

CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY, KANPUR

Ref. No. C.S.J.M.U./D.A./P./131/2013

Date: 16.04.2013

TENDER NOTICE

Sealed tenders are invited from the manufacturers/ authorized dealers/ distributors, in two bid systems (technical and financial) for the purchase of equipments for the Chemical Engineering Laboratory (Fluid Mechanics Lab, Heat and Mass Transfer Lab, Process Control Lab, Reaction Engineering Lab) at UIET. The prescribed tender documents with terms & conditions may be downloaded from the University website (www.kanpuruniversity.org). Filled in Tender documents accompanied with a D.D. of Rs. 500/-, in favor of Finance Officer CSJM University, Kanpur, payable at Kanpur must reach the Estate Officer, CSJM University Kanpur, latest by 2:00 pm on 09.05.2013. Tenders will be opened at 3:00 pm on the same date.

Registrar

CHHATRAPATI SHAHUJI MAHARAJ UNIVERSITY KANPUR
TENDER DOCUMENT

Tender number:
Cost of tender:

Last date of submission:
Opening of tender:

TERMS AND CONDITIONS

1. The offers from the manufacturers/authorized dealers/distributors shall only be accepted. The tendering firms must be registered under trade tax act. If applying on behalf of a company as a dealer/distributor the relevant authorization document should be attached.
2. All the documents enclosed with the tender must be duly signed by the authorized representative/s of the firm with his/her name, designation and official seal and same should be submitted along with the tender.
3. The following documents must be submitted with the offer:
 - a. Trade Tax Registration certificate
 - b. Xerox copy of the order's for similar works and their performance certificate must be attached along with tender.
 - c. Authority letter of the manufacturer regarding dealership.
 - d. printed pamphlets of the equipment/machines/apparatus released by the manufacturer.
 - e. Other relevant documents/technical literature.
4. Offers should be valid for a minimum period of 120 days. The tenderer is required to supply equipments within 45 days from the receipt of the work order.
5. 1% of the earnest money shall be deposited in the form of DD/TDR in favor of "The Finance Officer, C.S.J.M. University, Kanpur", payable at Kanpur, for the estimated value of the items quoted.
6. The tender should be submitted in the format as per the prescribed proforma with all the technical details.
7. The University reserves the right to accept or reject any or all the offers and to split up the requirements or relax any or all above conditions without assigning any reason.
8. The quantity of goods may be increased/decreased according to the requirement.
9. The firms should provide at least one year warranty/guarantee and after that another one year free maintenance.
10. Clearance of customs or other duties/shipment will be the liability of the supplier.
11. Technical and financial bids should be submitted separately along with the technical compliance statement form and Financial bid form respectively.
12. The rates offered should be F.O.R. at the concerned department of the CSJM University, Kanpur of the goods ordered.

Technical and Financial Bid:

1. There should be separate submission of the Technical and Financial bid.
2. Technical bid would be considered first by the Technical Committee and if the bid is found satisfactory in all the respects, then only financial bid would be taken into consideration.
3. For each item quoted technical details should be as per the required specifications of the University.

Terms of Payment

1. All the goods delivered shall be accepted only if found in good and satisfactory conditions.
2. Payment will be made after satisfactory installation. Before payment the supplier will have to submit bank guarantee equivalent to 10% of the tender amount for the entire period of warranty.

Signature & Seal of the Tenderer



Arpita Yadav



18/3/13 Box.

TECHNICAL COMPLIANCE STATEMENT FORM

An item-by-item commentary on the Purchaser's Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications or a statement of deviations and exceptions to the provisions of the Technical Specifications.

S.N.	Item Name	Tender specification (annexure 1)	Bidder's Specification	Remarks/ Deviation (if any)
Fluid Mechanics Laboratory				
1.	Bernoulli's Theorem apparatus			
2.	Orificemeter and Venturimeter Test Rig			
3.	Losses due to pipe fittings, sudden enlargement and contraction			
4.	Centrifugal Pump Test Rig			
5.	Flow over notches			
Heat and Mass Transfer Laboratory				
1.	Thermal conductivity of insulating powder			
2.	Shell and Tube Heat Exchanger			
3.	Single effect evaporator			
4.	Steam distillation setup			
5.	Forced draft tray dryer with anaemometer			
Process Control Laboratory				
1.	Flow Control Trainer			
2.	Level Control Trainer			
3.	Pressure Control Trainer			
4.	Temperature Control Trainer			
5.	Interacting and Non-interacting System			
Reaction Engineering Laboratory				
1.	Semi-batch Reactor			
2.	RTD studies in a plug flow reactor		1	

(Technical literature/brochures/manuals should be attached alongwith this format)

Please note:


1. Compliance/Deviation statement comparing the specifications of the quoted model to the required specifications. This statement should also give the page number(s) of the technical literature where the relevant specification is mentioned.
2. Bids must have supporting documents (technical literature or copies of relevant pages from the service manual or factory test data) for all the points noted above, failure regarding which may result in rejection of bid.

