & Disposal, Bombay to affect that they are exempted from payment of Security Deposit.
  - II. All Government and Semi- Government Institutions under Govt. of Maharashtra and Zilla Parishads in Maharashtra and fully owned Undertakings of any State Govt. and Govt. of India; they have to produce such certificates for exemption from payment of Security Deposit.
- 1. The Security Deposit is liable to be forfeited in the event of non-fulfilment of terms and conditions by the tenderer.
    - a) If any stores, equipment/all equipments or any parts of equipment Is/are damaged in transit, and not replaced by supplier within stipulated period as notified by institute. We will recover the damages and applicable expenditure will be deducted from balance payment of supplier or from Security Deposit; or Security Deposit will be forfeited.
25. All the replacement of stores/equipments shall also be guaranteed for a period of 12 month from the date of installation and demonstration.
26. If any short supply is found at the time of verification/inspection of material/checking of material on its receipt, the supplier will have to supply the material within 15 days. Non-compliance of the order will compel institute to recover the cost from balance payment.
27. Repeat order:- If necessary/any equipment/stores is required in additional number, the repeat order will be placed on previous purchase order. The supplier should have to supply the equipment/s, stores as per the previous rates.
28. Training: - If we required training facility to our representative/staffs the supplier should have to provide training facility on free of cost.
29. The origin of stores offered whether Indian or foreign and in the case of the former State in which it is manufactured should be clearly stated against each article/equipment.
- 30. IMPORTED EQUIPMENTS: -**
- a) If any tenderer is going to quote the imported equipments, he should quote the rates in Indian currency (Rupees), and he should note that, if the item finalised to purchase they should supply at our door delivery and payment will be made in Rupees only.

*Tender documents for Chemical Engineering Laboratory Equipments*

- b) If such equipments are in foreign currency and agent/or manufacturer/dealer has quoted the equipments. The Tenderer should have to quote the rates, all charges, Freight, Insurance clearly. F.O.R. VISHNUPURI site; If finalised to purchase the imported equipments, he should do the all Import formalities; and must be followed all other conditions of Tender Notice/documents and purchase orders; and the tenderer has to supply at our site.
31. **Rate Contract:** - If the item/s is/are covered under DGS&D Rate contract, the tenderer should quote DGS&D Rate contract number, furnish the copy of the Rate contract and other relevant particulars.
32. **Disputes:** - If any disputes or differences, questions what so ever arises the same subject to Nanded Jurisdiction.

**Sd/-**  
**DIRECTOR**  
**S.G.G.S.I.E. & T., Nanded**

Encl. Tender schedule

**SHRI GURU GOBIND SINGHJI  
INSTITUTE OF ENGINEERING & TECHNOLOGY,  
VISHNUPURI, NANDED. 431 606**

**TENDER SCHEDULE**

Tender notice no. SGGSI&T/Stores-774/Chemical Engg/2011-12 Date 16.01.2012

**Dept.: Chemical Engineering Dept.**

**File No. Stores-774/Chemical Engg/2011-12**

Name of the Head of Stores: Equipments /Non – Recurring [Dead Stock]

**Note: Please read carefully all instructions, required specifications, Terms & conditions before quoting the rates.**

Sr. No	Name of the Equipment	Technical Specification of the equipment	Req. Qty.	Rate	Unit	If any Taxes / Charges please mention here	Total Amount	Remark
1		2	3	4	5	6	07	08
01	<b>Packed Bed Distillation Column</b>	1. Distillation Column: Material Stainless Steel, Dia. 80mm, Length 900mm (approx). 2. Packing Material: Borosilicate Glass Rasching Rings. 3. Pressure Gauge: Bourdon type 4. Rotameter: For cooling water flow rate measurement. 5. Steam Generator: Made of Stainless Steel, provided with Pressure Gauge & Level Indicator, Safety valve & insulated with ceramic wool and cladding With Aluminium foil. 6. Reflux Divider: Special arrangement to change R/D ratio automatically. 7. Condenser: Shell & Tube type made of Stainless Steel. 8. Bottom Product Tank: Made of Stainless Steel, capacity 5 Liters. 9. Distillate tank: Made of Stainless Steel, capacity 5 Liters. 10. Heaters: Nichrome wire heater. 11. Temp. Sensors: RTD PT-100 type 12. Control panel comprises of: a. Digital Temp. Controller: 0-199.9 °C, (For Re-boiler) b. Digital Temp. Indicator : 0-199.9 °C, with multi-channel switch c. With Standard make on/off switch, Mains Indicator etc. 13. The whole set-up is well designed and arranged in a good quality painted structure. (K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)	01					

