

TENDER

FOR

SUPPLY & INSTALLATION OF
INSTRUMENTS FOR SYNTHESIS LAB
SCHOOL OF BASIC SCIENCES, IIT MANDI



Tender No.: IITMANDI/SBS/TEN/2010-11/SYNLAB/2

Tender date: December 01, 2010

Last Date of submission: December 23, 2010

Indian Institute of Technology, Mandi

Transit Campus: Mandav Hotel, 2nd Floor (Near Bus Stand), Mandi – 175001 (H.P)

Tel.: 01905-237917/7926/7931 **email:** sbs_office@iitmandi.ac.in

Indian Institute of Technology (IIT) Mandi, Mandi invites tender for supply, erection, installation and commissioning, testing, demonstration and training of Synthesis Laboratory Equipments, as per specifications given in the Schedule attached to the Tender form annexed hereto. All offers should be made in English and should be written in both figures and words. Tender forms can be downloaded from the website (<http://iitmandi.ac.in/administration/tenderseoi.html>) of the Institute.

The bidders are requested to read the tender document carefully and ensure compliance with all specifications/instructions herein. Non-compliance with specifications/instructions in this document may disqualify the bidders from the tender exercise.

The Director, IIT Mandi, reserves the right to select certain item(s) (in single or multiple units) and reject the others or all mentioned in the Schedule and to reject any quotation wholly or partly without assigning any reason.

Incomplete tenders, amendments and additions to tender after opening or late tenders are liable to be ignored and rejected.

Terms and Conditions:

1. The technical and financial bids should be quoted separately and put in different sealed envelopes marked "**Technical bid**" or "**Financial bid**" as applicable. These separate bids envelopes be put in an outer envelope which should also be sealed.
2. The technical and financial bids should be submitted in duplicate. The financial bid should include the cost of main equipment/item and its accessories. If there is any separate cost for installation etc. that should be quoted separately.
3. Each individual sealed envelope as well as the outer envelope should be marked with the following reference on the top left hand corner:
"IITMANDI/SBS/TEN/2010-11/SYNLAB/2/item no./name of the equipment",
4. The printed literature and catalogue/brochure giving full technical details should be included with the technical bid to verify the specifications quoted in the tender. The bidders should submit copies of suitable documents in support of their reputation, credentials and past performance.
5. The rates should be quoted in figures (typed or printed) and cutting should be avoided. The final amount should be in figures as well as in words. If there are cuttings, they should be duly initialled, failing which the bids are liable to be rejected.
6. The technical and financial bids should be addressed to "The Director, Indian Institute of Technology Mandi, Mandi-175001 (H.P)"
7. Any bids received after **4.00 p.m. on 23rd December, 2010** shall not be considered.
8. While sending rates, the firm shall give an undertaking to the effect that the terms/conditions mentioned in the enquiry letter/Tender Notice against which the rates are being given are acceptable to the firm. In case the firms do not give this undertaking, their rates will not be considered.
9. The quotations should be given for the items in the same order as in the enquiry letter.

10. If the supplier/firm is manufacturer/authorized dealer/sole distributor of any item, the certificate to this effect should be attached.
11. The quantity shown against each item is approximate and may vary as per demand of the Institute at the time of placing order.
12. All tender documents should have to be sent through courier, speed post or registered post only. All tender documents received after this specified date and time shall not be considered. The postal address is:

“The Dean (Academics),

**Indian Institute of Technology Mandi (IIT Mandi),
Academic Block (Vallabh Degree College Campus),
Mandi – 175001 (H.P)”**

13. In the event of any dispute or difference(s) between the vendee Institute (IIT Mandi) and the vendor(s) arising out of non-supply of material or supplies not found according to specifications or any other cause whatsoever relating to the supply or purchase order before or after the supply has been executed, shall be referred to “The Director, IIT Mandi”, Mandi who may decide the matter himself or may appoint arbitrator(s) under the arbitration and conciliation Act 1996. The decision of the arbitrator shall be final and binding on both the parties.
14. The place of arbitration and the language to be used in arbitral proceedings shall be decided by the arbitrator.
15. All disputes shall be subject to Mandi Jurisdiction only.
16. All tenders in which any of the prescribed conditions is not fulfilled or any condition is put forth by the tenderer shall be summarily rejected.

