

**INDIRA GANDHI NATIONAL TRIBAL UNIVERSITY,
Amarkantak, 484887, Madhya Pradesh, India**



**Open Tender Enquiry for the procurement various Scientific
Instruments under Central Instrumentation Facility**

File No. IGNTU/R&D/2017/

Date: 02/06/2017

Last date of Tender submission: June 30, 2017; 5.0 pm

Tender Fee: Rs. 1000 (Non-refundable)/tender

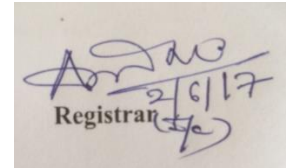
EMD: As specified Item-wise in the Annexure 1. Separate EMD must be deposited for each quoted item.

Reputed firms/manufacturers/dealers/suppliers with minimum three years of experience of supplying Scientific Instruments to Govt. sector/PSUs/Educational Institutions/Private Institutions of repute are invited for the submission of tender(s) for various Scientific Instruments (as detailed in the Annexure 1) in Two-bid System (Technical and Financial Bids) on or before June 30, 2017, 5.0 pm. Both technical and financial bids must be submitted in separate sealed envelopes. The cover of the envelope should specify the technical/financial bids with subject as "Quotation for CIF".

The tender documents in sealed envelope must be reached to **The Head, Department of Biotechnology, Indira Gandhi National Tribal University, Amarkantak, 484886, Madhya Pradesh, India** on or before June 30, 2017 by Speed/Registered/Couriers Posts only. The Tender

document submitted without tender fee and EMD, as specified, will be not be considered and hence rejected. Incomplete tender and tender received after the due date and time will not be accepted.

Format for the submission of the tender document in appended below or may be downloaded from the university website (www.igntu.ac.in/www.igntu.nic.in). Non-Refundable tender fee (Rs. 1000) for each proposal and EMD for each item must be remitted to university through online in favour of “Indira Gandhi National Tribal University, payable at Central Bank of India, Amarkantak (A/C No. 3262189064, IFSC: CBIN0284695) or State Bank of India, Amarkantak (A/C. 30429162087, IFSC: SBIN0004674).

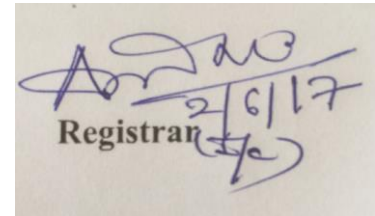


A handwritten signature in blue ink is written over a rectangular stamp. The stamp contains the word "Registrar" in a bold, sans-serif font. To the right of the signature, the date "2/6/17" is handwritten in blue ink.

General Terms and Conditions

1. The delivery of the instruments must be made on FOR basis to the Indira National Tribal University, Amarkantak, MP. Rate should be quoted inclusive of packaging, forwarding, postage and transportation charges, etc.
2. The freight, insurance charges, if any, will not be borne by the IGNTU. Similarly, shortage, pilferage in transit will be the sole responsibility of the supplier. The defective supply will have to be replaced by the supplier within 07 days without freight/transport or any other charge.
3. The quantity of the required equipment may be increased or decreased as per the current requirement and supplied as per quoted rate and other terms and conditions shall also remain same.
4. Taxes and other government levies will be paid extra as applicable.
5. The delivery of the goods will be taken the risk and cost of the supplier only.
6. Venders must state that firm(s) have been currently banned/blacklisted by any ministry/department of central or state governments. Please submit an affidavit to this effect.
7. The supply of the instruments will have to be completed within 30 days from date of issue of work order. The liquidated charges @0.5% per week shall be imposed if supply made after expiry of delivery period subject to maximum 5% of the total value of goods/contract value.
8. The firm will supply the material as per work order and short supply of material will not be accepted in any circumstances.
9. No revision in rate (on higher side) will be accepted at any stage.
10. No payment will be made for unsatisfactory/damaged supply of instruments.
11. The damaged or defected instruments must be replaced free of cost by the supplier immediately.
12. The firm shall not assign or sublet the work/job any part of it any other firm.
13. In case of discrepancy between unit price and total price, unit price shall prevail.
14. The quoted rate shall be valid for a period of six months from the execution of the date of award of work and repeat order may also be released to delivery of the more required items, if any. The term and condition including approved price shall remain same.

15. The payment will be after successful supply of the ordered quantity and quality of the materials at our end in good condition subject to production of the physical verification report of the user department/nominated committee.
16. No advance payment will be made at any stage.
17. The bidders shall submit the copy of valid PAN number and registration of firm along with the quotation.
18. The bills must be prepared/raised in the name of the Registrar, IGNTU, Amarkantak, MP.
19. In case of breach of any of the conditions above, the decision of the competent authority, IGNTU will final and binding.
20. IGNTU, Amarkantak reserves the right to cancel the rate/contract without assigning any reason thereof and no further correspondence shall be entertained, in this regard.
21. All items must be quoted with minimum 05 Years of on site warranty. For this no extra cost will be paid.
22. University reserves the right to cancel the procurement of any item(s), even after opening of technical/financial bids without assigning any reason.
23. If any legal dispute arise in connection with execution of the tender will be subject to the jurisdiction of the district court Anuppur, MP only.



Registrar
2/6/17

Tender Form: Open Tender Enquiry
(Separate sheet may be used)

Subject:

1	Tender Ref No.	
2	Details of EMD, if not applicable please specify	
3	Details of the tender fee (Rs. 2000)	
4	Name & Full address of the Firm & Year of Establishment	
5	Annual Turnover of the firm/company: Last three financial years (enclose documents in support of the claim)	
6	Whether the firm is registered under company Act 1985, if yes, enclose certified copy	
7	Certified copies of income tax	
8	TIN No:	
9	PAN No:	
10	State whether you have been currently banned/blacklisted by any govt agency. Submit an affidavit	
11	Instruments Quoted: details of the specification, features, etc with literature must be enclosed.	

Undertaking

1. I/We have gone through the terms & conditions as stipulated in the tender enquiry document and confirm to accept and abide with the same.
2. No other charges would be payable by the IGNTU, Amarkantak.
3. I/We undertake that the information given in this tender are true and correct in all respect and I/We hold the responsibility for the same.