*Tender documents for Chemical Engineering Laboratory Equipments*

Sr. No	Name of the Equipment	Technical Specification of the equipment	Req. Qty.	Rate	Unit	If any Taxes / Charges please mention here	Total Amount	Remark
02	<b>Absorption In Packed Bed</b>	<ol style="list-style-type: none"> <li>1. Column: Borosilicate Glass Dia. 55 mm, Length 750 mm (approx.)</li> <li>2. Packing: Borosilicate Glass Rasching Ring</li> <li>3. Feed Circulation: By compressed air.</li> <li>4. Pressure Regulator: 0-2 kg/cm<sup>2</sup>.</li> <li>5. Pressure Gauge: Bourdon type</li> <li>6. Feed Tank: Material Stainless Steel, Capacity 20 Liters.</li> <li>7. Flow measurement: Rotameters (One each for feed, air &amp; CO<sub>2</sub>).</li> <li>8. Collecting Tank: Material Stainless Steel, Capacity 10 Liters.</li> <li>9. The whole set-up is well designed and arranged in a good quality painted structure.</li> <li>10. CO<sub>2</sub> Cylinder with control valve, pressure regulator and pressure gauges</li> </ol> <p><b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b></p>	01					
03	<b>Adsorption In Packed Bed</b>	<ol style="list-style-type: none"> <li>1. Column (3 Nos.): Material Borosilicate glass of different dia. <ul style="list-style-type: none"> <li>• Column 1:- 32 mm Dia. X 1000 mm Length</li> <li>• Column 2:- 45 mm Dia. X 500 mm Length.</li> <li>• Column 3:- 55 mm Dia. X 300 mm Length.</li> </ul> </li> <li>2. Feed tank: Material Stainless Steel, Capacity 20 liters.</li> <li>3. Receiving tank: Material Stainless Steel, Capacity 20 liters.</li> <li>4. Feed circulation: FHP, Magnetic Pump made of Polypropylene.</li> <li>5. Piping: Stainless Steel and PVC of size ¼".</li> <li>6. Flow measurement: Rotameter for feed.</li> <li>7. Stop Watch: Electronic.</li> <li>8. The whole set-up is well designed and arranged in a good quality painted structure.</li> <li>9. With Calorimeter</li> </ol> <p><b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b></p>	01					

*Tender documents for Chemical Engineering Laboratory Equipments*

Sr. No	Name of the Equipment	Technical Specification of the equipment	Req. Qty.	Rate	Unit	If any Taxes / Charges please mention here	Total Amount	Remark
04	<b>Batch Crystallizer</b>	<p>1. Crystallizer (Jacketed Type): Material Stainless Steel, Cap. 2 Lit. with conical bottom</p> <p>2. Stirrer: FHP, Variable Speed.</p> <p>3. Heater: Nichrome wire heater</p> <p>4. Cooling Water Tank: Material Stainless Steel, Capacity 30 liter fitted With Pump.</p> <p>5. Flow measurement: Rotameter for cooling water.</p> <p>6. Pump: FHP.</p> <p>7. Receiving Tank: Material Stainless Steel , Capacity 2 liter with SS sieve</p> <p>8. Temp. Sensors: RTD PT-100 type</p> <p>9. Control panel comprises of:</p> <p>a. Digital Temp. Indicator 0-199.9 °C with multi-channel switch</p> <p>b. And Standard make on/off switch, Mains Indicator etc.</p> <p>10. The whole set-up is well designed and arranged in a good quality painted structure.</p> <p><b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b></p>	01					
05	<b>Natural Draft Tray Dryer</b>	<p>1. Drying Chamber</p> <p>A. Material : Stainless Steel</p> <p>B. Size : 30 x 30 x 30 cm insulated by Ceramic wool</p> <p>C. And housed in a MS Chamber.</p> <p>D. Maximum Temperature: 120 °C.</p> <p>2. Heater : Nichrome wire heater</p> <p>3. Weighing Balance: Digital, 0-1000gm. of ± 1 gm resolution.</p> <p>4. Temp. Sensor: RTD PT-100 type</p> <p>5. Control panel comprises of:</p> <p>A. Digital Temp. Controller 0-199.9 °C For Drying Chamber and</p> <p>B. With standard make on / off switch. Mains indicator etc</p> <p>6. A good quality painted rigid MS Structure is provided to support all the part.</p> <p>7. The whole unit is assembled rigidly on a base plate and mounted on a stand.</p> <p>8. Most of the parts are powder coated and rests are painted with auto paints.</p> <p><b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b></p>	01					

