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**Institute of Bioresources and Sustainable Development (IBSD)**  
(Department of Biotechnology, Govt. of India)  
Takyelpat, Imphal-795001, Manipur

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**NIT No. 6/114/2016-IBSD (PUR)**

**DATED: 7/10/2017**

**NOTICE INVITING TENDER FOR SUPPLY & INSTALLATION OF EQUIPMENT for the Institute of Bioresources and Sustainable Development (IBSD), Imphal & its Regional centre at Sikkim.**

**The Director, IBSD**, invites quotations for supply of equipment as per details at **Annexure-1 to 10**, in two bid in sealed covers and so as to reach at IBSD on or before the due date & time from the date publication of tender

**INSTRUCTION TO BIDDERS:**

**A) Two Bids:**

**01.** Quotations will have to be submitted in two Parts i.e. (a) Technical Bid and (b) Price Bid, in two separate sealed covers; and both these covers will have to be again put in to a single sealed cover. Also, the address of the firm submitting the quotation to reach IBSD, must appear distinctly on both the inner sealed envelopes, indicating Price Bid/Technical Bid as may be applicable. Further, on both inner and outer sealed covers the following lines are to be written:

**QUOTATION FOR SUPPLY & INSTALLATION OF (Name of the Equipment) FOR IBSD Imphal**

**To**  
**The Director**  
**Institute of Bioresources and Sustainable Development (IBSD)**  
(Department of Biotechnology, Govt. of India)  
Takyelpat, Imphal-795001, Manipur

**From: M/s**  
**Contact No.:**  
**Email ID:**

**NOTE: The bid documents are not transferable and the firm's seal and signature of the authorized official must appear on all the papers and envelopes submitted. Tenders must be submitted separately for each item. Combined tenders submitted for more than one item together will be summarily rejected. Non-refundable Tender Fee (for whole tender paper) of Rs.500/= (Rupees Five hundred only) in the form of demand draft in favour of Director IBSD Imphal must be enclosed with the tender (Technical Bid). Otherwise the tender will not be considered.**

**02. In Technical Bid** the vendor must provide the followings:

- (a) Details of the technical features of the offered equipment vis-à-vis NIT specifications;
- (b) Standard technical literature on each of the items offered;
- (c) Certificate on the offered products in case of the Indian Agent;
- (d) In case of foreign quote, the address of Principal/Manufacturer and their bankers' details should be furnished. The mode of dispatch should be by Air Post Parcel/ Ocean Freight/ Air freight (on competitive rate). The approximate dimensions of the packages and weight of consignment are to be indicated.
- (e) List of reputed organizations/Institutions, where similar orders have been executed (copies of the purchase/work orders will have to be enclosed);
- (f) Up-to-date sales tax clearance certificate (for vendors outside the State of Manipur)/ VAT Registration Certificate indicating also the TIN number (for vendors within the state of Manipur) of the firm will have to accompany the quotation to be submitted;
- (g) Details of nature and maximum period of warranty offered by the vendor. The firm should give at least 2 years extended warranty.
- (h) After Sales Service: The name and address of the nearest available authorized service centre to IBSD Imphal, should be stated in the quotation.
- (i) Indian Agent should undertake to provide expert qualified engineers for maintenance /support within 24 hours of receiving complaint.
- (j) The tenderer has to state in detail the electrical power/ UPS requirements, floor space, head room, foundation needed and also to state whether Air- conditioned environment is needed to house the system etc. and to run the tests, i.e. pre- installation facilities required for installation in technical bid.
- (k) The firm/ supplier should submit guarantee letter of the spares or related chemicals/kit etc. of the respective equipment that the same will be available for next 10 years
- (l) Amount of Earnest Money deposit (EMD), in the form of Demand Draft or Bank guarantee only will have to be enclosed with technical Bid only.