Seal & Signature

Date:

Place:

Annexure 1

1	<p><u>Gas Chromatograph:</u> EMD: Rs. 100000.00</p> <ul style="list-style-type: none">• Latest Gas Chromatograph with Detectors & Injectors facility, future up gradation options to Mass Spectrometer <p>BASIC GC</p> <ul style="list-style-type: none">• The GC must feature an external color screen or through computer to provide easy accessibility to the GC and immediate interactions with it.• The built screen or the computer screen should be easy to view from all angles , with quick response.• It is to be capable of supporting multimedia files for maintenance and troubleshooting• The computer screen of the GC needs to provide all major data.• Smart and easy maintenance – Facility to access injectors and detectors with minimal effort using tool-free\ minimum usage of tools• The system needs to have the flexibility of the easy connect devices for changing detectors and injectors. <p>Oven:</p> <ul style="list-style-type: none">• The column oven should have an operating range of ambient to 450°• Heat-up time from 50°C to 450°C within 8 minutes• Cool-down time from 450°C to 50°C in less than 8 minutes• The oven temperature stability is to be within 0.1 °C/ every °C of actual temperature• Number of Ramps should be 20 or more• Heating Rate : up to 50°C/Min• The Split/Splitless injector is to be user-installable.• The injector should be capable to operate with capillary, wide bore and packed columns• The injector needs to be optimized, modular thermal profile for split and split less injection with a cold head.• Maximum Temperature: 400 °C• Instant Connect Flame Ionization Detector -1 No• Capillary column optimized compatible with 1/8" and 1/16" packed column• Flameout detection and automatic re-ignition• Sensitivity: >0.10 Coulombs/gC or better• Maximum Temperature: 450 °C in steps of 01 °C or better• DATA PROCESSING SOFTWARE With Computer & Printer:• software for GC SE with Validation and IQ/OQ/PQ documents for GC• Chromatography data system for control, acquisition, processing, & reporting software.• 32-bit\64 bit software design for Windows
---	---

	<ul style="list-style-type: none"> • Flexible Reporting as users desires for complete chromatography information Reporting. • Complete system control with user friendly help & system diagnostic. <p>Column:</p> <ul style="list-style-type: none"> • Suitable capillary columns for the analysis of various alcohols-2 Nos. • Accessories • Essential accessories/ startup kit with syringes, septum, ferrules, nuts, moisture, Spares and Consumables: Recommended spares and consumables for not less than two years for smooth operation of the system should be included in the offer. • Certification • An ISO/CE with quality certificates required • Manufacturer's authorization letter must be submitted. • Installation & Training • Installation at site must require with operation training and must provide factories or manufactures training facilities training at least two technical officers for analysis and hand some training. <p>Note : The above specifications are only representative and. All reputed top brands will be considered for technical evaluation.</p> <ul style="list-style-type: none"> • Computer Configuration: • Processor: Intel i5 2.06GHz or more • RAM :2GB, Hard Disk Drive: 320 GB • Monitor: 18.5" Flat TFT. DVD R/W. Combo -01 No • Key Board: Standard, Mouse: Optical, USB 2.0 Ports • 0.5KVA UPS (20 Minutes Back up) • Windows 7 Professional Licensed Software • HP Mono LaserJet (A-4 Size) P-1007 or equivalent at the time of delivery
2	<p><u>HPLC (High performance liquid chromatography)</u> EMD: Rs. 100000.00</p> <p>Ultra Fast HPLC system for analysis of Amino Acid, Drugs,Natural compounds, Toxins and mainly for semi volatiles</p> <p>The system should be upgradable easily in the future to LC-MS/MS High performance liquid chromatograph (HPLC)</p> <p>HPLC Pump :</p> <ul style="list-style-type: none"> • The HPLC Pump should be of latest industry technology. The system should be able to accommodate less than 10um particle sized column for faster analysis, high resolution and better peak separation than the conventional HPLC system. The system should have low solvent consumption, higher peak capacity and faster run time for a chromatographic run. <p>Quaternary Pump (2 or more solvents) with inbuilt degasser, with a flow rate of 0.1 -5 ml/min or better and pressure range of 6000 psi range or better for the entire flow rate range.</p> <ul style="list-style-type: none"> • Flow rate accuracy of $\pm 0.1\%$ or better and Flow precision of $< 0.1\%$ RSD or better and with built in 2 channel vacuum degasser. Solvent rack and solvent bottles (at least two) also to be quoted <p>Injector Auto sampler Column with Compartment</p>

Inbuilt Column Oven

- Column Temperature Range: 5 °C above ambient to 50° or closer
- Temperature Accuracy :0.1°C; Wavelength Accuracy : 0.1°C
- Nebulization : Suitable Flow design to assist better evaporation specially for the semi-volatiles.
- Digital Data Collection Rate (max.) 60 Hz or better.
- Evaporation Temperature Select: 25 °C or 60 °C or better
- Sensitivity : Equal or less than <5ng

Column Oven

Column Oven with temperature Range: 5° C to 80 ° C. - or higher. Column capacity: should hold 300mm column, total column capacity not less than 3 or more. Should have Column switching facility between different columns. Validation: hardware folder/protocol to be quoted.

Chromatography Software

Software : The software should be a strictly validated/original licensed copy software along with latest version computer/laser printer with original operating software should be quoted. All automated LC calculations facility should be available. Free up gradation of software during the period of 5 years. The system should be capable enough to programme at least 1-5 different Gradient curves or better .

Column:

C18, 5 um 4.6 x 250 mm Column- 2 Nos

C8, 5 um 4.6 x 250 mm Column-2 Nos

2.1mm×150mm Dimension,1.9um C18 UHPLC Column-1 No

2.1mm×150mm Dimension,1.9um Amino UHPLC Column-1 No

Accessories

Essential accessories/ startup kit with syringes, septum, ferrules, nuts, moisture, Spares and Consumables: Recommended spares and consumables for not less than two years for smooth operation of the system should be availed.

Ultra Pure N2 Generators with suitable air compressor for Uninterrupted, on demand supply of dry nitrogen from the atmosphere.

Stackable integration HPLC Systems with small portable design.

Certification

An ISO/CE with quality certificates required

Manufacture authorization letter must be submitted.

Installation & Training

Installation at site must require with operation training

Note : The above specifications are only representative and. All reputed top brands will be considered for technical evaluation

Computer Configuration

Processor: Intel i5 2.06GHz or more

RAM :2GB, Hard Disk Drive: 320 GB

Monitor: 18.5" Flat TFT. DVD R/W. Combo -01 No

Key Board: Standard, Mouse: Optical, USB 2.0 Ports: 4 Nos.

2KVA UPS (60Minutes Back up)

Windows 7 Professional Licensed Software

HP Colour LaserJet (A-4 Size)