*Tender documents for Chemical Engineering Laboratory Equipments*

Sr. No	Name of the Equipment	Technical Specification of the equipment	Req. Qty.	Rate	Unit	If any Taxes / Charges please mention here	Total Amount	Remark
06	<b>Fluidize Bed Dryer</b>	<p>1. Column: Material Borosilicate Glass; Dia. 80 mm, Total Length 500 mm.</p> <p>2. Cyclone Separator: Material Stainless Steel, Compatible Capacity with Collector.</p> <p>3. Air Circulation: By Forced Draft Fan, Arrangement is done to vary the air flow rate.</p> <p>4. Heating Chamber: Compatible Capacity.</p> <p>5. Heaters: Nichrome wire heater.</p> <p>6. Temp. Sensors: RTD PT-100 type</p> <p>7. Control panel comprises of:</p> <p>a. Digital Temp. Controller: 0-200 °C, (For hot air.)</p> <p>b. With Standard make on/off switch, Mains Indicator etc.</p> <p>8. The whole set-up is well designed and arranged in a good quality painted structure.</p> <p><b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b></p>	01					
07	<b>Rotary dryer</b>	<p>01. Drying Shell: Material Stainless Steel Length 1.5 m. Dia. 110 mm.</p> <p>02. Feed Hopper: Material Stainless Steel, Compatible Capacity.</p> <p>03. Product Receiver: Material Stainless Steel, Compatible Capacity.</p> <p>04. Rotating Action: using Motor Coupled with reduction Gear box</p> <p>05. Hot Air Circulation: By forced draft fan, Arrangement is done to vary the air flow rate.</p> <p>06. Heating Chamber: Compatible capacity.</p> <p>07. Heater: Nichrome wire heater.</p> <p>08. Temperature Sensors: RTD PT-100 type</p> <p>09. Control panel comprises of:</p> <p>A. Digital Temperature Controller: 0-199.9 °C (For Hot Air)</p> <p>B. Standard make on/off switch, Mains Indicator etc.</p> <p>10. The whole set-up is well designed and arranged in a good quality painted structure.</p> <p><b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b></p>	01					

