

**Department of Biotechnology
Pondicherry University
Puducherry-605014**

Sealed quotations under two bid systems are invited for the purchase of the following laboratory equipments for the Department of Biotechnology. The quotations can be submitted for one or more equipments. The quotations duly signed and sealed should be submitted to **Dr. N. Sakthivel, Professor and Coordinator for UGC-SAP Programme, Department of Biotechnology, School of Life Sciences, Pondicherry University, Kalapet, Puducherry - 605 014.**

The quotation should be sent by post (normal/speed/Registered/courier) only. The price quoted should include all the costs such as delivery, installation, testing etc and also inclusive of all taxes. Warranty terms should be explicitly specified in your quotation. The technical specifications are given below. Last date for receiving quotation is **18.08.2016**

Name of the required items:

- 1. Biorupture – Sonication Device (Diagenode) - Proprietary : 1 No.**
- 2. Biosafety Cabinet System, Class II Model AB2-4S1 (ESCO) - Proprietary : 1 No.**
- 3. CO₂-O₂ Incubator (Thermo Scientific Forma, Model 4131) - Proprietary : 1 No.**
- 4. In-built Luminescence Spectrometer (LS 55 Perkin Elmer) - Proprietary : 1 No.**
- 5. Inverted/Fluorescent Microscope : 1 No.**
- 6. Real-time PCR : 1 No.**
- 7. CO₂ incubator : 3 Nos.**

The detailed specifications of the individual equipments are given below:

1. Bioruptor – Sonication Device (Diagenode) - Proprietary

Non-Probe based ultra sonication equipment for the applications such as Chromatin shearing, DNA Shearing, RNA shearing, Protein extraction, Cell and Tissue disruption and FFPE DNA extraction.

- The equipment should be suitable for (i) Power supply : 230V/2.1A (EU), 50/60Hz., (ii) Control unit dimensions : 150(w) x 300(d) x 195(h) mm, (iii) Sonication unit dimensions : 350(w) x 260(d) x 150(h) mm, (iv) Sound proof box dimensions : 350(w) x 350(d) x 520(h) mm and (v) Water bath volume : 750 ml.

- The equipment should be compatible to support different volumes of tubes (1.5 ml, 15 ml & 50 ml tubes) to handle sample volumes between 100 ul to 20 ml.
- The equipment should have the capacity to process up to 12 samples simultaneously with timing and temperature control.
- The ultrasonic wave should have frequency range between 20 kHz to 60 kHz. Tube holder for handling 1.5 ml, 15 ml and 50 ml need to be provided.
- The equipment should have provision for the future up gradation for the inclusion of water cooler.

2. Biosafety Cabinet System, Class II Model AB2-4S1 (ESCO) - Proprietary

Class II Type B2 (100% Exhaust) Biological Safety Cabinet, EN12469 :2000 Requirement, Air cleanliness: ISO 14664.1 Class 3, IEST-G-CC1001, IEST-G-CC1002, and other equivalent air cleanliness requirements, Minimum exhaust static pressure for clean exhaust filter : 364 Pa / 1.5 in H₂O, Fluorescent Light Intensity At Zero Ambient : >1000 Lux, Down flow Filter Type : ULPA filter with integral metal guards and filter frame gaskets, Exhaust Filter Type : HEPA Filter with integral metal guards and filter frame gaskets, 99.99% at 0.3µm fully compliant with EN 1822 and IEST – RP – CCOO1.3 requirements. Note: Required blower and ducting for installation should be provided by the supplier. Proprietary and dealership certificates should be enclosed.

Detailed technical specification

Nominal Size	: 1.2 meters (4 feet)
External Dimensions	: 1340(w) x 811(d) x 1460(h) mm; (52.8" x 39.1" x 57.5")
Internal Work Zone	: 1270(w) x 585(d) x 670(h) mm: (50.0" x 23.0" x 26.4")
Internal Work Area, Space	: 0.58 m ² (6.2 sq.ft)
Tested and Working Opening	: 173 mm (6.8") and 198 mm (7.8")
Standard Compliance	: EN12469 :2000 (Exceeds requirements for Class II microbiology Safety Cabinets <u>Air cleanliness:</u> ISO 14664.1 Class 3, IEST-G-CC1001, IEST-G-CC1002 and other equivalent air cleanliness requirements <u>Filter Performance:</u> IEST-RP-CC034.1, IEST-RP-CC007.1, IEST-RP-CC007.1, IEST-RP-CC001.3 and EN1822, Electrical safety: IEC 61010-1 / EN 61010-1 / UL 3101-1 / CSA C22.2 No. 1010.1-92.