	<p>OPTIONAL ATTACHMENTS PDA Detector Variable Wavelength UV- VIS Detector Spares & Consumables To suit complete working of the system.</p>
3	<p><u>BIOFERMENTOR</u> EMD: Rs. 100000.00</p> <ul style="list-style-type: none"> • Easy to calibrate temperature, pH, DO, Foam sensor in use of main control Screen • Easy control of external device by Fermentation controller • Intelligent self diagnostic system to maintain fermentation process from start to the end • Operation method touch screen controller and easy way compact design takes up only a small space. • Eight way microprocessor controller system using parallel communication software data logging, remote control, including integrated control. • Single Jacket/ Double Jacket and can be used to select the drive motor • Agitation, temp, pH, DO, ORP, O2, Antifoam, MFC, Feed pump, Gas Mixer and additional parameters such as analog signals and can be controlled through a variety • Feed function is linked to the Do Cascade and a culture of a variety of conditions that can be applied to the linked control program • 4 Gas signals available to end control signals directly 4 gas controller from main control system. • On PC or one multi board can monitor and manage all of data by network even each controller is scattered(1ch-6ch) • Vessel type- Single and double 500 ml, 14 L total vol STS 316L Top plate vessel, Borosilicate, glass autoclavable , pH, DO, foam level , pressure probe, addition port, Exhaust port, Baffles 316L, condenser • Aeration- flow rate: Rota meters 0-5 LPM ; Mass flow controller/ Mass flow manual option; Standard Ring Sparger/ micro spargaer ; 0.2 disposable Hydrophobic filter. • Agitation – Drive Direct Top Drive Servo Motor 200 W-400 W, BLDC Motor/ Single mechanical seal. Range 10-1500 RPM; Impellers – Rushton standard with fermentation. pitched blade standard with cell culture marine blade or spin filter • Temperature- Thermostat system 0-150 degree centigrade with +/- 0.1 degree centigrade accuracy, PT 100Ω, Probe heating and cooling PID control, built in heat , exchanger, automatic cooling water valve. • pH range / censor 0-14 pH +/- 0.01 Inpro 303D, Toledo Temp. Range 0-140degC, the max pressure 6bar

	<ul style="list-style-type: none"> • DO range of the Censor- 0-200% accuracy. Galvanic censor, oxygen censor, ORP range / censor; Measuring range- 100-1000 MB; Temperature range 0-140 degree centigrade, the maximum pressure 2.5 bar • Antifoam – range/censor conductivity 0-300kΩ • Power source – 110-220v, 50-60 Hz , single phase 500 W
4	<p><u>PHOTO SYNTHESIS ANALYSER</u> EMD: Rs. 100000.00 PORTABLE PHOTOSYNTHESIS SYSTEM WITH CHLOROPHYLL FLUORESCENCE SYSTEM</p> <p>Portable Gas Exchange with Fluorescence System for Simultaneous Measurement of Photosynthesis and Chlorophyll Fluorescence on same leaf area.</p> <p>Features</p> <ul style="list-style-type: none"> • Highly accurate 4-channel infrared gas analyzer • H₂O measurement : 0 to 75000 ppm • CO₂ measurement : 0 to 2000 ppm • LED light control (0 to 2000 μmol m⁻² s⁻¹ PAR) • Inbuilt Oxygen Sensor for recording actual Oxygen concentration during Photosynthesis/Fluorescence measurement. • Operated via an integrated PC with a large graphical color-display (well readable in direct sun-light). • Any external battery can be attached (Range 12V – 24V) <p>Technical Specifications:</p> <p>CO₂ Control : Integrated CO₂-control for the range 0 to 2000 ppm, (reserve CO₂ should be indicated)</p> <p>H₂O Control : Integrated H₂O control for the range 0 to nearly 100% r.h. (noncondensing)</p> <p>Max noise in absolute mode : <0.2 ppm CO₂ amd <30 ppm H₂O</p> <p>Barometric air pressure measurement : Range 60 to 110 kPa, accuracy ±0.1%</p> <p>Data storage capacity : >2 GB</p> <p>Temperature control : For cuvette temperature and leaf temperature;</p> <p>Leaf temp. Measurement : Thermocouple, range 0 to +50°C, accuracy ±0.2 °C. and others temp sensor for upper and lower leaf surface, for cuvette air temperature and 1 for external air temperature</p> <p>External miniature quantum sensor : Range 0 to >2000 μmol m⁻² 2⁻¹ PAR</p> <p>Internal light & sensor : Selective PAR measurement, range 0 to >2000 μmol m⁻² 2⁻¹ PAR, accuracy ±10%, Light sensors for upper and lower part of the cuvette</p> <p>Cuvette ventilation system : upper and lower part of the cuvette, speed adjustable.</p> <p>Mass flow : 0 to 1500 μmol s-1</p>

	<p>Leaf area : Broad leaf Area 6 OR 8 cm² standard with facility of easily changeable adapter/small adapter</p> <p>Correction : Signal is corrected for temperature, pressure and H₂O –effect on CO₂ signal.</p> <p>Chlorophyll Fluorometer (For dark and light adapted leaf fluorescence monitoring)</p> <p>Light : LED array with red and blue LEDs, Range 0 to 2000 $\mu\text{mol m}^{-2} \text{s}^{-1}$ PAR max</p> <p>Measuring light : Blue LEDs (470 nm),</p> <p>Signal detection : PIN-photodiode protected by long-pass filter (> 660 nm), selective window amplifier</p> <p>Leaf area for fluorescence : Of same leaf Area measurements</p> <p>Accessories:-</p> <ol style="list-style-type: none"> Oxygen Sensor to monitor actual oxygen concentration with 0.05% resolution or more . Narrow Leaf Chamber/ Adapter for different size of leaf <p>System should supply with following accessories :-</p> <ul style="list-style-type: none"> AC power supply, Rechargeable battery (2 or 4 for 6-8 hours backup) and battery charger. External battery cable Chlorophyll Fluorometer and Light Source Oxygen Sensor Accessories - Spare & consumables (10 kg Sodlime, 10 Kg Silicagel, CO₂ Cartridge 10 No.) Transport Box, Tripod & Out door set
5	<p>Flow Cytometer EMD: Rs. 150000.00</p> <ul style="list-style-type: none"> The instrument should be a compact benchtop Flow Cytometer analyzer. A compact flow cytometer for ploidy analysis, high resolution DNA analysis for plants, animals and micro-organisms The Instrument should use a light source compatible to be used with DAPI/PI. The instrument should have Windows based software for real-time data acquisition, data analysis and data display. The instrument should have the option of upgrading it to one more Laser light source. The instrument should have flow cuvette and having laminar sample transport with sheath fluid for fluorescence light detection. The Instrument should be supplied with in built/external PC with monitor. The instrument should be supplied with the reagent of 200 Test for Ploidy analysis. The instrument should have the feature of Automatic peak analysis The instrument should be supplied with extra data analysis software FCS express.