*Tender documents for Chemical Engineering Laboratory Equipments*

Sr. No	Name of the Equipment	Technical Specification of the equipment	Req. Qty.	Rate	Unit	If any Taxes / Charges please mention here	Total Amount	Remark
08	<b>Mixer-Settler Experimental Set-up (York Scheibel's Extraction Column)</b>	01. Extraction Column: Material Borosilicate Glass Dia. 45 mm, Height 750 mm (approx). 02. Packing: Woven mesh of Stainless Steel 03. Agitator: Stainless Steel impellers with Stainless Steel shaft coupled to a Variable Speed DC Motor. 04. RPM Measurement: Digital RPM Indicator, non contact type with proximity sensor. 05. Feed Tank (2 No's): Material Stainless Steel, Capacity 20 Liters. 06. Extract & Raffinate Tanks: Material Stainless Steel, Capacity 10 Liters. 07. Feed Circulation : By Compressed Air 08. Pressure Regulator: 0-2 kg/cm <sup>2</sup> . 09. Pressure Gauge: Bourdon type, 0-2 kg/cm <sup>2</sup> . 10. Flow Measurement : Rotameters (One each for solvent & solute) 11. Special arrangement for changing height of interface zone is done. 12. Control panel comprising of: Standard make on/off switch, Mains Indicator etc. 13. The whole set-up is well designed and arranged in a good quality painted structure. <b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b>	01					
09	<b>Experimental water-cooling tower (Forced Draft Counter flow type)</b>	01. Tower : Material Stainless Steel, Size - Cross-Section 150x 150mm, Height 750mm 02. Packing: Expanded wire mesh. 03. Air Circulation: By forced draft fan, arrangement is done to vary the air flow rate. 04. Air Flow Measurement: Orificemeter with U-tube manometer. 05. Water Flow Measurement: Rotameter. 06. Dry & Wet Bulb Temp.: Measured by Temperature Sensors. 07. Hot Water Tank: Material Stainless Steel, Double wall, insulated with ceramic fiber wool 08. Hot water circulation: Magnetic Pump made of Polypropylene to Circulate Hot Water. Maximum working temperature is 85 °C. 09. Heater : Nichrome wire heater 10. Temperature sensors: RTD PT-100 type 6 Nos. 11. Control panel comprising of: a. Digital Temperature Controller: 0-200 °C, For hot water tank b. Digital Temperature Indicator: 0-199.9 °C, with multi-channel switch c. With Standard make On/Off switch, Mains Indicator & fuse etc. 12. The whole set up well designed and arrange in a good quality painted structure. <b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b>	01					

*Tender documents for Chemical Engineering Laboratory Equipments*

Sr. No	Name of the Equipment	Technical Specification of the equipment	Req. Qty.	Rate	Unit	If any Taxes / Charges please mention here	Total Amount	Remark
10	<b>Interacting and Non-interacting System</b>	01. Process Tank: Material Stainless Steel, Circular, with level scale (3 Nos.); Capacity 2.5 to 3.5 liters. 02. Supply Tank: Material Stainless steel, Capacity 20 litres. 03. Overhead tank: Material Stainless steel, Capacity 5 litres. 04. Water Circulation: FHP Pump, Tullu/Standard makes. 05. Piping: SS/PVC, size ¼” 06. Flow Measurement: Rotameter. 07. The whole unit is assembled rigidly on a base plate. 08. Most of the parts are powder coated and rests are painted with auto paints. <b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b>	01					
11	<b>Single Tank System</b>	01. Process Tank: Material Stainless Steel, Circular, with level scale (1No.); Capacity 2.5 to 3.5 litres. 02. Supply Tank: Material Stainless Steel, Capacity 20 litres. 03. Overhead Tank: Material Stainless Steel, Capacity 5 litres. 04. Water circulation: FHP Pump, Tullu/Standard makes. 05. Piping: SS/PVC, size ¼” 06. Flow measurement: Rotameter 07. The whole unit is assembled rigidly on a base plate. 08. Most of the parts are powder coated and rests are painted with auto paints. <b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b>	01					