The Technical bid will be opened on **December 27, 2010 at 10.00 A.M** in the Conference Room of the Academic Block. The bidders or their authorized representative may also be present during the opening of the Technical Bid, if they desire so, at their own expenses.

Price bids of only those bidders will be opened whose technical bids are found suitable by the committee appointed for the purpose. Date and time of opening of price bids will be decided after technical bids have been evaluated by the committee. Information in this regard will be posted on Institute’s web site / Notice board. No separate information shall be given to individual bidders. In exceptional situation, an authorized committee may negotiate price with the qualified bidder quoting the lowest price before awarding the contract

1. Clarifications:

In case the bidder requires any clarification regarding the tender documents, they are requested to contact Dr. Subrata Ghosh or Dr. Pradeep Parameswaran or Dr. Chayan Kanti Nandi, Assistant Professors, IIT Mandi (e-mail: subrata@iitmandi.ac.in,

pradeep@iitmandi.ac.in, chayan@iitmandi.ac.in) on or before 15/12/2010.

2. Tender Cost:

A Demand draft of Rs. 1,000/- (Rupees One Thousand only) towards non-refundable tender fee drawn in favour of "The Registrar, IIT Mandi" payable at Mandi should accompany the Technical bid document.

3. Earnest Money Deposit (EMD):

If the cost of the equipment/item is more than 5 lakhs, a refundable amount @ 2% of the quoted price as earnest money deposit (EMD) in the shape of DD drawn in favour of "The Registrar, IITMandi" payable at Mandi should accompany the Financial bid documents. Without EMD the bid will not be considered.

4. Pre – Qualification Criteria:

a. Bidders should be the manufacturer / authorized dealer. Letter of Authorization from original equipment manufacturer (OEM) on the same and specific to the tender should be enclosed.

b. An undertaking from the OEM is required stating that they would facilitate the bidder on a regular basis with technology/product updates and extend support for the warranty as well.

5. Prices:

a) The Prices quoted should be inclusive of all taxes or duties, packing, forwarding, freight, insurance, delivery and commissioning etc. at destination site (IIT Mandi, Mandi). IIT Mandi is on the course of registering with DSIR, Govt. of India and may be exempted from Custom / Excise Duty. Exemption Certificate to this effect may be issued by IIT Mandi. **Hence, prices should be quoted separately inclusive and exclusive of Customs/Excise Duty.** The rates shall be firm and final. Nothing extra shall be paid on any account.

b) In case of imported equipment(s)/item(s), the agency commission, if any, payable in Indian rupees should be mentioned separately. For imported equipment, the Letter of Credit will be opened for the amount excluding agency commission in Indian Rupees. The firm should clearly mention the address of foreign bank in the financial bid.

6. Validity:

The bid should be valid for acceptance up to a period of 180 Days. The Bidders should be ready to extend the validity, if required.

7. Delivery:

The Equipment should be delivered and installed within the period as specified in the purchase order and be ready for use within 16 weeks of the issue of purchase order unless otherwise prescribed. If the bidder fails to deliver and place any or all the Equipment or perform the service by the specified date, penalty at the rate of 1% per week of the total order value subject to the maximum of 10% of total order value will be deducted.

8. Training:

Bidders need to provide adequate training to the nominated person of IIT Mandi at their cost. IIT Mandi will not bear any training expenditure.

9. Warranty Declaration:

Bidders must give the comprehensive onsite warranty as required from the date of successful installation of Equipment against any manufacturing defects and also give the warranty declaration that "everything to be supplied by us hereunder shall be free from all defects and faults in material, workmanship and shall be of the highest quality and material of the type ordered, shall be in full conformity with the specification and shall be complete enough to carry out the experiments, as specified in the tender document."

Any deviation in the material, and the specifications from the accepted terms may liable to be rejected and the bidders need to supply all the goods in the specified form to the satisfaction / specifications specified in the order / contract and demonstrate at the their own cost.

If the cost of an equipment is above Rs. 25 lakhs, a performance bank guarantee for an amount equal to the price for the duration of the warranty period will be taken from the supplier or Indian agent.

10. Terms of Payment: Payment will generally be made only after delivery and satisfactory installation, testing, commissioning etc. This must be specified in the tender/quotation.

- In case of imported supplies, payment (excluding Indian agency commission, if any) will be made through Letter of Credit.