6	<p><u>High Throughput DNA Sequencer</u> : EMD: Rs. 250000.00</p> <p>Technical Specifications For Benchtop DNA Sequencing System</p> <ul style="list-style-type: none"> • System should occupy minimal lab footprint and should be offered as a single, integrated instrument capable of performing template DNA amplification and sequencing. • The sequencing chemistry should mimic natural biological chemistry with simultaneous addition of all four bases in the sequencing reaction for competitive addition to the DNA template. The chemistry should thus allow for highly accurate sequencing through homopolymeric regions (minimum of 20 bases or more). • The sequencing workflow should allow fully automated, walk-away operation, without user intervention and support unattended operation for at least 300 sequencing cycles. • Instrument should give a data output of 6 Gb or more per run. • Sequence output should generate accurate base calls and high error free raw data with greater than 85% data over Q30. • Clonal amplification of DNA template should be fully automated, without the involvement of emulsion PCR. • The system should be offered with integrated paired-end fluidics on the instrument, supported with fully automated paired-end chemistry, without user intervention. • The system should have an option of integrating with a cloud based computing environment, for data storage, sharing and analysis. In addition, there should also be an option of a deployment of an onsite server, for the same functions. • The sequencing chemistry should be robust and globally proven, demonstrated with over 5000 peer reviewed publications. • System should offer the user-friendly sequencing experience, such as, intuitive touchscreen user interface, RFID tracking and pre-mixed/pre-filled integrated reagent cartridge for minimal user intervention. • The system should be accompanied by a work station. Minimally with CPU - 2.6 GHz or above 2 with octa core processor, RAM - 32 Gb, Storage - 2-3 TB. Data sharing and storage should be enabled with ease, with a secure and safe environment. • 2KVA UPS for 1 hr power backup.
7	<p><u>WALK IN COLD ROOM</u> EMD: Rs. 100000.00</p> <ul style="list-style-type: none"> • Walk in Coolers Technical Specification of Cold cabinet (Walk-in- Coolers) • Walk-in-Cold room dimensions : 173”x127”x111”(In Inches)(External Dimensions) • Internal Volume of the Room : 1300CFT(Approx) • Quantity of the Room : 1 No. • Room Temperature required : 2° C to 6°C • Insulation type for Chiller : 60mm high density PUF insulation panels with 0.5mm. thick prepainted G.I. Sheet both sides. • Flooring : PUF Slab having the thickness of 60mm. Having the upper layer of Anti-Skid GI.

	<ul style="list-style-type: none"> • Incoming product temperature : 22-25°C • Product Load : 60-80 boxes. • Racks : 3 Walls with racks; 4 level; 6ft. high, GI slotted angle; depth-2ft. • Pull down time : 24 Hours • Door Size : Auto closing flush doors of 34’’x78’’(1 No.) with long lasting FRP lining • Ambient temperature : +42° C • Cooling Unit type : Air Cooled, Split type • Indoor Unit : Slim cassette type, dual discharge centrally ceiling mounted • Density of panels :40±2Kg/Cubic meter • Type of compressor : Hermetic • Refrigeration Capacity : 15000 BTU/hr. • Electric Supply : 230V/1ph/50Hz • Compressor run time : 16 Hours • Refrigerant : R22 • Door type : Heavy duty hinges • Door frame Construction : All accessories like light switch Temperature indicator are fitted on the door frame • Construction of the door : Flushed type • Panel Assembly sealing : PVC gaskets to form a tight joint with cam locking ceiling to ceiling & wall to wall • Temperature indicator : Digital Temperature indicator • Compressive strength at 10% : 2-6 Kg./Square meter • Adhesive strength : 2.9 Kg./Square meter • Dimensional Variation : < 2% • Closed cell content : 90-95% • Thermal Conductivity : 0.019-0.022 W\m °C • Water absorption : 1 w\% • Safety latch at door : Switch type • Blowing agent : R-141B (Non CFC)
--	---

8	<p><u>MICROBALANCE</u> EMD: NIL</p> <p>Electronic top loading semi microscope dual range balance with following salient features :</p> <ul style="list-style-type: none"> • Large LCR display. • Aluminum Die cast body. • Wind draft shield built in. • Unibloc patented technology. • Dual range. • Capacity : 220g\82 g • Readability (Minimum display) : 0.1 mg \ 0.01mg • Repeatability (Standard deviation) : ≤ 0.1 mg for Large range, ≤ 0.05 mg for small range • Linearity : ± 0.2 mg for large range & ± 0.5 mg for small range
---	---

	<ul style="list-style-type: none"> • Response time : 3 s for large range & 10s for small range. • Operating ambient temperature : 5°C to 40°C • Temperature co-efficient of the sensitivity (10°C to 30°C) : ± 2 ppm when PSC is off. • Sensitivity stability against temperature change (When PSC is ON 10°-30°C) : ±2ppm • Pan size : 80mm dia. • Built in calibration weight. • Automatic built in calibration. • PSC enabled. • Clock-Cal Enabled. • Built in clock • GLP\GMP\ISO Calibration report. • Windows direct software • Formulation mode enabled. • Interval timer output enabled. • RS-232 interface built in/ • Specific gravity measurement software, piece counting & percent display.
9	<p>FAST PROTEIN LIQUID Chromatography EMD: Rs. 100000.00</p> <p>Versatile liquid chromatography system for protein and peptide purification by FPLC where the configuration can be modified with automation kits and upgradable. Purification must be performed at microgram up to milligram scale. The characteristics shall be the following: The system shall be capable of handling different types of commonly used chromatography columns like at least GE Healthcare chromatography columns or equivalent and to perform at least the following techniques:</p> <ul style="list-style-type: none"> ✓ Gel filtration (size exclusion) ✓ Ion exchange chromatography Affinity chromatography ✓ Hydrophobic interaction ✓ Chelating ✓ Buffer exchange/desalting ✓ Chromatofocusing <ul style="list-style-type: none"> • Multiple wavelength detection: between 190 and 700 nm, with at least 3 wavelengths simultaneously. • Wavelengths accuracy: ± 2 nm • Wavelengths reproducibility: ≤ 1 nm. • The system must be software monitored (see section d). • Flow rate limit shall go up to 10 ml/min. • Pressure limit shall be at least of 23.3 MPa. • pH monitoring: pH range 2-12 with at least 0.1 pH unit sensitivity • Conductivity monitoring (between 1 µS/cm and at least 500 mS/cm). • Gradient buffer preparation (software assisted). • Automated sample injection. • Solvent compatibility: All commonly used chromatographic solvents • Operating temperature: 4°C to 40°C.

	<ul style="list-style-type: none"> • Voltage: 100-120 / 220-240 V <p>Fraction collector FPLC system shall be associated to a fraction collector: The fraction collector must be programmable and easy to use in connection with the analysis software. • Fixed volume and time fractionation as well as automatic peak fractionation shall be possible. • The fraction collector shall be flexible and could be used with different tube racks that enable to collect different fraction scales down to microliter.</p> <p>Tool kit for tubing and connectors Tubing and connector tool kit shall include: • Injection loops: range from µl scale to ml scale. • Column connection tubes. • Connectors to connect columns, tubes and the FPLC system.</p> <p>Analysis software Analysis software capable of fast and efficient control of protein purification which shall be able to generate high-quality purification results. The software shall enable a real-time control of the FPLC system based on a dedicated controller interface with a computer based graphical user interface where methods and operation sequences could be fully programmed by the end user. Functions to be included: • Real-time flow scheme. • Trend curve data. IRMM / Ref. 2010-059-ic – technical specifications – LC-system - p. 5 of 6 Yes No • Display of all monitor values. • Method Logbook for full documentation. • Method start protocol. • Note books for pre-run, run, and post-run notes. • Method handling with full flexibility. • Backup of the different methods.</p> <p>Workstation for handling A PC controller that enables easy communication with the workstation and peripheral devices via an external USB communicator. The controller must include the Windows XP operating system or equivalent, the FPLC application software, a QWERTY keyboard, a mouse, and a highresolution flat-panel monitor.</p>
10	<p style="text-align: right;">EMD: Rs. 50000.00</p> <p>SPECTROPOLARIMETER</p> <p>Spectropolarimetry is the science of measuring the polarization of light from celestial objects at narrower bandwidths than is possible with a conventional polarimeter. The principles are the same as with a conventional polarimeter, but the wavelengths measured are isolated with a spectrograph rather than with filters. Spectropolarimetry is used to measure the magnetic fields of stars from the Zeeman effect and to study the origin of spectral lines:</p> <p>Applications</p> <ul style="list-style-type: none"> ✓ Analysis of Bio-Macromolecules ✓ Qualitative and Quantitative Analysis of Chiral Materials ✓ Assignment of Electronic Absorption Bands <p>Technical Specifications:</p> <ul style="list-style-type: none"> • Light Source: 150 W Xe arc lamp • Wavelength Range: 165 - 1100 nm • Four Channel Simultaneous Data Acquisition • Circular Dichroism (CD) • UV-VIS Absorption