*Tender documents for Chemical Engineering Laboratory Equipments*

Sr. No	Name of the Equipment	Technical Specification of the equipment	Req. Qty.	Rate	Unit	If any Taxes / Charges please mention here	Total Amount	Remark
12	<b>Heat Transfer in Agitated Vessel</b>	01. System: Steam to Water 02. Vessel: Material stainless steel fitted with 4 baffles Dia. 250, Depth 350 mm (Approx.) 03. Jacket: Width 25 mm. Insulated with ceramic wool and Cladded with aluminum foil. 04. Helical Coil: Material Copper, OD 16mm, ID 13mm. 05. Agitator: Stainless steel Impeller fitted on a shaft, Coupled to a variable speed motor and Drive. 06. Condensate Measurement: Measuring Cylinder & Stopwatch 07. Water Flow Measurement: Rotameter. 08. Steam Generator: Made of stainless steel fitted with level indicator, pressure Gauge, Safety valve, drain and insulated with ceramic wool & cladding with Aluminum foil. 09. Heaters: Nichrome wire heater (2 Nos.) 10. Control panel comprising of: a. Digital Temperature Controller: 0-199.9 °C (For Steam Generator) b. Digital Temperature Indicator: 0-199.9 °C, with multi-channel switch c. Temperature sensors: RTD PT-100 type. d. RPM Indicator: Standard makes Digital, Non Contact type. e. With standard make On/Off switch, Mains Indicator etc. 11. A good quality painted rigid MS Structure is provided to support all the parts. <b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b>	01					
13	<b>Sieve Shaker (Gyratory type)</b>	Gyratory type shaker is driven by FHP motor through a reduction gear suitable to carry up to 7 sieves of 15 cm or 20 cm diameter. When clamped the sieve table does not rotate but it is inclined from the vertical axis and the direction of inclination changes progressively in the clockwise direction. In addition to the gyratory motion of the Shaker, there is an upward and downward movement ensuring that each square inch of the sieve is utilized. The whole mechanism runs in an oil bath. Complete with adopter for 20 cm diameter sieves. Suitable for use from 220/230 volts 50 Hz. AC supply. A time switch from 0-60 min. is provided. <b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b>	01					

*Tender documents for Chemical Engineering Laboratory Equipments*

Sr. No	Name of the Equipment	Technical Specification of the equipment	Req. Qty.	Rate	Unit	If any Taxes / Charges please mention here	Total Amount	Remark
14	<b>Shell and Tube Heat Exchanger</b>	01. System: Water to Water. (1 – 2 shell & tube type) 02. Shell: Material Stainless steel. Insulated with ceramic wool and Cladded with aluminum foil. Dia. 220 mm, Length 500 mm (Approx.); 25% cut baffles at 100 mm distance 4 Nos. 03. Tube: OD 16mm approx., Length 500mm (24 Nos.) 04. Water Flow Measurement: Rotameters (2Nos.) one each for cold & hot fluid. 05. Hot Water Tank: Made of Stainless steel Insulated with ceramic fiber wool. 06. Hot Water Circulation : Magnetic Pump 07. Heaters: Nichrome wire heater (2 Nos.) 08. Control panel comprising of: a. Digital Temperature Controller: 0-199.9 °C, (For Hot Water Tank) b. Digital Temperature Indicator: 0-199.9 °C, with multi-channel switch c. Temperature sensors: RTD PT-100 type. d. With Standard make On/Off switch, Mains Indicator etc. 09. A good quality painted rigid MS Structure is provided to support all the parts. <b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b>	01					