Average Airflow Velocities

Inflow : Initial set Point: 0.53 m/s (105 fpm)
Down flow : Initial set Point: 0.33 m/s (65 fpm) at initial setpoint with
uniformity of better than +/- 20%

Airflow Volumes

Inflow : 355 m³ /h (208 cfm)
Down flow : 812 m³ /h (473 cfm)
Certification Exhaust : 1234 m³ /h (728 cfm)
(Inflow + Downflow)
Concurrent Balance Value
Exhaust Volume at corresponding
Static Pressure : 1382 m³/h (816 cfm)

Minimum exhaust static
Pressure for clean exhaust filter : 364 Pa / 1.5 in H₂O
Static Pressure with additional
174 Pa (0.7 in H₂O) required
by NSF/ANSI 49:2008 : 538 Pa / 2.2 in H₂O

Sound Emission NSF/ANSI 49 : <59 dBA,
EN 12469 : <56 dBA

Fluorescent Light Intensity At

Zero Ambient : >1000 Lux (>93 foot candles)

Cabinet Construction : Main Body: 1.5 mm (0.06") 16 gauge electro-galvanized steel
with Isocide white oven-baked epoxy-polyester powder-
coating
Work Zone: 1.2 mm (0.05") 18 gauge electro-galvanized
steel with Isocide white oven-baked epoxy-polyester
powder-coating

Cleanliness within working Area : ISO14644.1 Class 3, US Federal Standard 209E Class 1
/ M1.5, AS1386 Class 1.5, JIS B9920 Class 3, BS5295
Class C, Class M10,000 as per KS27030.1 and
equivalent classes of VDI2083 and AFNOR X44101

Down flow Filter Type : ULPA filter with integral metal guards and filter frame
gaskets; fully compliant with EN 1822 and IEST-RP-
CC001.3 requirements (each cabinet has individual
downflow and exhaust filters)

Exhaust Filter Type : HEPA Filter with integral metal guards and filter frame
gaskets, Typical: 99.99% at 0.3µm fully compliant with
EN 1822 and IEST – RP – CCOO1.3 requirements,

Power Supply : 220 – 240 V AC 50 Hz 1 phase,

Net Weight : 229 kg (505 lbs)

Shipping Weight, Maximum : 273 kg (616 lbs)

Shipping Dimensions, Maximum : 1430(w) x 860(d) x 1780(h) mm; (56.3" x 33.8" x70.1")

Shipping Volume, Maximum : 2.19 m³ (45.6 cu.ft.)

3. CO₂-O₂ Incubator (Thermo Scientific Forma, Model 4131) - Proprietary

Easily stackable, large 6.5 cu ft capacity, polished stainless steel chamber with choice of CO₂ gas sensors and Oxygen control, Durable triple-wall construction delivers optimal temperature uniformity. And it's guaranteed for life against leakage, Polished stainless steel interior has 100% coved corners, Four heavy-duty, perforated stainless steel shelves are standard, Insulated heated outer unit, Removable, Cleanable inner door gasket, HEPA filter Airflow System, Fan assisted Air flow. Proprietary and dealership certificates should be enclosed.

- Simplicity with the iCAN touch screen interface.
- Provision for monitoring Relative humidity.
- Enhanced flexibility with complete O₂ control.
- **System Accessory:** Suitable cylinder and 2-stage regulator should also be provided along with the instrument.
- **Temperature:** Control: +/-0.1°C, Range: 5°C above ambient to 55°C, Uniformity: +/-0.2°C@37°C, Tracking alarm: +/-1°C.
- **Temperature safety:** Sensor: Precision thermistor, Controller: Independent analog electronic, Setability: 0.1°C.
- **CO₂/O₂: CO₂/O₂ Control:** Better than +/-0.1%, CO₂ range: 0-20%, O₂ range: 1-20%, Inlet pressure: 15PSIG (1.0 Bar), CO₂ sensor: T/C, O₂ sensor: Fuel Cell, Readability & Setability: 0.1%, Tracking alarm: +/-1%.
- **Humidity:** RH: Ambient to 95% @37°C, Humidity Pan: 3.2 quartz (3.0 litres) standard, Display : In 1% increments.
- **Shelves:** Dimensions mm : 18.5 x 18.5(in), 47.0 x 47.0 (cm), Construction : Stainless steel, perforated, Standard: 4, Maximum: 17.
- **Construction:** Water Jacket Volume: 11.7 gal (43.5 litres) ; Interior Volume: 6.5 cu. Ft (184.1 litres) ; Interior: Type 304, mirror finish, stainless steel ; Exterior: 18 gauge, cold-rolled steel, Powder coated ; Outer Door Gasket: Four-sided, molded, magnetic vinyl ; Inner Door Gasket: Removable, cleanable, feather-edged, silicone ; Alarm Contacts: Power Interruption; deviation of temperature, CO₂, O₂, RH; customer connections through jack on back of unit ; Data Outputs: USB (Standard), 4-20 milliamp (optional).
- **Dimensions:** Exterior (W x H x F-B): 26.0 x 39.5 x 25.0 (in); Interior(W x H x F-B): 21.3 x 26.8 x 20.0 (in).