	<ul style="list-style-type: none"> • Optical Rotatory Dispersion (ORD) • Linear Dichroism (LD) • CD - absorption difference between left and right circularly polarized light for an electronic transition. • ORD - difference between the indices of refraction for left and right circularly polarized light.
11	<p><u>ICE MAKING MACHINE</u> EMD: Rs. 25000.00</p> <p>Automatic ice flaking machine : Production capacity : 70kg at 10°C \ 64 Kg at 21°C Storage bin capacity : 25 kg Refrigerant gas : 134A (Non CFC) Rating : 800W IMPORTED</p>
12	<p><u>ATOMIC ABSORPTION SPECTROPHOTOMETER</u> EMD: Rs. 100000.00</p> <ul style="list-style-type: none"> • Automated should have multi element functionality and simultaneous deuterium back ground correction. • Setup and operation should be quick and easy for user with the elemental method library providing optimal working conditions. • Fast software controlled six lamp turret with auto lamp shut down to preserve lamp life. • Flexibility and reduced warm up time with independent power supplies for each lamp allowing simultaneous or selected lamp warm up. • Accurate auto aligning optics. • Safety and performance should be ensure at all times by the power on diagnostics and interlock checks. • Productivity is maintained with the software service modules, which can provide valuable information to the service engineers. • Absorption emission and molecular absorption modes of operation. • Analytical parameters for all AA analysis elements are stores in an easily accessible cook book <p>Technical features :</p> <ul style="list-style-type: none"> • Operational modes : Atomic absorption, atomic absorption with background correction, atomic emission, and molecular absorption. • Wavelength range : 190 to 900mm • Photometric range : -0.301 to 2.0 Abs • Photometric accuracy : ± 0.001 Abs @ 1 Abs • Detector : High performance photomultiplier. • Background correction : D2 • Lamp capacity : 6 lamp turret • Lamp positioning : Automatic <p>Monochromator</p> <ul style="list-style-type: none"> • Mounting : Lithrow type • Focal length : 250nm • Grating : 1200 lines]mm

	<ul style="list-style-type: none"> • Bandwidth : Variable 0.1 to 2nm in steps of 0.1 nm <p>Sample Introduction :</p> <ul style="list-style-type: none"> • Sample Uptake : 6 to 10 \Min adjustable. • Spray chamber : Polypropylene. • Nebulizer : SS • Burner type : Air colled, pre mix 100mm slot burner suitable for ait\acetylene flames, universal 50mm slot burner suitable for all flame types. • Burner positioning : Vertical movement via a stepper motor, manual rotational and lateral positioning. • Flame ignition and extinguish : Automatic. • Gas control Automatic flow rate control and flame type change over. <p>Package should include :</p> <ul style="list-style-type: none"> • Main unit with Air Acetylene Burner, Six Lamps Turret Holder (Motorized), D2 Lamp (Ultra Pulse) Back Ground Corrector , Flame Control for safe & simple operation, Programmable Flame Control, Comprehensive Flame Control and safety features. • Air Compressor Oil free air compressor with Output pressure up to 3.5 Kg/cm2 (Approx.). Reservoir Tank Capacity 20 liters (Approx.). Pressure switch cutoff 3 Kg/ cm2 (Approx.), Air flow : 1 CFM at 2 Kg/ cm2, Power Required : 230 Volts \pm 10 % AC, 50 Hz • Software 21 CFR11 feature 32BIT • Acetylene gas cylinder filled with IOL-AR-GRADE-II Instrument grade gas (2 No.) • Double stage double gauge acetylene gas regulator. • Exhaust chimney. • KVA Servo controlled voltage stabilizer for main unit only. • KVA UPS system with minimum 10 minutes backup for main unit only. • 6 only. Hollow cathode lamps • Suitable computer, printer & UPS for above machine.
13	<p>PHASE CONTRAST MICROSCOPE EMD: Rs. 75000.00</p> <p><u>Specification for Advance research Trinocular Phase contrast microscope with Dedicated scientific Dedicated Scientific 8 megapixel Digital Camera with image analysis software.</u></p> <p>Stand: Ergonomically Design rugged stand for Long time comfortable uses.</p> <p>Observation Head: Wide field Trinocular tube, Viewing Angle 30 deg, 360 deg rotation, Interpupilliary Distance 48-75mm. Reversed inwards quintuple nosepiece with precision click Stop for easy rotation</p> <p>Optical System: CCIS Plan Achromatic Color Corrected Universal Infinity System <u>CCIS Plan Achromatic Phase contrast Objective Antifungus treated</u> CCIS EF-N Plan Achromatic Objectives EF-N PL 4x/0.10 W.D 6,3 mm CCIS EC-H Plan Achromat Phase objective 10X/0.25 WD=4.3mm CCIS EC-H Plan Achromat Phase objective 40X/0.65/S WD 0.4mm CCIS EC-H Plan Achromat Phase objective 100X/1.25/S-oil WD=0.13mm</p>

Eye piece: Wide field high eye point eyepiece N-WF10X/20mm with diopter adjustment on both eyepieces, with rubber eyecup (paired)

Coarse and Fine Focus: Coaxial coarse and fine focusing adjustment Brass Gear Z-Axis Movement 25mm Stroke. Fine focus with 2mm minimum increment,, coarse focus with torque adjustment .

Rectangular Mechanical Stage : Built in low position coaxial mechanical stage With X & Y control, double Slide specimen holding clip, Easy to read vernier scale for precise and fast Stage size 175 x 140mm surface,76 x 50mm movement Repositioning of sample (Right Hand control)

Condenser: Focusable Phase contrast 5 position (BF, DF, Ph1, Ph2, Ph3) Turret Condenser, Phase Centering telescope.

Illumination: Built- in Koehler illumination 3W LED Illumination with intensity Control, Immersion oil (5ml), Power cord, Allen hexagonal key, Vinyl dust cover

C-Mount Adopter: 0.5X C-mount camera adapter for 1/2.5" chip sensors.