**03. In the Price Bid**, the vendor must provide the followings:

- (a) Quantity, basic price (against item-wise details of specifications of each of the offered items);
- (b) Prices of each of the optional accessories, as required by NIT specifications and also may be relevant for an offered equipment, will have to be specifically stated in the quotation
- (c) Packing & Forwarding Charge, if any (percentage of basic price or as lump sum)
- (d) Central/ State sales tax/ VAT (as percentage of basic price + packing Forwarding Charge, if any)
- (e) Freight & Insurance charge, if any {as percentage of (a) + (b) + (c) or as lump sum};
- (f) Annual maintenance contract (AMC) rate (after expiry of the warranty period) is to be clearly indicated-preferably in both comprehensive and non-comprehensive terms, *failure to which the offer may not be considered eligible even if it turns out to be at the lowest price*. Discount on all spares have to be specified during warranty period.
- (g) Installation & commissioning charge (Including Service tax), to be shown item-wise extra, if any.
- (h) In case, if the quote is FOR/ FOB basis , estimated insurance coverage charges may please be indicated.
- (i) CIF, Kolkata value both by Airfreight and Ocean freight. All purchase should be quote F.O.R basis.

**04. Date & Time**

(i) Last date & Time for receipt of tender

**a) Date of closing on 27/10/2017 upto 2:00 pm**

**b) Date of opening of technical bid on 27/10/2017 at 3:00 pm**

**c) Successful technical bidder will be informed through**

**website**, the date and opening time of price bid. Bidder may present during that time at IBSD, Imphal.

All the above mentioned meetings will be held at IBSD, Imphal.

## **TERMS & CONDITIONS:-**

(Please note that the term “both foreign & indigenous’ wherever mentioned means the term is applicable to both foreign & indigenous purchase)

**01. Rates:** Rates quoted for indigenous items should be on **FOR IBSD Imphal**, on door delivery basis, with break-ups as per details below (for import items please refer additional terms for imported goods at clause No.24 below). The equipment has to be delivered at IBSD Imphal premises. Unloading the item from the transport is under the risk of supplier.

Break-up of cost

- a) Basic price
- b) (+) Central Excise Duty, if any
- c) (+) VAT/Central Sales Tax (On-Sub Total Price, Including excise duty, if any)
- d) (+) Freight & Insurance Charge, if any
- e) (+) Installation & Commissioning Charge, if any
- f) Grand Total F.O.R. IBSD Imphal, Price

Note: *Vague terms like “packing, forwarding, transportation extra” without mentioning the specific amount will not be accepted. Such offers shall be treated as incomplete and rejected.* Bidders shall indicate their rates in clear/ visible figures as well as in words and shall not alter/overwrite/make cutting in the quotation. In case of a mismatch, the rates will be written in words will prevail.

**02. Validity** (both foreign & indigenous): Quoted rates must be valid for **120 days**.

**03. Earnest Money Deposit:** (both foreign & indigenous)

As per the prescribe format at the Newspaper Advertisement (Financial Express on 7/10/2017) must be deposited as earnest money along with the “Technical Bid” by demand draft or Bank guarantee in favour of “**Director, IBSD, Imphal** and payable at **Imphal**. The EMD of unsuccessful bidders shall be returned after award of contract. All tenders received without EMD shall be summarily rejected. EMD of the successful bidder will be released on submission of the Performance Bank Guarantee (PBG). No interest will be paid on EMD.

**04. Performance Bank Guarantee** (both foreign & indigenous): The successful bidder shall furnish an unconditional performance bank guarantee valid till 60 days after the warranty period from a scheduled bank for 10% of the Purchase order value within 21 days from the placement of this order failing to which the contract shall be deemed as terminated (Applicable only to orders costing more than INR 5,00,000.00).

- a) The vendor shall provide a certificate of Guarantee guaranteeing xxx (Name of the equipment) of the satisfactory operation of the components and against poor workmanship, bad quality of materials used, faulty designs and performance figures given by the Vendor.
- b) The guarantee shall be operative for a period of 60 days after the warranty period. The performance bank guarantee would be to the extent of 10% of the order value.
- c) The vendor shall at their own risk/cost rectify the defects/replace the items supplied, for defects identified during the period of guarantee.
- (d) While clause 4(a), 4(b) & 4(c) are applicable to all orders worth INR Rs 5,00,000.00 or more, competent authority may take appropriate decisions on exceptional cases.

