



**Department of Biotechnology  
KAKATIYA UNIVERSITY  
Warangal-506 009**

**Tender for purchase of scientific equipment in Biotechnology  
Project of DBT**

**SCHEDULE FOR PURCHASE OF EQUIPMENT**

Please quote the lowest rates for the items listed below. The sealed quotations should reach to “**The Head, Department of Biotechnology, Kakatiya University, Warangal - 506009**” on or before **21-01-2015** at **5.00 p.m.** The University will not be responsible for any postal or other delay in the delivery of tenders.

The tender is subjected to the following conditions:

1. The bidder has to quote basic price. The prices should be for destination. Sales tax, Insurance, Customs and import duties if any, packing and forwarding charges if any, freight charges, any other taxes and charges should be quoted in terms of percentage on basic cost or fixed amount. Any vague statements such as ‘Etcetera (etc.)’ are not accepted.
2. The payment will be made within a reasonable time after the receipt of goods in good condition and successful installation and demonstration.
3. The company invoice with all supported vouchers should be submitted.
4. Items of rate contract, if any, together with supporting documents should be furnished.
5. The equipment should comply with the description, particulars and specifications supplied by the institution and the specifications offered by the bidder, which are accepted by the institution. Any deviations are liable for rejection of the tender (or) rejection of the equipment even after supply.
6. The period of delivery from the date of placement of order should be clearly mentioned.
7. The time of installation should be clearly mentioned and any delays on the part of suppliers for supplying equipment and installation and demonstration will be penalized.
8. Copies of the manufacturers test report and quality control cell clearance report should be made available along with equipment when it is supplied.
9. The quotation must accompany the list of reputed organizations, laboratories and educational institutions having at least 5 years standing for which the equipment is supplied.
10. Performance certificates about the performance of the similar type of equipments from the heads of at least three reputed organizations should be submitted along with the tender.
11. The companies must be ready to demonstrate the equipment in front of a Purchase/Expert committee at the Kakatiya University, Warangal at their own cost if required. The decision of Purchase/Expert committee is final.
12. It is not binding on the institution to accept the lowest of the tenders.
13. The institution reserves the right to place order for individual items with different tenders. The quantities indicated herein can be modified without any intimation. The University reserves the right to differ the purchase of any item/all items without any intimation.

14. All the tenders must be sent in registered post, acknowledgement due. The University will not be responsible for any postal delay or loss of tenders.
15. The purchaser will not pay separately for transit insurance and the supplier will be responsible till entire items/equipment contracted for are delivered and installed in good condition at various destinations. The list of which will be provided by the University.
16. If the equipment delivered at site is rejected, the University is not responsible for paying any charges and the supplier is solely responsible for removing the equipment. If such equipment is not removed from the site within a period of two weeks, the University reserves the right to remove it from the site and the risk has to be borne by the supplier. The institution reserves the right to recover handling and storing charges in case of such event.
17. In the case of a dispute between the institution and supplier, the dispute shall be referred to Indian arbitration. Venue of arbitration shall be at Warangal.
18. The supplier has to give a guarantee for the equipment and its performance as per specifications for a minimum period of Thirty six months or the duration agreed upon by both the parties, from the date of installation and commission. If during the above said period, it is found that the performance is not up to the mark, the decision of the purchaser in that behalf is final and is binding on the supplier. The supplier has to rectify / replace such defective equipment at his own cost. Otherwise suppliers have to pay compensation.
19. The supplier shall provide servicing facilities throughout the warranty period by trained people at his own cost.
20. The tenders should be valid for acceptance up to a period of 6 months.
21. The quotation with overriding condition will be summarily rejected.
22. Only those firms should respond who are the manufacturers or authorized dealers. A certificate to this effect duly signed by the manufacturer should be attached by tenderer(s).
23. Bidder should enclose with the bid, income tax and commercial/sales tax clearance certificates issued by competent authorities for the last financial year for which the assessment exercise has been completed by the relevant tax authorities.
24. The tenders should be addressed to **The Head, Department of Biotechnology, Kakatiya University, Warangal-506009.**
25. The envelope must be super-scribed with Group and Item Code for which quotations are being submitted.
26. Separate tender for each Group has to be submitted.