Dedicated scientific HD (High Definition) Digital Camera

Sensor Type : CMOS

Sensor Size : 1/2.8 Inch

Capture format on SD Card : Still image (8.0MP) /Video HD 1980X1080

Live Display Model (through USB) : 1980X 1080

Live Display Model (through HDMI) :1920X1080 (HD) 60fps

Pixel Size: 2.8µm x 2.8µm

Scan : progressive

Data Transfer: HDMI (1080p) and USB2.0

Operating Temperature : From -10 to +60 Degree Celsius non condensing

Max Signal to noise ratio: 38.1dB

Dynamic range : 70.1 dB

Live Image resolution : 8 MP

Sensitivity : 1,4V/Lux-sec (550nm)

Slot: SD Card (max 32Gb)

Support Device : Twin and Direct show Driver

Supported OS: Microsoft Windows XP SP3/Vista/7/8/10 and MAC OSX

Minimum Computer Requirements: 2GHz dual core –Ram memory 2GB- Video memory min.512 MB.

Lens Mount :C –mount

Focusable lens : 12mm

Package includes: CS ring Adaptor ,Focusable lens,30mm ad 38mm,eyepiece adaptors, Remote control, HDMi Cable ,USB 2.0 Cable ,Calibration slide ,macro tube ,universal power supply

Image Analysis software

Instant Image Capturing, Real time full screen image, Programmed Interval Captures, Video Capture by Time Settings, Easy Measurement Calibration, Measurement in microns, inches, millimetres. Length Measurements, Ellipse, Rectangle, Irregular Shape Measurements, Perimeter, Radius, Circumference Measurements, Angle Measurements, Magnifier (zoom) function, On-line files sending / receiving, Sound recording, Image Adjustment Effects Automatic Cell Counting, Data Export, Report Generating and Print Out, Interactive File Format

14	<p style="text-align: right;">EMD: Rs. 50000.00</p> <p>PETROLOGICAL POLARISING MICROSCOPE <u><i>Advance Polarizing Upright Trinocular Microscope.</i></u> Contains: Color Corrected Infinity Optical System, Anti-fungus Microscope Stand with coaxial fine and course Focusing mechanism Coarse motion Torque adjustable, Upper stage drive stop incorporated. Trinocular head : Wide field Trinocular tube, Viewing Angle 30 deg, 360 deg rotation light distribution 100:0/20:80 Sidentopf design, IPD adjustable 48 to 75 mm Intermediate tube: 360° rotatable analyzer with focusable Bertrand lens. Nosepiece : Reversed quadruple nosepiece with precision click Stop for easy rotation, (Completely field flat) with Antifungus type objective Strain-Free CCIS EC Plan Objective 4X / 0.10 Strain-Free CCIS EC Plan Objective 10X / 0.25 Strain-Free CCIS EC Plan Objective 40X / 0.65 (SL) Strain-Free CCIS EC Plan Objective 60X / 0.80 (SL) Eyepiece High Eye point : N-WF10X/20mm, diopter adjustment on both eyepieces, rubber eyecup (paired), cross hair on one eyepiece) Mechanical Stage – 360°Circular Rotating Stage, Mechanical stage. Condenser: Achromat swing-out condenser N.A. 0.90/0.13 (strain-free) with iris diaphragm Polarizer : Rotatable polarizer, fixed on condenser carrier Focusing Block: Coarse focus with torque adjustment, Fine focus with 2µm minimum increments. Compensator: compensator with measurement range λ and $1/4\lambda$ retardation plate. Illumination: Kohler illumination Quartz Halogen (30 W/6V) with intensity control Accessories: Blue filter, green filter, yellow filter immersion oil (5ml), power cord, Allen Hexagonal key, vinyl dust cover.</p>
15	<p style="text-align: right;">EMD: Rs. 150000.00</p> <p>CONFOCAL MICROSCOPE Technical Specifications For Spectral Laser Scanning Confocal Microscope The system should be an state-of- the-art completely Spectral Confocal and have Filter free detection technology for fixed & Live Cell imaging, consisting of the following items: Inverted Fluorescence Research Microscope:</p> <ul style="list-style-type: none"> • Inverted Fluorescence Microscope having programmable motorized X-Y scanning stage with Universal • sample holders for slides, 35/60 mm Petri dish, labtek or similar chambers. • It should have FOV 22mm and Plan Apo-chromatic objectives of Magnifications 10x, 20x Multi • Immersion,40X, 63X (1.4NA)Oil and 63X water. • 12V 100W halogen illumination for transmitted light, 120W /130 W metal halide illumination (life time approx 2000hrs) for Fluorescence. • Automated DIC for all objectives and Fluorescent band pass filters for DAPI, GFP, YFP,TRITC/

- Rhodamine.
- The Piezo Z-stage for fast XZ and XYZ scanning with z step size of 1nm.
- Suitable and completely imported anti-vibration table.
- Onstage CO2 incubator for live cell imaging,(upto 72 hrs), which can hold petri plate & multiwall plate. It
- should be fully automated and confocal software controlled.
- High resolution cooled monochrome camera having 1.45 million net effective pixel resolutions with
- cooling of -20 degree below ambient.

Confocal Scan Head and detection system:

- Point scanning confocal Microscope with high transmission efficiency optics and filter free confocal
- detection.
- Scan head with prism based spectral imaging capability in confocal mode.
- Computer controlled continuously variable single pin hole system.
- System should posses high efficient dichroic beam splitter for lasers with recycled grating/Prism/Hybrid
- photon counting and Spectral PMT .
- System should able to image cross talk free real time spectral imaging without any algorithm.
- System should not have secondary dichroic and band pass filter in scan head. It should be completely
- filter free at detection part for high efficiency.
- Transmitted light detector to be provided for capturing bright field and DIC imaging.

Lasers and Software:

All the laser should be controlled through AOTF for laser attenuation and switching in synchronization with scanner.

Blue Diode 405nm, Solid state 488,Solid state 561,Solid state 633.

a. Basic image acquisition, Microscope control, scan head control and laser control software.

b. Measurement of Intensity, length, area Area intensities through image stacks Online measurement

while displaying a live image.

c. Saving of all instrument parameters along with the image for repeatable /reproducible imaging.

d. Frame/line/lambda capturing, Z-Stack, Time series imaging capabilities.

e. Dedicated software for FRAP experiment.

f. Co-localization analysis and volume rendering.

g. Dedicated 3D software for 3D visualization & 3D reconstruction.

h. Free Up gradation of software for at least 5 year

3 GHz-Intel Processor Core2Duo 500 GB Hard disk, 4GB RAM with two 19'' monitor.

Service support: Proactive remote controlled service support to give advance information regarding confocal microscope.