11. Tender expenses and documents: All costs incurred by the bidder in the preparation of the tender shall be at the entire expense of the bidder.

12. Tender Evaluation Criteria: The technical bids will be opened on 27th December 2010, at 10.00 AM. After evaluation of the technical bid, the financial bid for only those offers which have qualified in the evaluation of technical bid will be opened.

13. Return of EMD:

- The earnest money of the successful bidder will be returned to them without any interest after completing the successful contract.

- The earnest money of unsuccessful bidders will be returned to them without any interest within fifteen working days after awarding the contract.

14. Manual and documentation: All the manuals necessary for operating and servicing the equipment (including details of electronic circuits) will have to be provided along with the instrument.

Registrar (IIT Mandi)

BID PARTICULARS

1. Name of the Supplier :

2. Address of the Supplier :

3. Availability of demonstration of equipment : Yes / No

4. Tender cost enclosed: : Yes/No if yes

D.D. No. _____ Bank _____ Amount _____

5. EMD enclosed : Yes / No if Yes

D.D. No. _____ Bank _____

6. Name and address of the Officer/contact person to whom all references shall be made regarding this tender enquiry.

Name :

Address :

Telephone No. :

Fax No. :

Mobile No :

e-Mail :

Web :

Annexure-1

Item No. 1: Fume Hood

Qty. 01 Nos.

SPECIFICATIONS:

- External dimensions (L X D X H) --Approximately 1500 X 873 X 1500 mm
- Working zone (L X D X H) --- Approximately 1420 X 682 X 1435 mm
- Maximum Sash Opening --- Approximately 580 mm / 22.8"
- Sash Type --- Vertical rising front sash constructed of tempered glass for max. operator safety or better.
- Outer Exhaust Outlet Diameter: Approximately 250 mm
- Built-in Worktop: Should be easy to clean, highly resistant to wide variety of common laboratory acids, solvents & chemicals, will not discolour & will not corrode.
- Electrical Fittings: 2 nos. universal electric socket outlets with splash proof plastic covers. Fitted with safety catch that provides a visual indication of valve position.
- Standard Fail safe sash mechanism: Should have counterbalanced sash which will tilt & lock in case of cable snap for the safety of end users.
- Instant start Lighting System: Electronically ballasted 5000k lighting system. Light Intensity: 780 Lux/72 foot candles or better
- Airfoil : Stainless steel
- Interior baffle system: Should be made up of resin laminated to deliver max. containment by ensuring airflow uniformity throughout the main chamber of hood. No exposed screws should be present.
- Utility Service Fittings: 1 swan neck remote control water faucet & 1 fitting for air / gas / vacuum / nitrogen etc. or better.

Available Input power: 220 V one phase/three Phase, 50 Hz

The quoted system should be certified as complete for carrying out the all kinds of chemical reactions inside the hood and any necessary accessories must also be included in the quotation:

We may need to shift the fume hood to a new campus in the near future. Offer your estimate for shifting and re-installation of the fume hood.

- **Three year on-site extended warranty on all parts.**
- **Annual Maintenance Contract may be quoted as optional.**

Annexure-2

Item No. 2: Deep Freezer (vertical)

Qty. 01 Nos.

SPECIFICATIONS:

Temperature Range: – 80°C to – 50°C

Net Capacity: 350 Liter or more

Shelves Supplied : 4 Nos or more.

Power Supply: 230V; 50 Hz , Single Phase

Adjustable high/ low Temp alarm

Interior: Heavy gauge, cold-rolled Stainless steel cabinets have a powder coat paint finish for a uniform exterior surface that resists chipping and rust.

Temperature display: May displays the actual temperature & optional sample probe

Audible/Visual Alarm, Alarm Silence are preferable.

Low Battery & Hot condenser Indicators are preferable

Configuration: Configure Access code, serial output, temperature alarm test, system battery test.

Calibrate: Control Probe Temperature, Sample probe temperature

The quoted system should be certified as complete for carrying out the following types of experiments and any necessary accessories must also be included in the quotation:

To keep DNA or protein samples for very long time without losing their activities.

- **Three year on-site extended warranty on all parts.**
- **Annual Maintenance Contract may be quoted as optional**

Annexure-3

Item No. 3: Vacuum oven

Qty. 01 Nos.