4. In-built Luminescence Spectrometer (LS 55 Perkin Elmer) - Proprietary

A Versatile, computer controlled Luminescence spectrometer; incorporates an 8.3-watt, pulsed xenon source for fluorescence and phosphorescence decay time measurements.

- Excitation 200–800 nm and emission 200–900 with zero order selectable.
- Standard PMT covers 200–650 nm; R928 or R955 PMT available for full range.
- Synchronous scanning with constant wavelength or frequency difference included. Excitation spectra are automatically corrected.
- Variable excitation 2.5–15 nm and emission 2.5- to 20 nm slits in 0.1 nm increments.
- Scan speeds can be selected in 1-nm increments from 10-1500 nm/minute.
- Incorporates a software-controlled filter wheel in the emission monochromator with 290, 350, 390, 430 and 515-nm cut-off filters, 1% T attenuator and clear beam.
- Includes automated polarization accessory that consists of 2 filter wheels; each wheel containing a horizontal and vertical polarizing element.
- Polarizer positions are software controlled and can be manually set or automatically controlled for polarization, anisotropy or G-factor
- FL WinLab Software Package, Windows based software controls the instrument, sampling accessories and data collection.
- The software provides specific applications such as Scan, Time Drive, Ratio Data Collection, ICBC Calibration, Well Plate Reader and 3D view.
- Required UPS (1 KVA) should be supplied.

Proprietary and dealership certificates should be enclosed.

5. Inverted/Fluorescent Microscope

Inverted/Fluorescent Microscope motorised with provision for provision for semi-automated experiments. Two-tiered system with multiple ports (both Right and Left), 12V-100W Halogen Illuminator. Suitable filters (Green, Heat Absorber, Blue and ND), built-in intermediate Magnification 1.5x or more and Manual light path control.

- Binocular observation tube with Plain stage with Attachable Mechanical Stage and Universal Holder to accommodates various holders.
- Eyepieces 10X with FOV 22mm or more.

- Manual Sextuple Nosepiece and Manual turret LWD condenser (N.A 0.50 or more).
- Achromat 4X, Enhanced phase contrast objective for 10X Ph1 (0.25 NA), 20X (0.40 N.A), and 40XC with cover glass correction (N.A 0.55, W.D 2.7-1.7 mm) with Ph2.
- Plan Apochromat phase objective 60X/63X with N.A 1.40 & W.D 0.19 and also for Plan Apochromat Objective 60/63X with N.A 1.40 & W.D 0.19 or external phase ring for use Plan Apochromat 60/63X objective for phase contrast purposes.
- Fluorescence Attachment: With six filter turret assembly, built-in Noise Terminator, 100 HBO illuminator. Heat Absorbing Filter, and Light Shielding Plate, Filters of DAPI, FITC/GFP, TRITC/Ds RED. High quality filters of CFP & YFP.
- High Resolution Digital colour camera with 13 Mega Pixels or more. Larger sensor preferably more than 7microns 14 bit camera. Very Low readout noise.
- Image Analysis for Advanced research application (X, Y, Z, Lambda, Wavelength, Time and Multi-point) Auto measurement (Measure intensity profile, length, area, perimeter and angle). Multi-channel, Time lapse, Z stack, Fast acquisition control, Co-localization.
- System Accessories: Computer System (I3 Processor, 4GB RAM, 1TB storage with minimum 22 inch high definition monitor) should be offered along with microscope.
- Warranty: Minimum 3 years system warranty.

Note: Inverted Microscope, Digital camera and Image analysis software should be quoted from the same firm.

6. Real-time PCR

The real-time PCR should have the following specifications.

- The sample block of the equipment should be made of Silver and the block should have the capacity to accommodate 96-well fitting for 96 x 0.2 ml Tubes, 96-well micro plates and 12x 8-well strips of 0.2 ml and the measurement should be optimized for the range of sample size should be minimum of 10 μ l.
- Fast ramping with Heating should have minimum of 4.4 $^{\circ}$ C/s (The higher fast ramping rate is desirable), Cooling rate should have minimum of 2.2 $^{\circ}$ C/s (And again the higher ramping rate is desirable) and Standby temperature should be down to 3 $^{\circ}$ C.
- Enable with High-power peltier elements and should have adjustable temperature preferably in the range of 3 $^{\circ}$ C to 99 $^{\circ}$ C.