16	<p>STEREOZOOM TRINOCULAR MICROSCOPE EMD: Rs. 50000.00 <u>ADVANCE RESEARCH TRINOCULAR STEREO ZOOM MICROSCOPE WITH DEDICATED SCIENTIFIC HD (HIGH DEFINATION) DIGITAL CAMERA WITH IMAGE ANALYSIS SOFTWARE.</u></p> <p>Zoom Ratio: Greenough zoom optical High Resolution system 1:6.7 Zoom ratio Observation Tube: 45 deg. Trinocular head, 360 deg. rotating, Interpupilliary distance 48-75mm Diopter adjustment on both eyepieces. Eyepiece: Wide field High Point eyepieces 10X / FN 23, Diopter adjustable interchangeable with biological eyepieces Mutual intensity control (0% to 100%. with independent power Switch, Mutual intensity control (0% to 100%) Working Distance: WD=113 mm Zoom range: 0.75x-5x-10X-50X Magnification range Extendable From 5X to 320X with Additional Optics Diopter Adjustment: ± 5 Deg. Working Distance: 110mm Max.view [Standard]: 23mm Illumination: reflected and transmitted 3W LED lamp with Intensity Control. Max.view [Standard]: 23mm Main supply 100V-240V</p> <p><u>C-Mount Adopter : 0.5X C-mount camera adapter for 1/2" chip sensors : Dedicated scientific HD (High Definition) Digital Camera</u></p> <p>Sensor Type : CMOS Sensor Size : 1/2.8 Inch Capture format on SD Card : Still image (8.0MP) /Video HD 1980X1080 Live Display Model (through USB) : 1980X 1080 Live Display Model (through HDMI) :1920X1080 (HD) 60fps Pixel Size: 2.8µm x 2.8µm Scan : progressive Data Transfer: HDMI (1080p) and USB2.0 Operating Temperature : From -10 to +60 Degree Celsius non condensing Max Signal to noise ratio: 38.1dB Dynamic range : 70.1 dB Live Image resolution : 8 MP Sensitivity : 1,4V/Lux-sec (550nm) Slot: SD Card (max 32Gb) Support Device : Twin and Direct show Driver Supported OS: Microsoft Windows XP SP3/Vista/7/8/10 and MAC OSX Minimum Computer Requirements: 2GHz dual core –Ram memory 2GB- Video memory min.512 MB. Lens Mount :C –mount Focusable lens : 12mm</p>
----	--

	<p>Package includes: CS ring Adaptor ,Focusable lens,30mm ad 38mm,eyepiece adaptors, Remote control, HDMi Cable ,USB 2.0 Cable ,Calibration slide ,macro tube ,universal power supply</p> <p><u>Image Analysis software : Plus 3.0 Software</u> Instant Image Capturing, Real time full screen image, Programmed Interval Captures, Video Capture by Time Settings, Easy Measurement Calibration, Measurement in microns, inches, millimetres. Length Measurements, Ellipse, Rectangle, Irregular Shape Measurements, Perimeter, Radius, Circumference Measurements, Angle Measurements, Magnifier (zoom) function, On-line files sending / receiving, Sound recording, Image Adjustment Effects Automatic Cell Counting, Data Export, Report Generating and Print Out, Interactive File Format</p>
17	<p>XRF ANALYSER EMD: Rs. 75000.00</p> <p>Element range: Sodium (11) to Uranium (92) Mode of analysis : Enetgy Dispersive X-ray Fluorescence (EXrdf) analysis Simultaneous analysis with live update of results) or sequential operation with live updates after first measurement condition No of element : 1-80 elements Qualitative, 1-50 elements quantitative or semi- qualitative using empirical calibrations or optional standarless (Fundamental parameter) analysis Concentration range : ppm to 100% m/m Sample Form : Solids, Liquids, Powders etc. Sample Size : Sample holder for liquid/Power/pellets/ papers and glass beads analysis Sample Tray : Standard automated 10 sample tray with ability to fit secondary safety window liquid analysis Sample Chamber : Air with optional helium and sample rotation Xray Tube : 4-30KV (Ti or Pd) X ray Detection: High Resolution Silicon Drift Detector Data Processing: Spectrum processor with multi channel analyser User Interface/PC Software: Analytical Software package should include facility for simple routine operation, restandardization, Qualitative and fully Quantitative analysis, Comprehensive X-ray correction model, Ability to store results, monitor QC check sample display spectrum scans, download calibrations and export data</p>
18	<p><u>LYPHOLISER</u> EMD: Rs. 50000.00</p> <p>Freeze Dryer base unit:</p> <ul style="list-style-type: none"> • Should be Micro processed digital control and LED display with the facility of the performing all procedures on one touch auto control system from freezing to drying. • Safety maintains experiment by back fill, auto purging and alarm system. • Should be safely designed to prevent contamination of samples by inserting sterile air or nitrogen gas.

	<ul style="list-style-type: none"> • Chamber body with dimensions 250X280mm should made of stainless Steel 304 to resist corrosion and contamination and overall dimensions of 600X600X880mm • Capacity: 3 litres • Refrigeration with 1/3Hp • Temperature Range: ambient to -50degC • Safety Device: Back fill and auto purge System • Defrosting: Heated Door Defrosting • Should be provided with Vacuum Pump • Can apply to both individual and bulk scale at the same time.
19	<p>ELISA READER EMD: Rs. 50000.00</p> <p>The absorbance 96-well microplate reader should support applications for ELISA, Protein Analysis, Enzyme Kinetics, Cell Viability and Proliferation, DNA and Total Protein Quantification, and Cell Density.</p> <p>Sample types:</p> <ul style="list-style-type: none"> • The microplate reader must be able to accommodate the following 96-well plate types: Flat, U-bottom, Half-volume, and Easy Wash™ <p>Compatible Assays:</p> <p>At a minimum, the microplate reader must be able to perform the following assays:</p> <ul style="list-style-type: none"> • ELISA:Alkaline Phosphatase (PNPP), B-Glactosidase, Horseradish Peroxidase (ABTS), TMB • Cell Viability and Proliferation: NAD/NADP Conversion, MTT, MTS, XTT, • DNA and Total Protein Quantification: BCA, Bradford, Lowry, Diphenylamine DNA (DISHE) • L-Ascorbate <p>Required Minimum Performance Specs</p> <ul style="list-style-type: none"> • The microplate reader must have a Dynamic Range of 0 – 4.000 Abs • The microplate reader must have a Resolution of 0.001 Abs • The microplate reader must have a Linearity (@ 405nm) of 0-2.000Abs $\leq \pm 1\%$; 2-4.000Abs $\leq \pm 2\%$ • The microplate reader must have an Accuracy (@ 405nm) of 0.005 $\pm 1\%$ (0-3Abs); 0.005 $\pm 2\%$ (3-4Abs) • The microplate reader must have a Precision(@ 405nm) of CV$\leq 0.2\%$ (0-3Abs); CV$\leq 1.0\%$ (3-4 Abs) • The microplate reader must have fast sample processing (<6s single read, 12s double read) <p>System and Software Configuration</p> <ul style="list-style-type: none"> • The microplate reader must have be a filter-based, 9-channel, top-read photometer • The microplate reader must use a quartz-halogen lamp • The microplate reader must have an 8 position filter wheel with 8 filters included <ul style="list-style-type: none"> ◦ Of the 8 filters, 5 filters must be the following: 405, 450, 492, 595, and 630nm ◦ The 3 remaining filters must offer user-choice from the filter catalogue including the following: 340, 380, 415, 540, 570, 578, 590, 650, 690nm, and