Signature & Seal of the Tenderer



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18/3/13 

FINANCIAL BID

(To be sealed in separate envelop)

Price Quotation for Instruments/Equipments supplied at C.S.J.M. University, Kanpur

Name of the Tenderer (Company/Firm):

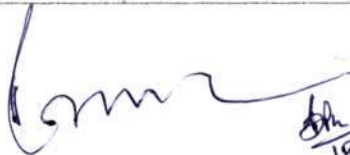
Address for Correspondence:

I/We hereby submit the proposal for the supply of Instruments & equipments and other accessories as per the scope of work given in this tender document within the time specified and in accordance with the terms and conditions. The consolidated rate is quoted in the prescribed format given below.

S.N.	Item Name	Make/ Manufacturing/	Price Quoted(inclusive of all taxes)
Fluid Mechanics Laboratory			
1.	Bernoulli's Theorem apparatus		
2.	Orificemeter and Venturimeter Test Rig		
3.	Losses due to pipe fittings, sudden enlargement and contraction		
4.	Centrifugal Pump Test Rig		
5.	Flow over notches		
Heat and Mass Transfer Laboratory			
1.	Thermal conductivity of insulating powder		
2.	Shell and Tube Heat Exchanger		
3.	Single effect evaporator		
4.	Steam distillation setup		
5.	Forced draft tray dryer with anaemometer		
Process Control Laboratory			
1.	Flow Control Trainer		
2.	Level Control Trainer		
3.	Pressure Control Trainer		
4.	Temperature Control Trainer		
5.	Interacting and Non-interacting System		
Reaction Engineering Laboratory			
1.	Semi-batch Reactor		
2.	RTD studies in a plug flow reactor		



Arpita Yadav



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Note:

1. The rate should not be provided as a percentage figure.
2. The consolidated rate should include all Govt. and any other levies (e.g. Service Tax /VAT etc.)
3. The tenderer is advised to quote rate in absolute Indian Rupees.
4. The rate quoted will be valid for 120 days. The period can be extended with mutual agreement.
5. No condition will be entertained and conditional tender will be liable to be rejected.
6. The F.O.R prices for C.S.J.M.U. Kanpur, should be mentioned.

Signature & Seal of the Tenderer

(M)

Arpita Yadav

[Signature]

[Signature]
18/3/13

[Signature]

Gram: University

Phones 2570301

2570263

2570450

छत्रपति शाहू जी महाराज विश्वविद्यालय, कानपुर CHHATRAPATI SHAHU JI MAHARAJ UNIVERSITY, KANPUR



कल्यानपुर, कानपुर
KALYANPUR, KANPUR

Ref. No.....

Dated.....20.....

Details of Tender Document are given below:

1. Name of Applicant/Firm :
2. Father's Name :
3. Address :
4. Mobile Number :
5. Trade Tax No. : Validity period:
6. TAN No. :
7. PAN No. :
8. Work Experience with proof :
9. Demand draft details(Tender fee) :
Name of Bank: _____ Draft/Receipt Number: _____ Date: _____
Amount: _____
10. Details of earnest money deposit:

Name of Bank: _____ Draft/FD/Receipt Number: _____

Date _____ Amount: _____

(Note: Attach separate sheet if required)

I/We fully agree to all the above terms and conditions.