SPECIFICATIONS:

- Internal Dimension: Approximately 30 cm x 30 cm x 40 cm (W x H x Depth)
- Temperature range: 50 °C (or less) to 150 °C or more
- Accuracy: ± 3 °C or better.
- Controller: Digital Temperature Indicating Controller (preferably Microprocessor based AUTO TUNING PID Digital Temperature indicating Controller for precise Temperature control with BUILT IN digital Timer to control the temperature).
- Heat Load: 1.5 KW or more
- Capacity: 20 lit. or more
- Sensor: A suitable sensor for precise temperature control.
- Display: Digital display
- Internal material: Heavy gauge stainless steel
- External material: Powder coated steel
- Insulation material: Mineral wool
- Shelves: Two Stainless steel shelves
- Door Gasket: High temperature silicone rubber
- Viewing window: High vacuum compatible safety glass.
- Vacuum range: 10-750 mmHg or better
- Safety device: Over temperature protector
- Power supply: 220/230V, 50/60 Hz
- Valves: Two diaphragm valves for admission of inert gas, dry air etc.
- Vacuum indicator: Digital vacuum indicator with vacuum transmitter for vacuum indication
- Vacuum pump: Good quality double stage vacuum pump having capability to generate ultimate vacuum 0.003m bar or better.

The quoted system should be certified as complete for vacuum drying, anaerobic baking, curing, out-gassing solids and liquids etc. Any necessary accessories must also be included in the quotation:

We may need to shift the instrument to a new campus in the near future. Offer your estimate for shifting and re-installation of the instrument.

- **Three year on-site extended warranty on all parts.**
- **Annual Maintenance Contract may be quoted as optional**

Annexure-4

Item No. 4: Flake Ice Making Machine

Qty. 01 Nos.

SPECIFICATIONS:

- Air cooled system
- CFC Free refrigeration System
- Auto shut off if water temperature is high and/or bin is full
- Built in visual alarm
- Stainless steel storage bin
- Auto Shut off if low water pressure
- Continuous production facility
- Electronic controlled system
- Highly hygienic bin for storage of ice
- Low power and water consumption
- Ice flaker body is made of non corrosive material
- Well electrically grounded for safety
- Production capacity: Approximately 20 kg /24hrs or more
- Bin capacity: Approximately 25 kg
- Available Input power: 220-240 V one phase/three Phase, 50 H z

The quoted system should be certified as complete for efficient production of flake ice.

All other necessary accessories that are essential for running the instrument must also to be quoted.

We may need to shift the ice machine to a new campus in the near future. Offer your estimate for shifting and re-installation of the ice machine.

- **Three year on-site extended warranty on all parts**
- **Annual Maintenance Contract may be quoted as optional**

Annexure-5

Item No. 5: Rotary evaporator with Vacuum Pump

Qty. 01 Nos.

Specification: Rotary evaporator:

Dimensions (L x H x D)	Approx. (390-450) x (400-550) x (310-490) mm
Weight	15 - 20 kg with bath
Operating voltage	220 - 240 V
Frequency	50/60 Hz
IP class	20 or 21
Rotation speed (range)	20 - 280 rpm or more
Flask size	1000 - 4000 ml or more
Max. Flask weight	2.5 - 3.0 kg
Dimensions (L x H x D)	Approx. (390-450) x (400-550) x (310-490) mm
Dimensions (L x H x D)	Approx. (390-450) x (400-550) x (310-490) mm
Dimensions (L x H x D)	Approx. (390-450) x (400-550) x (310-490) mm

Specifications: Heating Bath

Diameter Heating Bath	Approx. 250 - 300 mm
Weight	Approx. 3.5 - 4.0 kg
Operating voltage	220 - 240 V
Frequency	50/60 Hz
IP class	20 or 21
Bath size	3.5 – 4.5 liter
Temperature range	At least 20 – 90°C or more
Regulation accuracy	+/- 1°C or better
Display	LED/LCD

Specifications: Vacuum Pump

Diaphragm Pump	2 Stages
Volume flow rate	1.7 -1.8 m ³ /h or better.
Ultimate vacuum	9 -12 mbar or better
Operating voltage	220 - 240 V/ 50-60Hz

The quoted system should be certified as complete for efficient removal of organic solvents and water at a temperature below their boiling point.

