

File no: MZU/DBT/BPS-U-Excel 2017

Dated the 13th April 2017

**NOTICE INVITING QUOTATIONS
(TWO BIDS)**

**CALL OF QUOTATIONS FOR SUPPLY & INSTALLATION OF SCIENTIFIC
EQUIPMENTS FOR THE UNIT OF EXCELLENCE PROJECT AT DEPARTMENT OF
BIOTECHNOLOGY, MIZORAM UNIVERSITY, TANHRIL, AIZAWL**

The Principal Investigator, DBT's U-Excel program for NE, Department of Biotechnology, Mizoram University, Mizoram 796004 invites quotations for supply & Installation of Equipment as per details at **ANNEXURE-I, in Two Bids** to reach the undersigned under the Department of Biotechnology, New Delhi funded project under Unit of excellence scheme for North East.

1. Last Date & Time for Submission : **05.05.2017 (1:00 p.m.)**
2. Date/Time for Opening of Technical and financial Bids : **05.05.2017 (1:30 p.m.)**
3. Date of notifying the Technically Qualified bidders : **08.05.2017.**
4. Venue of Bid Opening at Department of Biotechnology, MIZORAM UNIVERSITY, AIZAWL

BID INSTRUCTIONS:

- Quotations shall be submitted in **TWO Bids: i) Technical Bids ii) Financial Bids**; which will be submitted in 2 separate envelopes, super-scribing the nomenclature of bids, with name & address of firms. And these 2 envelopes shall be placed inside a single sealed envelope, and must be prominently super scribed:
- **Rates:** Rates quoted in the **Price Bid** should be **on DOOR DELIVERY Mizoram University AND should be quoted in INR.**

**QUOTATION FOR SUPPLY AND INSTALLATION OF SCIENTIFIC EQUIPMENTS
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Other terms and conditions:

1. **Validity of Quotation:** Quoted rates must be valid for **90 days** from the date of quotation.
2. **Warranty:** warranty is been stated along with the specifications of the instruments.
3. **Literature a must:** All the quotations must be supported by the printed technical leaflet / literature and the specifications mentioned in the quotation must be reflected / supported

by such printed technical leaflet/literature. The model and specifications quoted should **invariably be highlighted** in the leaflet / literature for easy reference. **If supporting documents are not enclosed whether wholly or partly, it will be summarily rejected.**

4. **After Sales Service:** Vendors should clearly state the available nearest after sales service facilities in the region, without which their offers will be rejected.
5. **Dealership/Proprietary Certificate:** Dealers or Agents quoting on behalf of Manufacturer / Distributor must enclose valid dealership certificate.
6. **A detailed training should be given on site to the research scholars about the handling and operation of instrument by application specialist scientist/ Installations should be done by a application scientist not by a sales/technical person.**
7. Please refer each instrument for the details about the training period and other specific terms and conditions.
8. **Payment:** 100% payment within 30 (thirty) days from the date of satisfactory installation and Training given by the specialist.
9. **Enquiry during the course of evaluation not allowed:** No enquiry from the bidder(s) shall be entertained during the course of evaluation of the tender till final decision is conveyed to the successful bidder(s). However, the chairman of Purchase Committee may make enquiries/seek clarification from the bidders. In such a case, the bidder must extend full co-operation. The bidders may also **be asked to arrange demonstration of the offered items, in a short period of notice.**

Acceptance& Rejection of the quotation: The acceptance of the quotation will rest solely with the Principal Investigator, U-Excel Project, Department of Biotechnology, Mizoram University, who in the interest of the smooth running of the project/ to meet the project objectives on time is ***not bound to accept the lowest quotation and reserves the right to reject all the quotations received without assigning any reasons.***

Sd/

Principal Investigator-U-Excel project
Department of Biotechnology
Aizawl, Mizoram University
Mizoram 796004, India