List of enclosure

Tenderer's Signature with Stamp

NO

Aspirita Yadar

[Signature]

18/3/13 *[Stamp]*

SPECIFICATION OF EQUIPMENTS

1. Name of Tender:
2. Address:
3. E-mail ID:
4. Contact:
5. TIN:

Sl. No	Name of Equipment	Qty.	Rate	Amount	Tax	Total Cost	Earnest Money
Fluid Mechanics Laboratory							
1.	Bernoulli's Theorem apparatus All tanks (sump, inlet etc.) in setup should be of stainless steel, setup should have pump for closed loop water recirculation, flow measurement device, acrylic test section with converging and diverging parts, and piezometric tubes etc	1					
2.	Orificemeter and Venturimeter Test Rig All tanks (sump, inlet etc.) in setup should be of stainless steel. , setup should have pump for closed loop water recirculation, flow measurement device and pressure drop measurement with manometer (mercury filled), rotameter, flow control valves and bypass valves etc	1					
3	Losses due to pipe fittings, sudden enlargement and contraction All tanks (sump, inlet etc.) in setup should be of stainless steel, setup should have pump for closed loop water recirculation,, flow measurement device and pressure drop measurement with manometer (mercury filled), fittings such as gate valve, globe valve, ball valves, bend, elbow, sudden contraction and sudden expansion fittings etc., flow control valves and bypass valves etc.	1					
4.	Centrifugal Pump Test Rig Set up should consist of a centrifugal pump with variable speed coupled with electrical motor, supply tank, measuring tank & pipe fittings for closed loop water circulation (all made of stainless steel), flow measurement device, Pressure and Vacuum gauges should be connected on delivery and suction side of pump for pressure measurement.	1					
5.	Flow over notches All tanks (sump, inlet etc.) and channels in setup should be of stainless steel, Setup should have pump for closed loop water recirculation,, flow	1					

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	measurement device, vernier pointer to measure the height of water in channel, different types of 'V' and rectangular notches etc						
Heat and Mass Transfer Laboratory							
1.	Thermal conductivity of insulating powder The apparatus should consist of two thin-walled concentric copper spheres with the inner sphere housing nichrome wire heating coil. Insulating powder should be filled between the spheres and the heat should flow radially outwards. Temperature sensors should be fitted at proper positions to measure surface temperatures of spheres. Setup should have a variac for giving heat input and should be measured by digital voltmeter & digital ammeter and temperature indicators.	1					
2.	Shell and Tube Heat Exchanger The apparatus should consist of a 1,2 pass shell and tube exchanger with fabricated SS shell, inside which copper tubes with baffles should be fitted. The hot water should pass to one end of shell through the tubes and return to another end through remaining tubes and the cold water should be admitted at the one end of shell and should pass over the hot-water tubes. Flow rates of hot and cold water should be controlled by valves and should be measured using rotameters. Hot water should be passed by means of magnetic drive pump from a heating tank fitted with heaters. Temperature sensors, digital temperature controllers, indicators etc should be present at appropriate places. All tanks in setup should be of stainless steel	1					
3.	Single effect evaporator The set-up should consist of stainless steel tubes surrounded by a stainless steel jacket and fitted with accumulator. Dilute solution should be fed to tubes and steam from a steam generator should be supplied to shell to concentrate the dilute feed solution to a desired level. The jacket should be fitted with a steam trap and the condensate should be collected at the end of trap. The vapours of volatile solvent should be condensed in a shell & tube type condenser and the balance nonvolatile solute collected in the accumulator should be recycled through the evaporator. Flow rates of liquids should be measured using rotameters, steam generator, condenser, pipings and tanks should be made of stainless steel. Temperature sensors, digital temperature controllers, indicators etc should be present at appropriate places.	1					
4.	Steam distillation setup The equipment should consist of jacketed pressure vessel for distillation. Steam from a steam generator should be allowed to enter the outer jacket or in the vessel. The vapors from the top of the vessel are to be condensed in the	1					