**BT/PR7174/PBD/16/1020/2013, Dated 9<sup>th</sup> October, 2014.**

## **I. POLYHOUSE: STRUCTURE – TECHNICAL SPECIFICATION**

Controlled Poly house:

8.00 Fix vent without roof curtain

Dimensions of Greenhouse:

1. Structure : Hot Dip Galvanized sqTubular Structure.
2. Area : 28 X 90
3. Bay size : 28 x 90.

4. Gutter Height : 4.40 to 4.50 mtrs.
5. Gutter Slope : Appropriate - be provided in civil structural work.
6. Apron Height : 1.2 to 1.5 mtr on all four sides with GI fixing and bottom of the apron to be embedded in soil
7. Curtain, Insect net : Manually openable, roll-up curtains up to 2 mtr on all Side ventilation & curtain four sides with handles. Appropriate sized insect net / Member along four sides Shading net (50 %) inside the curtain with paper Fixing mechanism.
8. Ridge Height : 6.4 to 6.5 mtr with suitably overlapping open vent of 0.90 To 1.05 mtr to avoid rain showers entering into the Poly house & to ensure 10 to 12 % top ventilation.
9. Columns : 76 x 76 mm x 2.0 mm thick Galvanized Pipe.
10. Trusses : Bottoms 50x50 mm x 2.0 mm thick G.I. Pipe. Top chords and truss members 42x42 mm X 2.00 mm Thick G.I. Pipe. Bracings 40mmx40mm x 2.00 mm thick G.I. Pipe. Structural members to be with welding.
11. Purlins : 40x40 mm x 2.00 mm thick G.I. SqPipe.
12. Hockey & hockey : 50x50. x 2.0 mm thick G.I. SqPipe resp.
13. Foundation : Depth below the ground 3' and above the ground 4' suitably altered depending Up on ground strata / level so as to ensure safety and Stability of the structure even under extreme wind Conditions. Columns are fitted over ground "Inserts" and bolted to insert pipe of 76x76 x 2.0 mm Thick G.I. SqPipe. PCC of 1: 2: 4 of 40 mm & filling the pit with 1: 2: 4 Concrete hand mixed with 53 grade cement.

## **II. Deep -86 Freezer**

### **Technical Specifications:**

- The freezer must be constructed using 1" thick vacuum panel insulation in conjunction with environmentally-friendly water blown foam
- Door Gasket must provide 7 independent insulation zones along with 4 points of contact to ensure sample security.
- Freezer shall be painted with high-impact, scratch resistant powder coat finished interior and exterior to ensure long term viability and maximum interior temperature uniformity.

- The perimeter heater to reduce condensation shall be on the door side not on the cabinet size to limit heat introduction into the sample storage area.
- The thermal break shall be made of plastic to limit heat leakage into the cabinet
- Door latch allows one-handed opening and closing. Handle must include door key lock as well as padlock provision for added security.
- Freezer shall have four internal storage compartments with polystyrene insulated inner doors to ensure sample security. Inner doors should have no latches or external magnets and must be removable for easy cleaning without the use of tools.
- Freezer shall have a heated pressure equalization port allows rapid re-entry to cabinet.
- Freezer shall have two, 1 inch access ports as standard
- Freezer shall have a RS485 output, Dry Contacts and 4-20mA output for remote monitoring purposes
- Freezer the door must open at least 180 degrees for easy sample access.
- Freezers should have an Approx capacity of 548Liters ( 40,000 2ml Vials )
- Interior Dimensions HxWxD inches. 51.23 x 23.13 x 28.29, exterior Dimensions HxWxD inches. 78.0 x 32.4 x 37.6
- Freezer shall allow for set-point security control that blocks specific users from changing freezer Set point or alarms through the use of a user name and password control. Unit shall allow for upto 150 users.
- Freezer shall have an energy savings operation mode that can be activated by the user without affecting power to the freezer.
- Freezer shall have a high performance operating mode that can be activated by the user without loss of power to the freezer.
- Freezer shall have an on-board data logger that allows for a minimum of 3G of data storage
- Freezer shall record all door openings and log the time the door was open and door was closed.
- Data must be available from the display for a minimum of 10 days. Data must also be downloadable via a USB port.
- Power management system shall show incoming line voltage indicate low or high line voltage and provide voltage correction of up to +/- 10% of rating. Line voltage should be logged for a period of up to 15 years and be downloadable via a USB port.
- Freezer shall control temperature to within an average peak variation from set point of  $+5.6^{\circ}\text{C}$  /-  $6.4^{\circ}\text{C}$  at a  $-80^{\circ}\text{C}$  set point in an empty freezer. Supplier must provide test data verify freezer Performance.
- Empty freezer shall recover from door opening to  $-75^{\circ}\text{C}$  set point in under 39 minutes. Supplier must provide test data verify freezer performance.
- Empty freezer should not warm to  $-50^{\circ}\text{C}$  from  $-80^{\circ}\text{C}$  set point in under 200 minutes during a power failure in a  $25^{\circ}\text{C}$  room

- Freezer shall use only CFC-Free, commercially available refrigerants are used:R404a in First Stage; R508b/R290 in the Second Stage.
- Freezer refrigeration system shall incorporate a brazed plate heat exchanger. Heat exchanger shall be placed in a thermal box in the deck of the freezer to optimize freezer storage capacity.
- Induction brazing shall be used on refrigeration connections to minimize leaks
- Refrigeration system shall contain a liquid line/suction line heat exchanger to ensure freezer temperature stability.
- Freezer must be built to and contain the registration mark for UL, CUL, and CE standards for safety and performance.
- Freezer must be listed as a class 1 FDA medical device
- Should be quoted along with the suitable stabilizer.