	<p>custom</p> <ul style="list-style-type: none"> ◦ Filters must be easy to change in the field by the end user • The microplate reader must have a motorized door to quickly and easily load/access the plate • The microplate reader must have a built in shaker with 3 speed selection: slow, medium, and fast • The microplate reader must have at least 3 data output ports, including 3 USB and an optional USB printer • The microplate reader data output format must be Excel • The microplate reader must have a touch screen LCD interface, with dimensions of at least 7” • The microplate reader must NOT require a separate computer to operate or perform analysis • The microplate reader must have a 3 read modes: End Point, Dual Mode, and Kinetic • The microplate reader must have Pre-programmed protocols for ELISA and Bradford assays • The microplate reader must have the ability to create and save customer protocols • The microplate reader must have Analyses include pre-processing for dualmode reads • The microplate reader must have the ability to interpret positive/negative results (+/-) for samples with controls • The microplate reader must have the ability to determine Concentrations from standards • The microplate reader must have the ability to interpret Quality Control pass/fail from QC controls • The microplate reader must include selectable curve fits for analysis (linear, log, cubic spline, point-to-point, factor) • The microplate reader must have the ability to collect and interpret Kinetic Measurements and curves
20	<p><u>GROWTH CHAMBER</u> EMD: Rs. 50000.00</p> <ul style="list-style-type: none"> • Capacity ≥ 250-350 L • Programmable temperature, lighting and humidity functions • Should allow for at least 12-step programs from 1-98 times or unlimited and at least 10 patterns to be memorized • Should have facility for connecting Multiple programs • Should have facility to Program starting day and time operation • Should have Selectable clock mode and timer mode • Control panel should have graphic LCD display • Should have on-board facility for storing data of last two weeks with data retrieval on control panel itself. Should provide graphic display of daily data • Should provide easy calibration of temperature & humidity through control panel • Should have small, light weight, high-molecular membrane type humidity sensor

	<ul style="list-style-type: none"> • Should have ultrasonic humidifier with PID control; 60% to 90% RH (+15°C to 45°C light off) humidity control of 55 to 85% RH (+15°C to 45°C light ON) • Should have Automatic Defrost with ≥3 patterns & Manual Defrost facility • Should have Fluorescent lamp 40W x 15 with at least 6 increments (0-6) • Should have Temperature Alarm (Hi & Low Temp. limit) & Humidity Alarm • Should have Exterior Dimensions: 760 x 700 x 1,835 mm • Should have Interior Dimensions: 520x 490 x 1,135 mm • Exterior Finish: should be painted steel • Interior Finish: should be stainless steel, paired glass window on right and left side • Shelves: should have at least 4 shelves of hard steel wire on polyester coating • Should have forced air circulation • Temperature range: +5°C to 50°C (Lamp off) and +10°C to +50°C (Lamps on) • Temperature distribution should be ±1.0°C with Lamp off & ± 2.5°C with lamp on • Temperature fluctuation: ±0.3°C
21	<p>Automated Western Blotting System EMD: Rs. 75000.00</p> <ul style="list-style-type: none"> • Should be a fully automated complete solution for protein detection and characterization which performs all the manual processes associated with a traditional Western blot. • Protein sizing, quantitation and immunodetection of proteins should be performed in a nano-immuno assay system that utilizes capillaries allowing for the separation, capture and covalent immobilization of proteins from a wide array of plant species and subsequent immunoassay detection in the same vessel. • Should be a Bench-top system to processes up to 25 samples within 3 hours • Should use capillaries with a volume capacity of 400 nL • Should perform protein capture using inner capillary chemistry coating that is light activated to cause covalent immobilization of all proteins to the inner capillary wall • Should allow for loading up to 25 individual samples in a microtiter plate with space for separation and stacking matrices, primary and secondary antibodies and peroxide and luminol chemiluminescent substrate which are required to carry out 25 individual immunoassays • Must have robotic automated system which prepares capillaries for sample uptake • Should perform automated size-based separation • Must wash capillaries, remove matrices and perform automated immunoassay steps incubating of primary and secondary antibodies and protein blocking steps • Must automatically introduce chemiluminescent reagents for immunoassay detection results • Should have Molecular weight size separation power supply able to produce 0-3,000 volts with Constant voltage output • Must include Automated detection of fluorescently labeled protein size standards • Molecular weight ladder should range from 2 to 440 kDa • Should have ability to distinctly resolve biotinylated protein standards • Must have chemiluminescent and fluorescent detector

	<ul style="list-style-type: none"> • Should include software to set-up assay protocols and analyze run data, specify the molecular weight per sample, specify chemiluminescence collection time, perform relative quantitation of identified peaks by total area or peak height
22	<p>MULTI-MODE MICROPLATE READER EMD: Rs. 50000.00</p> <ul style="list-style-type: none"> • Should have high power Light Emitting Diode (LED) light sources that cover a wavelength range from 340nm – 650nm. • Must have Single photon counting photomultiplier tube (PMT) for fluorescence and luminescence detection and a silicon photodiode for absorbance detection. • Should include 6 position excitation filter slide and a 6 position emission filter slide that are configured with filters for Coumarin and Flourescein detection, as well as 405nm, 450nm, 492nm and 620nm absorbance filters. • Excitation Filter Slide must include Absorbance: 405 nm, 450 nm, 492 nm, 620 nm; Fluorescence: 360 nm, 485 nm • Emission Filter Slide must include Fluorescence: 465 nm, 535 nm • Must support fast switching of emission filters for FRET measurements. • Should have filter slide access door on the front of the instrument. • Must include extra wide microplate access door that extends across the front of the instrument, and enables the plate carrier to accept plates in various positions (rather than a fixed access point). • Plate carrier should accept microplates in either landscape or portrait configurations. • Should read 96 and 384 well SBS standard microplates. • Should have touchpad on the front of the instrument with buttons that enable filter slide ejection, plate carrier ejection and emergency stop functions. • Touchpad should also contain two LED lights that indicate instrument operation status. • Software must enable full instrument control including print settings, filter configuration, shaking, filter slide ejection, and plate carrier loading and ejection with features including: • User creation, copying, editing and deleting of microplate types, detection methods and protocols. • Extensive library of pre-configured plate types, as well as a Labware Optimization Wizard for defining new or unique plate types. • Easy assay configuration and data analysis features, including plate layout configuration with well identifiers; data reduction; programming of variables, transformation formulas, standard curves, cut-off groups, and validation formulas; database for saving and viewing results; 2D and 3D graphics; result recalculation; and several automatic and manual data export and print options. • Programmable linear, orbital and squared microplateshaking methods must be part of confiugration. • Should allow integration with liquid handlers. • Should have ability to be connected to and controlled by a PC through an RS-232 serial interface.