Additional accessories may also be quoted.

Three year on-site extended warranty on all parts.

Annual Maintenance Contract may be quoted as optional

Annexure-6

Item No. 6: Gas cylinders and integrated gas handling system

Qty. 01 No.

Specification: Integrated gas handling system for the supply of N₂, H₂, He, Ar gases for many outlets supplying these gases for running many instruments simultaneously as well as for performing synthesis experiments. The system design should be in such a way that the gas cylinders will be kept outside the building in a cage and the supply to different outlets will be made from these common cylinders. The system design of the supply system should have the flexibility to add additional gas cylinders of the above gases as well as any other gas. The system should also has the flexibility to add gas mixtures (if required) in the supply system. The quality of the materials should be superior and the system should be completely leak-proof to prevent any leakage of the gases and accidents. The gas supply system should have to be robust enough to avoid any pressure loss/pressure build up at any point in the system while the gas is being drawn at multiple outlets or when the gas is not being drawn.

Sl. No	Description	Qty.
1.	High Pressure seamless gas cylinder of 47 litre w/c. fitted with valve and filled with Nitrogen gas. (99.999% pure)	03
2.	High Pressure seamless gas cylinder of 47 litre w/c. fitted with valve and filled with Hydrogen gas. (99.999% pure)	01
3.	High Pressure seamless gas cylinder of 47 litre w/c. fitted with valve and filled with Ar gas. (99.999% pure)	01
4.	High Pressure seamless gas cylinder of 47 litre w/c. fitted with valve and filled with Helium gas. (99.999% pure)	01
5.	Double stage double meter Gas regulator of brass fitted with Stainless Steel diaphragm and pressure gauge suitable for above gas cylinders.	04
6.	Purification panel for Four Gases (Including Two oxygen trap, two hydrocarbon trap, Four moisture trap, On-Off valve, pressure gauges and mini Regulators.	01
7.	Manifold System 1+1 (In this system if one cylinder is empty to switch ON the second cylinder without any halt or breakage to continue the analysis). Mount on the Wall.	04
8.	Tail pipe to connect the Cylinder and manifold.	08
9.	Cylinder Safety Holding bracket.	08
10.	1/8' S.S Tubing.	250 ft.
11.	Hardware fitting.	01 lot
12.	PVC casing	70 feet
13.	Gas outlet (tap)	15

Three year on-site extended warranty on all parts.

Annual Maintenance Contract may be quoted as optional

Annexure-7

Item No. 7: Double Stage Water Purification System

Qty. 01 No.

Specification: Double Stage Water Purification System

Pretreatment: Three stage pre-treatment system with 10, 5 & 1 micron spun filters for removal of suspended particles. System should be micro processor controlled with water purity monitoring and having pre-treatment and reverse osmosis in quick fit modules. System should be upgradeable to 15 liters/hr with the use of additional reverse osmosis cartridge.

1. Analytical Grade water system:

Product water should have

- Flow rate : 7 liters / Hr or more
- TOC - typical : < 20 ppb or better
- Inorganic/Resistivity : 10 to >15 MΩ- cm or better
- Bacteria : < 1 CFU/ml
- pH: effective neutral.

System should be supplied with appropriate inert polythene (to minimize the release of organics) 40 liters reservoir having integrated level control system to allow automatic fill of reservoir. The tank should be opaque to prevent algal growth and should have composite vent filter to prevent the ingress of airborne bacteria, particulates, organic vapors etc.

2. Ultra pure water system

Output water requirements:

1. TOC: 1-3 ppb or better
2. Inorganic/resistivity: 18.2 MΩ- cm @ 25 °C or better
3. Bacteria: < 0.1 CFU/ml
3. Flow Rate: up to 2 Ltrs./min
4. Particles: 0.2µm or less
5. pH: Effectively Neutral

Product water resistivity and temperature should be measured before dispense and indicate when the purification pack needs to be replaced. The system should have cartridge capacity minimum 70,000 Liters. The water within the unit should be recirculated through the purification technologies to maintain purity. The system should have the safety features –Low feed Shut-Off, Audio-Visual Alarms, PIN coded system settings, Dispense shut-off during disinfection, Auto-restart. The system should have recirculation of the purified water to maintain consistent peak quality.

All required accessories for connections to inlet and dispensing points, and any other special requirements for optimum operation of the instrument should be included.