### III. Blotting Units with Hybridization Oven:

#### Specifications

**Horizontal electrophoresis :** Should have Low buffer consumption, Should be Single molded tank, Two tray options should available, Easy sample loading, Should have Great indications for gel making and running, No tape, clamps or springs needed

<b>Unit Dimension (W x L x H)</b>	220 x 125 x 90mm
<b>Gel Dimension (W x L)</b>	100 x 70mm, 100 x 100mm
<b>Maximum Sample</b>	50 for 100 x 70mm Tray (2 x 25 sample combs), 100 for 100 x 100mm Tray (4 x 25 sample combs)
<b>Buffer Volume</b>	300ml
<b>Construction</b>	Injection molded construction, Durable, leak proof environment for complete safety and long life
<b>Cassette Type Electrode</b>	Inexpensive, easy to replace, Made of 99.99% corrosion resistant pure platinum
<b>Electrical safety</b>	Lid can only be fastened in one way, On removal, power is disconnected from buffer chamber
<b>Rapid Casting Gel</b>	Use casting dams

**Power pack:** 300V maximum voltage, 700mA maximum current, 150W maximum power, Four pairs of outlet terminals, Timer with alarm function, Constant voltage or constant current operation, Advanced safety device design, Compact size, Stackable case, Wide applications for DNA, RNA and protein electrophoresis

<b>Output Voltage / Inc</b>	2 - 300V / 1V
<b>Output Current / Inc</b>	1 - 700mA/1mA
<b>Controller</b>	Microprocessor controller
<b>Timer</b>	1~999 minutes with alarm, continuous, should have pause function
<b>Pause Function</b>	Yes
<b>Safety Device</b>	No load detection, Leakage detection, Sudden load change detection
	Over temperature protection, overload detection, shrouded plug and sockets
<b>Crossover</b>	Yes
<b>Construction Material</b>	Flame retardant ABS plates and aluminum

**Hybridization shaking oven, orbital** : Should have good front door design (or panel) and touch screen interface. With excellent temperature accuracy and uniformity, users should be able to perform temperature controlled mixing or reaction precisely, unit should be equipped with built-in rotisserie function with Orbital shaker exhibiting both clockwise and anti-clockwise shaking motion. System should be ideal for nucleic acid hybridization and incubation such as Southern, Northern, and Western blot, should have : **3.5"** large TFT display, 32-bits microprocessor controller, **Touch screen** & graphical control interface, **Built-in Rotisserie** function and speed 5 – 100RPM / 1RPM, **Orbital** shaking motion speed 0-200RPM, User temperature calibration, Broad temperature control range, 1-9999min **Timer** with alarm function or continuous operation, **Safety device** while system malfunction, Safety door switch device

Temperature Control Range	Ambient +5°C to 85°C
Temperature Increment	0.1°C
Temperature Uniformity	± 0.2°C at 37°C
Temperature Accuracy	± 0.2°C at 37°C
User Temperature calib.	Yes
Inner Chamber Dimension	13.39" x 8.86" x 10.24" (340 x 225 x 260 mm)
Inner Chamber Volume	Approx. 5.28 gal:1 (20 L)

Platform	10.63" x 7.87" (270 x 200 mm)
Data Logging	RS-232
Construction	Painted iron metal with ABS front door
Safety Device	Safety door switch, Thermal safety switch, Auto shut off upon fan failure and Power failure auto recovery

**Semi Dry Mini :** should have rapid transfer times for DNA, RNA and protein blotting, typically 15 to 30 minutes. It should be used for all types of blotting, including western, southern and northern blots. It should have an uncomplicated buffer and set up procedure and is compatible with gel thickness from 0.25 up to 10mm. The unit should be compatible with its respective vertical electrophoresis system. Should require very low buffer volume, typically only a few milliliters of buffer per transfer. A screw down lid secures the blot sandwich and allows complete control of pressure ensuring even transfer. The electrodes, comprising of a platinum coated anode and stainless steel cathode, will exhibit practically no corrosion and provides many years of trouble free use. Uniform heat dispersion across the blot sandwich ensures stable transfer times and prevents heat induced sample loss or transfer distortions. It should allow viewing of the blot sandwich to ensure correct positioning and transfer is occurring correctly. Electrode plates are fully separated to prevent arcing or damage.

Unit dimensions WxLxH should be 160 x 160 x 70mm, gel dimensions 100 x100mm, max sample : 1 Blot 80x85mm with buffer volume of 5ml , construction should be Durable, leak proof environment for complete safety and long life.

-----\*\*\*\*\*-----