*Tender documents for Chemical Engineering Laboratory Equipments*

Sr. No	Name of the Equipment	Technical Specification of the equipment	Req. Qty.	Rate	Unit	If any Taxes / Charges please mention here	Total Amount	Remark
15	<b>Double Effect Evaporator</b>	<p>01. Evaporator (1st): Shell and tube type, Shell Dia. - 75mm approx., Length - 500mm approx., Made of Stainless Steel, Tubes Dia. - 12mm approx., Length - 500mm approx, No. of tubes 04; equilaterally placed right angle;</p> <p>02. Evaporator (2nd): Shell and tube type, Shell Dia. - 75mm approx., Length - 500mm approx., Made of Stainless Steel, Tubes Dia. - 12mm approx., Length - 500mm approx, No. of tubes 04; equilaterally placed right angle;</p> <p>03. Feed Tank: Material Stainless Steel, Capacity 30 Liters.</p> <p>04. Flow measurement: Rotameter (One each for feed &amp; cold water).</p> <p>05. Steam Generator:- Made of stainless steel fitted with level indicator, pressure Gauge, Safety valve, drain etc. and insulated with Ceramic wool &amp; cladding with Aluminum foil.</p> <p>06. Piping: Stainless Steel and PVC, size ¼".</p> <p>07. Condenser: Shell &amp; Tube type made of Stainless Steel.</p> <p>08. Bottom product tank: Made of Stainless Steel, capacity 10 Liters.</p> <p>09. Water supply tank for condenser: - Made of Stainless Steel, capacity 10 Liters.</p> <p>10. Pump:- FHP, capacity</p> <p>11. Heater:- Nichrome wire heater</p> <p>12. Vacuum Pump 1HP: For evaporation under Vacuum ( water Ring Type)</p> <p>13. Control panel comprises of: Digital Temp. Indicator: 0-199.9 °C, with multi-channel switch. Temp. Sensors: RTD PT-100 type With Standard make On/Off switch, Mains Indicator etc.</p> <p>14. The whole set-up is well designed and arranged in a good quality painted structure.</p> <p><b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b></p>	01					
16	<b>Adiabatic Batch Reactor</b>	<p>1. Reactor: Material Stainless Steel, Capacity 1 Liters. (Approx); Insulated with Ceramic wool.</p> <p>2. Reactor Geometry: Cylindrical With symmetrical four baffles, Reactor length(Lr), reactor Diameter(Dr), Baffles Width(Wb), Impeller Diameter(Di), Impeller Width(Wi), Clarence of Impeller from Bottom(Ci) <b>1.2 &lt; Lr/Dr&lt;2.0; 10&lt;Dr/Wb&lt;12; 3 Dr/Di&lt;3.2.; 5&lt;Di/Wi&lt;8; 2.5&lt;Lr/Ci&lt;3.0</b></p> <p>3. Stirrer: Teflon Impeller and Stainless Steel shaft coupled with FHP motor with variable speed (RPM 50 – 300 approx.)</p> <p>4. Control panel comprises of : a. Digital Temp. Indicator : 0-199.9 °C, RTD PT-100 type b. Temp. Sensors : RTD PT-100 type c. With Standard make on/off switch, Mains Indicator etc.</p> <p>5. The whole unit is assembled rigidly on a base plate and mounted on a stand.</p> <p>6. Most of the parts are powder coated and rests are painted with auto paints.</p> <p><b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b></p>	01					

*Tender documents for Chemical Engineering Laboratory Equipments*

Sr. No	Name of the Equipment	Technical Specification of the equipment	Req. Qty.	Rate	Unit	If any Taxes / Charges please mention here	Total Amount	Remark
17	<b>R.T.D. studies in Plug Flow Tubular Reactor (Constant Head Feed System)</b>	<p>1. Reactor: Material Stainless Steel, Capacity 0.7 Liters. (approx.) (Helical Coiled Tube type)</p> <p>2. Feed Tank: Material Stainless Steel, Capacity - 20 Liters.</p> <p>3. Feed Circulation: By Polypropylene magnetic pump, overhead tanks and sump Tanks made of stainless steel.</p> <p>4. Flow Measurement: Rotameter.</p> <p>5. Piping: Material Stainless Steel and PVC.</p> <p>6. Pressure Regulator: 0-2 Kg/cm<sup>2</sup>,</p> <p>7. Pressure Gauge: Bourdon type. 0-2 Kg/cm<sup>2</sup>.</p> <p>8. Stop Watch: Electronic</p> <p>9. Control panel comprises of: With Standard make on/off switch, Mains Indicator etc.</p> <p>10. The whole unit is assembled rigidly on a base plate and mounted on a stand.</p> <p>11. Most of the parts are powder coated and rests are painted with auto paints.</p> <p><b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b></p>	01					
18	<b>Combined Flow Reactor (Constant Head Feed System)</b>	<p>01. 1<sup>st</sup> Reactor: Material Stainless Steel, Capacity 0.7 Liters. (Approx) (Helical Coiled Tube Type)</p> <p>02. 2<sup>nd</sup> Reactor: Material Stainless Steel, Capacity 2 Liters. (Approx)</p> <p>03. Reactor Geometry : Cylindrical With symmetrical four baffles, Reactor length(Lr), reactor Diameter(Dr), Baffles Width(Wb), Impeller Diameter(Di), Impeller Width(Wi), Clearance of Impeller from Bottom(Ci)  <math>1.2 &lt; Lr/Dr &lt; 2.0</math>, <math>10 &lt; Dr/Wb &lt; 12</math>, <math>3 &lt; Dr/Di &lt; 3.2</math>, <math>5 &lt; Di/Wi &lt; 8</math>, <math>2.5 &lt; Lr/Ci &lt; 3</math></p> <p>04. Agitator: Material Stainless Steel Impeller and Stainless Steel shaft coupled with FHP motor with variable speed Control Facility (RPM 50 – 300 approx.)                      Impeller: material stainless steel, 4 Square Bladed (1No.)</p> <p>Baffles: Material Stainless Steel, (4Nos.) Detachable, symmetrically placed.</p> <p>05. Feed Tanks (2 Nos.): Material Stainless Steel, Capacity 20Litrs.</p> <p>06. Feed Circulation: By Polypropylene Magnetic Pump, Overhead Tanks and Sump Tanks Made of stainless steel.</p> <p>07. Flow measurement:- Rotameter (2. No.) (one each for reactants)</p> <p>08. Piping :- Stainless steel, and PVC</p> <p>09. Stop Watch :- Electronic</p> <p>10. The whole unit is assembled rigidly on a base plate and mounted on a stand.</p> <p>11. Most of the parts are powder coated and rests are painted with auto paints.</p> <p><b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b></p>	01					