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	<p>shell and tube type condenser by circulating cooling water. The condensate is to be collected in a separating chamber. The set-up is to be fitted with steam trap, control valves, pressure gauge, temperature sensors and other instrumentations wherever required.</p> <p>Distillation unit, steam generator, condenser, pipings and tanks should be made of stainless steel. Flow rates of liquids should be measured using rotameters and pumps for flow circulation must be present in setup. Refractometer to be used for analysis must also be provided.</p>					
5.	<p>Forced draft tray dryer with anaemometer</p> <p>The set-up should consist of an insulated double wall chamber. Inside the chamber there should be a tray attached directly to an electronic weighing balance fitted on top outside the chamber. Material for drying is to be placed in the tray and regular loss of weight is to be monitored. Air from blower should pass through heating chamber to produce hot air. This hot air which is the drying agent should enter from one side of the chamber and leave the chamber from other side after removing the moisture from the tray. The hot air circulation should be by means of a forced draft fan. An arrangement for varying the air flow rate should be present and the anaemometer to measure the air flow rate must be provided. Digital temperature controllers, indicators, sensors and other instrumentations should be provided wherever required.</p>	1				
Process Control Laboratory						
1.	<p>Flow Control Trainer</p> <p>The setup should demonstrate the control techniques in a flow process. The flowing water must be pumped from the tank by a centrifugal pump and should be in a closed circuit. Rotameters should be present to measure flow. The flow of water in the line should be sensed by the transmitter and communicated to the digital indicating controller. The measured variable should be compared with the set point by controller and output should be sent to I/P converter, which should vary the opening of the pneumatic control valve to eliminate the error observed.</p> <p>Setup should include all components of the flow control process such as differential pressure transmitter, I/P controller, control valve, microprocessor controller, air compressor, pressure regulator, pressure gauge etc. The unit should be computer controlled and necessary interfacing units and software must be provided. All components of the unit must be made of stainless steel.</p>	1				
2.	<p>Level Control Trainer</p> <p>The setup should consist of a process tank fitted</p>	1				

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	<p>with scale and a level transmitter. Water should enter the tank through a Pneumatic control valve. The setup should be a closed circuit process with water being pumped from the sump to process tank. Rotameters should be present to measure flow. The level of water in process tank should be sensed by the transmitter and communicated to the digital indicating controller. The measured variable should be compared with the set point by controller and output should be sent to I/P converter, which should vary the opening of the pneumatic control valve to eliminate the error observed. Setup should include all components of the level control process such as level transmitter, I/P controller, control valve, microprocessor controller, air compressor, pressure regulator, pressure gauge etc. The unit should be computer controlled and necessary interfacing units and software must be provided. All components of the unit must be made of stainless steel.</p>					
3.	<p>Pressure Control Trainer</p> <p>The setup should consist of a process tank (fitted with a pressure transmitter) in which compressed air should enter through a pneumatic control valve. The air pressure in process tank should be sensed by the transmitter and communicated to the digital indicating controller. The measured variable should be compared with the set point by controller and output sent to I/P converter, which should vary the opening of the Pneumatic control valve to eliminate the error observed. A ball valve should be provided in the process tank to disturb the system and to observe the effect of disturbance. Setup should include all components of the pressure control process such as pressure transmitter, I/P controller, control valve, microprocessor controller, air compressor, pressure regulator, pressure gauge etc. The unit should be computer controlled and necessary interfacing units and software must be provided. All components of the unit must be made of stainless steel.</p>	1				
4.	<p>Temperature Control Trainer</p> <p>The process setup should consist of heating tank fitted with thyristor-controlled heater for on line heating of the water. Water should be supplied from a constant head tank and its measured by rotameter. The temperature of the heated water should be sensed by RTD sensor. The measured variable should be communicated to digital indicating controller through temperature transmitter. Error should be calculated and output should be communicated to Thyristor Controlled heater to achieve the set point. Setup should include all components of the</p>	1				

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	temperature control process such as temperature transmitter, heater, thyristor controller, microprocessor controller, etc. The unit should be computer controlled and necessary interfacing units and software must be provided.						
5.	Interacting and Non-interacting System The setup should be designed to study dynamic response of single and multi capacity processes when connected in interacting and non-interacting mode. The setup should consist of supply tank, pump for water circulation, rotameter for flow measurement, process tanks with scales, which could be connected to interacting and non-interacting mode. All components of the unit must be made of stainless steel.	1					
Reaction Engineering Laboratory							
1.	Semi-batch Reactor The set up should consist of a stainless steel reactor with stirrer fitted with a constant temperature water bath. Feed tank for the reactant and rotameter to measure the flow of reactant should be provided. Magnetic drive pump or compressed air from a compressor should be provided for circulation of feed. Digital temperature controllers, indicators, sensors and other instrumentations should be provided wherever required.	1					
2.	RTD studies in a plug flow reactor The setup should have a feed tank and a stainless steel helical coiled plug flow reactor. Valves should be present for adjusting flow rate and rotameters for flow rate measurement. A magnetic drive pump or compressed air should be used for circulation of feed. An arrangement for injecting tracer into the reactor using a syringe should be provided. Necessary instrumentations should be provided wherever required.	1					

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