ANNEXURE –I
TECHNICAL SPECIFICATIONS FOR SCIENTIFIC EQUIPMENTS

S.No	Technical Specifications	Qty.
1	<p data-bbox="381 401 1211 434">Class-II Biological safety cabinets with 100% exhaust facility</p> <ul style="list-style-type: none"> <li data-bbox="393 478 1338 548">• The System should work under negative pressure and 100% of the air is exhausted outside of the building <li data-bbox="393 554 1175 588">• System should have a working opening of minimum 4-6ft. <li data-bbox="393 594 1338 699">• The cabinet must conform to the following regulations and standards: NSF International – Standard 49 for <i>Biohazard Cabinetry</i> and Electromagnetic Compatibility Directive: (230V, 50Hz models only). <li data-bbox="393 705 1338 810">• The down flow motor must automatically adjust the airflow speed without the use of a damper to ensure continuous safe working conditions, even without maintenance adjustments. <li data-bbox="393 816 1338 921">• The microprocessor must display the inflow and down flow air velocities in real-time on an LED display to ensure the user knows whether or not the cabinet is working under safe operating conditions. <li data-bbox="393 928 1338 1073">• The front window must be a 8-10” sash opening and be made of ¼” tempered safety glass to ensure no sharp edges to the glass in case of accidental breakage. The front window must have no obstruction or protrusion that will interfere with user visibility. <li data-bbox="393 1079 1338 1184">• The front of the cabinet must be angled in such a way to help minimize glare on the window to the user, and to ensure that the user’s posture is comfortable during a working session. <li data-bbox="393 1190 1338 1257">• The cabinet noise level must be less than 65 dB(A) for a 4-6 foot cabinet <li data-bbox="393 1264 1338 1369">• The microprocessor controller must be convenient located on a display inside the cabinet chamber so that it is easy to see from a seated working position in front of the cabinet. <li data-bbox="393 1375 1338 1442">• The biological safety cabinet should preferably use of a brushless DC motor for energy saving. <li data-bbox="393 1449 1338 1596">• In order to provide maximum effectiveness, efficiency and safety to laboratory personnel, UV light must be programmable to allow for specific exposure times from 0 to 24 hours. The UV light should automatic shut off to enhance life of the UV light bulbs. <li data-bbox="393 1602 1338 1749">• The cabinet must be outfitted with two electrical duplex outlets. The duplex outlets must be located on both sides of the cabinet interior rear wall (right and left) for easy access by the user without interfering with the user working process. <li data-bbox="393 1755 1062 1789">• The ducting & pumps are the scope of the bidder. <li data-bbox="393 1795 1143 1829">• Minimum 2 years warranty from the time of installation <li data-bbox="393 1835 1338 1902">• Price should be quoted inclusive of all local expanses involved while fitting the facility at Department. 	01

2	<p data-bbox="402 268 1333 373">ANALYTICAL CUM SEMI- PREPARATIVE CUM PREPARATIVE HPLC SYSTEM WITH PHOTO DIODE ARRAY DETECTOR</p> <p data-bbox="402 415 773 447"><u>HPLC Pump - Dual pump</u></p> <ul data-bbox="431 457 1333 1346" style="list-style-type: none"> • 2 Nos. of integrated HPLC pumps with dual reciprocating pistons and non circular gear driven, free standing pump should be provided to work in Isocratic, Binary Gradient and semi preparative mode. The pumps should be able to work on fully analytical & semi-preparative mode separately with different heads for Analytical & Semi-preparative applications. • Programmable flow range: 0.000 to more than 22.000 ml/min per pump with 0.01 ml/min increment or better for all kinds of Semi-Preparative application. • The system should be capable of delivering precise volumes of mobile phase with minimum 48 step/μl or better. • Flow Precision: 0.1% RSD or better. • Maximum Pressure: 6000 psi throughout entire Flow rate. • The system delay volume should be lesser than 200 μl for high sensitivity. • Flow accuracy : + 1% or better • The system should be capable to withstand the retention time variations of less than 0.1% for highly reproducible peak performance. • Should have the capability to operate in at least 11 or more various gradient curve mode including Liner, Step, concave, convex. Exponential etc. • System should be provided with compatible desktop computer preferably HP make. <p data-bbox="402 1356 630 1388"><u>Manual Injector</u></p> <ul data-bbox="475 1398 1333 1461" style="list-style-type: none"> • Should be Rheodyne injector having dual injector facility of Analytical & Semi-Preparative mode separately in the same panel. <p data-bbox="383 1472 1333 1535"><u>Photo Diode Array Detector with Analytical & Semi-Preparative Flow Cell</u></p> <ul data-bbox="431 1545 1333 1875" style="list-style-type: none"> • Wavelength range : 150-800 nm, repeatability :± 0.1 nm, Accuracy: ± 1 nm. • Optical resolution : 1.2 nm • Date Acquisition : Up to 80 Hz • Light Source: Deuterium arc lamp ; Lamp should be of 2000 hrs warranty. • Flow cell Design: Taper Slit only. • Cell Volume:8.4 ul for analytical cell & 16.3 ul for semi-preparative cell. 	01

- Spectral Resolution/Optical Band pass: 1.2nm per photodiode with a total of 512 photodiodes, digital and optical (3D mode)
- Operating mode : Both 2D and 3D
- Digital Resolution: 1.2nm – 600nm (2D mode)
- Sensitivity Setting Range: 0.0001 – 2.0000 AUFS.