- Well to well temperature uniformity across the plate is $\pm 0.1^{\circ}\text{C}$ and accuracy $\pm 0.2^{\circ}\text{C}$.
- Column Gradient function for the temperature programmable range Maximum 20 $^{\circ}\text{C}$ gradient range.
- Heated lid temperature should be atleast 105°C and the Contact pressure 10 kg, automated.
- Software to perform Absolute and relative quantification, Delta-delta Ct-method, Genotyping or Allelic discrimination, PCR efficiency, Melting analysis, Multi-gene and multi-plate analysis.
- Innovative fiber optics for high accuracy and easy multiplexing on probed assays.
- High-power LED's (RGBW or White LED) as Light source and High sensitive CPM (Channel Photo Multiplier) or higher end CCD as a detector.
- Wavelength range of Excitation and Emission should be 470 nm - 660 nm and 520 nm - 705 nm respectively. It should detect wide range of dyes including SYBR green, FAM, Alexa 488, JOE, VIC, HEX, Yekima Yellow and upgradeability should be possible.
- Suitable for at least 4 color multiplexing of dyes with the least or no cross talk.
- Computer System (I3 Processor,4GB RAM, 1TB storage with minimum 22 inch high definition monitor) should be offered along with equipment.
- Warranty: Minimum 3 years warranty on device system and at least 5 years warranty on high performance optics.
- Required UPS (1 KVA), SYBR green (100 ml) and 8-well strips (1000 Nos.) should be supplied with no additional cost.

7. CO₂ incubator

The CO₂ incubator should have the following specifications.

- Direct Heat CO₂ incubator with Heat Sterilization (Decontamination).
- Direct heating profile with gentle convection circulation/air circulation of chamber atmosphere for exceptional uniform temperature and incubator environment.
- System capacity: 150 – 170 litre.
- IR CO₂ sensor with automatic auto-zero programmable function to ensure accurate calibrated measurements.

- The CO₂ range 0.2-20% with $\pm 0.1\%$ control, $\pm 0.2\%$ Stability and $\pm 0.1\%$ Uniformity.
- Temperature range should be 5°C above ambient to 50°C.
- Seamless chamber and perforated shelving.
- Heat Sterilization with the Temperature range 120 – 180°C.
- 4 to 6 Split inner glass door for atmosphere conservation.
- RS-232 Communication port and Stackable up to 2 units high.
- Large volume humidification pan with dedicated independent heater.
- Quick and comprehensive chamber for effortless cleaning.
- Cylinder and 2 stage regulator should be provided along with the instrument.
- Warranty : Minimum 3 years warranty

TERMS AND CONDITIONS

I. General Information:

a) **Last date and time of receipt of the Tender: 18th August, 2016 at 3.00 PM**

b) Quotation/ Tender document Fee: Rs.500/-

c) EMD rates: 2.5% of the quoted price

d) Quoting merely the lowest price does not confer any right to any bidder for award of supply order. The University's Purchase Committee, reserves the right to select the equipment any bid under the grounds of specification compliance, technologically advanced quality, proven performance track record, brand reputation, service backup support & training, offer of additional / special features, Compatibility with the existing System, etc.

e) The Quotation/Tender Document Fee and EMD should be submitted along with your quotations.

f) The Tender must be submitted along with the stipulated EMD fee in the sealed cover, superscribing "**Tender for Department of Biotechnology (UGC-SAP) Equipments**". The name and address of the bidder should also be mentioned at the "From address" space.

g) The Tender should be addressed and posted to the following address by speed, registered post or by courier.

DR. N. SAKTHIVEL, Professor and Coordinator for UGC-SAP Programme, Department of Biotechnology, School of Life Sciences, Pondicherry University, Kalapet, Puducherry – 605 014

h) Tenders will not be accepted through fax / e-mail.

II. Common Conditions (Import or Indigenous)

1. Price Schedule

The rates should be quoted for a single unit and also for the total quantity required by the University. The price should include the Delivery, installation, training charges, etc. at the respective Department, Pondicherry University. The prices quoted shall remain firm until the Equipment is supplied to the respective Department, Pondicherry University.

2. Quoting the Core price & Tax, Duties, Discount etc.

The taxes / duties / discounts, if applicable, are to be explicitly and separately shown in the bid.