Available water and Power supplies: Tap water, 220/230V, 50/60 Hz

The system should be quoted with a CMC for a period of 3 years for the trouble free operation of the system providing all the necessary consumables and services.

Three year on-site extended warranty on all parts.

Annual Maintenance Contract may be quoted as optional

Annexure-8

Item No. 8: Centrifuge

Qty. 01 No.

Specification:

Maximum Speed: 15,000 rpm or more (Fixed-angle)

Maximum g-Force: 22,065 x *g* or more

Maximum Capacity: 4 x 250 mL or more

Additional rotor: 24 x 1.5 ml should be quoted

Drive: Brushless Induction

Operating Temperature: +2 °C to +40 °C Ambient or better

Set Temperature Range: 0 °C to +40 °C or better

Power supply: 220/230V, 50/60 Hz

Should have options to:

- Exchange rotors.
- Imbalance protection with auto-shutdown
- Over temperature protection with auto-shutdown
- Door safety interlock and biosafety lid
- Automatic magnetic rotor identification
- Bio safety system with screw cap buckets

The quoted system should be certified as complete for carrying out the following types of experiments and any necessary accessories must also be included in the quotation:

- Purifications of the synthesized DNA-linked quantum dots or nanoparticles.
- Purification of the expressed proteins.
- For the separation of polymeric, metallic and organic nanoparticles.

Three year on-site extended warranty on all parts.

Annual Maintenance Contract may be quoted as optional

Other rotors may be quoted as optional

Annexure-9

Item No. 9: Programmable spin coater

Qty. 01 No.

Technical Specifications of Spin Coater:

Speed of Rotation	600 RPM to 7000 RPM or better
Speed Accuracy	<1% or better error across the full scale
Power Input	230 V AC, 50 Hz
Number of steps and setting	Should be programmed to multiple number of steps
Display	Real-time display of RPM
Substrate Holder Size	At least one and half inch diameter

Spin coater should come with vacuum pump. It should have the capability to handle polymeric (bio as well as synthetic polymer) solutions in organic solvents.

The quoted system should be certified as complete for carrying out the following types of experiments and any necessary accessories must also be included in the quotation:

- To prepare thin films of polymer/fullerene and polymer/inorganic-nanomaterial mixtures.
- To prepare spin coated fluorophore labeled DNA or protein samples for single molecule FRET study.

Three year on-site extended warranty on all parts.

Annual Maintenance Contract may be quoted as optional

Annexure-10

Item No. 10: Ozone Generator with Oxygen Concentrator

Qty. 01 No.

Specifications:

Ozone Generator Specifications:

- Capacity: 10gm/hour Ozone Output or more
- In-built Variable Ozone Control
- Power Supply: 220V Ac Single phase
- Frequency: 50Hz
- Principle Of Operation: High Frequency, Corona Discharge
- Dimensions: Approximately (Length x Width x Height: 300 mm x 260 mm x 480 mm)
- Weight: Approximately 7 Kgs

Safety Systems:

- Cabinet: Glass Reinforced Polyester (GRP) (non-corrosive)
- Maximum Feed Gas Inlet Pressure: 15 psi
- Flow Meter: 0.5-14 LPM with Control Valve
- Ozone Status Indication Lamp: Yes
- Safety Door Interlock : Yes

Utility Connections:

- Oxygen Input : One Touch Fitting OD 8mm
- Ozone Output : SS Nipple OD 8mm

Oxygen Concentrator:

- Capacity: 5 lpm Oxygen Output or more
- In-built Variable Oxygen Flow Control
- Power Supply: 220V Ac Single phase
- Frequency: 50Hz
- Safety Alarm: Power failure, high and low pressure, temperature, low concentration (with oxygen monitor)
- Power consumption: 3000 Watts or lower

Additional Accessories:

- Stainless Steel Stand
- Silicon Tube ID-4mm-OD-7mm for ozone outlet 10 – 20 meters
- Polyurethane Tube ID- 4mm-OD-6mm oxygen inlet 5 – 10 meters
- Diffuser Air Stone - Size 15x25mm – 2 Nos, Diffuser Air Stone - Size 20x45mm – 2 Nos

Three year on-site extended warranty on all parts.

Annual Maintenance Contract may be quoted as optional