Software

- The software should be original and authentic
- The software should be quoted with a relational secured oracle data base, independent of operating system and an interface for the software to the database for strong integrity and security of data.
- All Meta data should be automatically managed, linked and versioned along with customized reporting format.
- The software should be able to show the capability of the system to operate in at least 11 or more various gradient curve mode including Liner, Step, concave, convex. exponential etc. along with Apex integration & Gaussian skimming.
- Audit Trail ID Should be available with Audit Summary report which should be available at glance.
- Software should have fully interactive system suitability & Pass/Fail criteria for earlier decision making.
- Versioning of Results generated should be available.
- The raw data should be available for processing at any time after modification of ‘n’ number of times.
- Should have option for versatility for multitasking without multiple software packages
- Should have option for data integrity along with advanced security measures
- The software should have option for maintain security and regulatory compliance

Columns & Accessories

- Preparative Column C18 with Optimum Bed Density feature (250 x 10 mm x 5µ) pH range - 1-14: 1 No.
- Preparative Column C8 with Optimum Bed Density feature (250 x 10 mm x 5µ) pH range - 1-14: 1 No.

Warranty: Should have minimum 2 years of warranty from the date of installation

Method development Training:

A thorough Demonstration & Detailed training for at least for 7 days on Instrument & Application has to be provided by the vendors on site.

3	<p>Shaking Incubator</p> <ul style="list-style-type: none"> • Stackable Shakers, designed to be stacked three or more on the floor without sacrificing performance. • Capacity: Twelve 2L Erlenmeyer flasks or more • Temperature Range : 10°C below ambient to 60°C with accuracy not less than ±0.15°C: Ambient temperature maintained in Laboratory is about 25 degree Celsius. • Speed Range : 15-500; ±1 rpm • Forced laminar airflow through the HEPA filter to provide excellent temperature uniformity & to reduces risk of cross-contamination • It should feature a slide out platform that provides convenient 100% sample access. • Triple counterbalanced mechanism provides optimum handling of full or unbalanced loads, regardless of flask placement • Cool-running, brushless, 1/3hp DC motor ensures continuous maintenance-free operation • Chamber should made of 304 grade stainless-steel chamber with coved corners, built-in drained and it has xenon light with switch. • It should have tempered thermal pane window • It should have magnetic door gasket for tight seal • It should display both the Run and set-points simultaneously in its LCD display. • It must tracks total accumulated time on motor and drive systems • Audible/visual over- and under-temperature tracking alarms ensure product protection • Nonvolatile memory saves settings during a power outage and automatically restarts the unit after power is restored • Timer: Programmable from 1 minute to 199 hours 59 minutes or for continuous operation • Sound level should not exceed 64dB or less • Should be supplied with 125ml, 250ml, 500ml, 1L, 2L flask & adhesive mates. • It should have minimum of 2 year of warranty on the machine & life time warranty on the drive of the system. 	01
4	<p>Rotary Evaporator with chiller:</p> <ul style="list-style-type: none"> • Rotation Speed ranges from 20- 280 rpm. Vertical condenser. • Heating bath range: 95 deg C or more, the bath has BOTH SET AND ACTUAL digital temperature display Simultaneously as a standard feature. • Two integrated handles facilitate carry, re-filling and emptying the heating bath. • System equipped with an action jack lift for manual lifting of the 	

evaporating flask.

- Lift extension allows use of bump traps & glass extenders up to 100 mm, Multifunctional Combi-clip for easy fixing and removal of vapor duct and evaporation flask
- Cooling surface area should be 1460 cm Square which ensures strong cooling capacity & good sample recovery.
- The bath volume is 4-5 ltr.
- Evaporation flask from 50ml- 4000ml can be used on the same joint adapter without additional connections.
- Sealing system made of glass which is resistant to chemicals for longer life.
- Single sealing system for all glass assemblies.
- All glass components are stress relieved and made of Borosilicate glass.