3. Eligibility:

The firm must have the requisite domain expertise with regard to supply, installation and post-sale service of the items they are quoting. The firm should have been in existence for at least six years as on the date of this Tender and must have executed at least three orders for this kind of Equipment) during the last three years.

4. Duty Exemption

The University has been granted the benefit of exemption from the payment of the Central Excise Duty and Customs Duty by the Department of Scientific and Industrial Re-search (DSIR), India, vide their Notification No.10/97, dated 01-03-1997 and No.51/96 dated 23.07.96 respectively, in respect of

- a) Scientific and technical instruments, apparatus, equipment, Software including computers.
- b) Accessories and spare parts of goods specified in (a) above and consumables.
- c) Computer software, compact disks, CD ROM, Recording magnetic tapes, microfilms, micro-chips etc.
- d) Prototypes.

Customs duties at Indian port, if any, will be to the account of the University.

5. Technical Specifications

- i. **WARRANTY:** The Equipment covered under the purchase order, when installed, shall be warranted for the quality, workmanship, trouble free operation and performance for a period of at least 36 months (**preferably, 3 years**) from the date of putting the system into operation at the Department of Biotechnology, Pondicherry University, or at least 42 months from the date of receipt of the last lot of the consignment.

- ii. If any item covered under warranty fails, the same shall be replaced free of cost including all the applicable charges including shipping cost both ways.
- iii. Complete technical specifications of the Equipment including the Operating system to be included in the bid.
- iv. The necessary service support should be provided by Bidder during the agreement period.
- v. The training should be provided by the supplying companies.
- vi. Operating Manual should be provided in English.
- vii. A recent customer list (within last five years) with contact details including email address is to be submitted with technical bids / bids as the case may be.
- viii. If the Equipment is proprietary a product, a proprietary product certificate should be enclosed.
- ix. The Equipment must operate at 230V / 50 Hz single phase and / or equivalent three phase electrical power.
- x. **The validity of the each quotation should be at least for THREE MONTHS from closing date.**
- xi. The offers will not be considered if received after the bid closing date and time.
- xii. The offers received through telex / telefax / e-mail will not be accepted by the University under any circumstances.
- xiii. The University shall not be responsible for any delay / loss or non-receipt of the tender by post / courier service.
- xiv. No unsolicited correspondence shall be entertained after the submission of the offer.
- xv. If an order is placed with the firm, the purchase shall be governed by an agreement as per the University rules in force at the time.
- xvi. Additional terms and conditions will be incorporated in the purchase order, if needed, to safe guard the interests of the University.
- xvii. Tender is not transferable.
- xviii. In case of any dispute in respect of the Tender, all legal matters shall be instituted within the jurisdiction of the place where the purchaser ordinarily resides.

6. Power to reject the offer:

- i. Pondicherry University reserves the right to accept / reject any offer in full or in part or accept any offer other than the lowest offer without assigning any reason thereof. Any offer containing incorrect and incomplete information shall be liable for rejection.
- ii. No Agency commission will be paid to any authorized agent in India.
- iii. Liquidated damages: Timely supply of the ordered items, installation, commissioning (wherever is applicable) and training etc. is the essence of the contract. In case of failure to supply within the time specified in the Purchase order, a penalty / LD of 0.5% of the total value per week or a part thereof shall be levied subject to a maximum of 7.5% in respect of items which are not supplied. The decision of Pondicherry University shall be final in this regard.
- iv. Bidder(s) must be authorized business partners of Global / National service providers of the respective Equipment.
- v. The Bidders must enclose authorization letter from the respective global / national service providers of the above said Equipment particularly mentioning an undertaking that in case of default by the Bidder, they (Global Service Provider) shall take over all the responsibilities of the Bidder.
- vi. The Bidder should not be involved in any Bankruptcy filing for protection from it.

III. Specific Conditions for Imported Equipments

1. Payment of EMD:

The Quotation must be accompanied by EMD as stated above, by means of a Demand Draft, drawn in favour of **The Finance Officer, Pondicherry University, payable at Puducherry.** The Small Scale units are exempted from payment of EMD provided they enclose the proof of their exemption Certificate issued by the competent authority.

2. Payments terms:

Normally a payment 90% will be released after the installation & training. However, 100% payment will be released **if the supplier provides Bank Guarantee** towards performance Security for the 10 % of the total cost of the furnace to cover the warranty period. Bank charges in India shall be borne by the purchaser and outside India shall be borne by the contractor / supplier. The offer must be in English. The rates should be indicated both in figures and words against item specified in the given table. It is preferable that the price be quoted in US Dollars or in major foreign currencies.