*Tender documents for Chemical Engineering Laboratory Equipments*

Sr. No	Name of the Equipment	Technical Specification of the equipment	Req. Qty.	Rate	Unit	If any Taxes / Charges please mention here	Total Amount	Remark
19	<b>Emulsion Polymerization Reactor</b>	01. Reactor (Jacketed Type): Material Stainless Steel, Total Volume Of Reactor 1.5- 2 Liters (approx) 02. Agitator: Material Stainless Steel Impeller (2 Paddles) Fitted with Stainless Steel shaft coupled to DC motor with Thyristor controlled DC Drive. 03. Flow Measurement: Rotameter for Nitrogen Gas. 04. De-Oxygenation Column: Compatible Capacity. 05. Hot Water Tank: Material Stainless Steel, Double Wall; Insulated with Ceramic wool, Capacity 10-15 Liters. 06. Hot Water Circulation: Magnetic Pump Made of Polypropylene. Maximum working Temperature is 80 °C 07. Heater: Nichrome Wire Heater 750-1000 W approx. 08. Initiator Reservoir: Capacity 25-50 ml. 09. Temp. Sensor: RTD PT -100 type (5 Nos.) 10. Control panel comprises of : 11. Digital Temp. Controller: 0-199.9 °C, RTD PT-100type(For hot Water Tank) 12. Digital Temp. Indicator: 0-199.9 °C with multi-channel switch 13. RPM Indicator: Digital, Non-contact Type. 14. With Standard make on/off switch, Mains Indicator etc. 15. A good quality painted rigid MS Structure is provided to support all the part. 16. The whole unit is assembled rigidly on a base plate and mounted on a stand. 17. Most of the parts are powder coated and rests are painted with auto paints. 18. Vacuum pump coupled to ½ HP Standard make motor (water Ring type) 19. N <sub>2</sub> Cylinder with Control Valve, Pressure Gauges and Pressure Regulator. <b>(K. C. Engineers make or equivalent; All the specification details of Equipment design, Drawings, descriptive matter has to be provided.)</b>	01					

I/we agree to the all above terms and conditions of Tender documents as per Tender notice NO: SGGSIE&T/Stores-774/Chemical Engg /2011-12. Date 16.01.2012

Name of the firm:

Seal of the firm:

Signature of Tenderer: \_\_\_\_\_

Quotation no.: \_\_\_\_\_

Date: \_\_\_\_\_

Details of Certificate & documents attached [pl. mark as√ ]

1. Shop Act Registration
2. Sales Tax /Central Sales Tax /VAT Registration Certificate.
3. Sales Tax/Central sales tax/VAT Clearance certificate
4. Manufacturers Certificate/Authorized Dealer Certificate
5. DGS&D Registration Certificate. / CSPO Registration Certificate. / DIC Registration Certificate. / Small Scale Industries Registration Certificate. **[If available]**
6. **Details of EMD @3% of quoted total cost DD No/B. C. No. .... Date..... Bank .....**

In addition to above terms & conditions following terms also should be followed by the tenderers :