VACUUM CONTROLLER

- Adjusts and keeps pressure stable within hysteresis.
- Set and actual value of pressure are shown simultaneously on display.
- Automatic On/Off-functions for vacuum pump & chiller, control for vacuum pump.
- Measuring range 1400- 0 mbar.
- Control range 1100- 1
- Integrated aeration valve and precision pressure sensor.
- Timer function for process termination after pre-specified time

SPECIFICATION FOR VACUUM PUMP

- Chemically resistant PTFE diaphragm vacuum pump with a space saving design. It covers the essential needs in vacuum generation. On/off and possible to regulate by the digital controlling Interface
- Single stroke Speed control vacuum pump with DC, brushless motor.
- ECO2-mode makes the pump consumes less electrical power and works under reduced stress.
- Vacuum flow rate - 1.5 m³ /h, Ultimate vacuum - <10mbar, Number of stages - 2
- Sophisticated soundproofing with enclosed housing which minimizes noise and vibrations

SPECIFICATION FOR chiller

- The Recirculating Chiller, 230V 50/60Hz, optimally suited for use with two Rotavapor systems.
- It allows an efficient distillation independent of tap water, Temperature range: -10 °C to + 25 °C, Working Temperature : + 10 °C to + 25 °C, Cooling capacity: 500W at 15°C, Dimensions: approx 280x500x400 mm, Flow Rate : 2.5 L/min, Tank Volume : 3-4 L, Ambient Temp : 5-35 °C

Warranty: Should have minimum 2 years of warranty from the date of installation

5	<p>Fermenter</p> <ul style="list-style-type: none"> • Volume ranges from 7-10 liters • Agitation up to 1000 rpm • Oil free air compressor with two rotameters • Sensors for temperature, pH and foam control electrodes should be attached outside the vessel • Should be digitally monitored/controlled • Should have a self autoclable/steam sterilizable • Temperature controller to maintain the temperature of the vessel from 25 degrees to 60 degrees. 	01
6	<p>Ultrafiltration Unit</p> <ul style="list-style-type: none"> • Tangential flow filtration system with three cut of membranes (3 kDa, 10kDa and 30kDa) • Membrane area should be 0.084 m² or more • Typical flow rate: 3-5L/hr for the starting volume sample ranges from 0.5L to 15 L. • Minimum concentrated volume: 100-150 mL • Concentrate and desalt the proteins and peptides before going for column chromatography 	01
7	<p>Bio-safety cabinet</p> <ul style="list-style-type: none"> • Class II Biosafety Cabinet Type A2 design. • Should include a germicidal UV lamp, set of arm rest, an electrical outlet and a support stand provided with leveling bases. • Size 4-6 feet width and the front window must have 8/ 10" sash opening with working surface and drain Pan of stainless steel 304. • Motor should be DUAL DC & must automatically adjust the airflow speed (balancing inflow and down flow) without the use of a damper to ensure continuous safe working conditions. • The microprocessor based Cabinet should use differential pressure sensor to display the inflow and down flow air velocities in real-time on an LED/LCD display. • Should have port for vacuum tubing and cables on the sides. • HEPA/ULPA Filter should be 99.995% MPPS(Most Penetrating Particle Size) • UV light must be programmable to allow for specific exposure times from 0 to 24 hours. Lightening power should >1100 Lux (100fc);cabinet noise level must be less than 65 dB(A) • Cabinet should be NSF (National Sanitation Foundation) certified and certificate of the quoted model should be attached.(NO DEVIATION WILL BE ACCEPTED) 	01

	<ul style="list-style-type: none"> • Power Consumption in Normal mode :200W ±10% • A minimum of 3 years warranty 	
8	<p>UPS-7.5 KVA with 4hrs backup</p> <ul style="list-style-type: none"> • INPUT - (230V+/-20V) AC in with frequency range(47-53)Hz. • OUTPUT- 230V+/-1% AC out with frequency 50Hz+/- 0,1Hz • UPS should come with inbuilt GALVANIC ISOLATION TRANSFORMER. • Which should come with inbuilt LED and LCD display to monitor input and output voltage and frequency? • UPS system must have short circuit protection, over load protection, input and output voltage high protection circuit and DC bus high trip facility. • Each input and output should come with inbuilt protection system with HRC fuse link. • System should come with inbuilt BY-PASS switch. • Should come with battery stacking racks. 	01