**05. PENALTY FOR DELAYED DELIVERY** (for both foreign & indigenous supplier): In the event of delayed delivery, installation & commissioning i.e. after the expiry of the period as agreed by both parties, the vendor shall be liable for a penalty deduction at a percentage of the value of the undelivered equipment subject to a maximum of 10% as detailed below:

- @ 1% to one week
- @ 2.5% upto two weeks
- @ 5% upto three weeks

@ 10% for four weeks and above

For the purpose of this clause, part of the week is considered as a full week.

In case of delayed delivery, the Director of IBSD Imphal reserves the right not to accept the subject consignment.

**06. In case of indigenous suppliers,** the goods should be insured against theft, loss or breakage during transit and insurance charge should not exceed 1% of the cost of material supplied. The rates of sales tax, excise duty etc. (as applicable) should be clearly indicated. (Form C & D are not applicable to us.)

**07. Pre-Installation** (both foreign & indigenous): Pre-installation requisites (electrical/floor/space/air-conditioning etc.) if any should be invariably mentioned clearly. Installation/training will be the full responsibility of the supplier/Indian agent.

**08. Short Shipment:** If any short-shipment is noticed, the same will be arranged immediately with all charges to this effect to be born by supplier/Indian agent.

**09. Genuine pricing** (both foreign & indigenous supplier): Vendor is to ensure that quoted price is not more than the price offered to any other customer in India to whom this particular item has been sold. Copy of the latest price list for the quoted item, applicable in India, must be enclosed with your offer.

**10. Customs / Excise Duty:** The Organization is exempted from payment of Customs / Central Excise Duty vide GOI Notification No. 51/96-Customs dated 23.7.1996 and Central Excise duty exemption in terms of Govt. notification No. 10/97-Central Excise dated 01.03.1997 with No TU/V/RG-CDE(982)/2013 dated 11/09/2013.

**11. GST:** For vendors within the state, appropriate GST will be applicable.

**12. Entry Tax:** State Govt. Entry Tax- usually@ XXX% (to be paid by IBSD, not by the vendor), wherever applicable, will be added while evaluating cost status of the concerned equipment to be supplied by vendors from outside the State.

**13. Delivery:** a) delivery of goods at IBSD Imphal, will have to be within 60 days from the date of the order.

a) **Safe Delivery of goods:** All aspects of safe delivery shall be the exclusive responsibility of the vendor. At the destination the packing will be opened in presence of IBSD user/representative. The proper commissioning will be the basis for receipt in good condition.

b) **No part delivery/shipment will be allowed.**

**14. Mode of Payment for Indigenous Purchase:**

a) Payment for indigenous purchases will be within 60 days from the date of successful delivery and installation of goods at IBSD Imphal, generally through A/c payee cheque. In case of foreign equipment, IBSD considered only FDD & Wire transfer after successful installation.

**Note: Please note as per Organization's norms advance payment is not allowed for indigenous/Foreign purchase**

**15. Late & delayed tender (both foreign & indigenous):** Late & delayed tender will not be considered. In case any unscheduled holiday occurs on prescribed closing/opening date the next working day shall be prescribed date of closing/opening.

**16. Conditional tenders not acceptable** (both foreign & indigenous): Conditional tenders shall not be accepted on any ground and shall be rejected straightway. In other word, printed conditions mentioned in the tender bids submitted by vendors will not be binding on IBSD. All the terms and conditions for supply, payment terms, penalty etc. will be as those mentioned herein and no change in the terms and conditions by the vendors will be acceptable.

**17. Specifications are basic essence of the product** (both foreign & indigenous): **It must be ensured that the offers are strictly as per our specifications.** At the same time it must also be kept in mind that merely copying our specifications in their quotation shall not make the firms eligible for consideration. **A quotation has to be supported with the printed technical leaflets/literature and the specifications mentioned in the quotation must be reflected/ supported by such printed technical leaflets/literature** model quoted/tendered specifications should invariably be highlighted in the leaflets for easy reference.

**18. Enquiry during the course of evaluation not allowed:** No enquiry shall be made by the bidders during the course of evaluation of the tender till the final decisions conveyed to the successful bidder(s). However, the committee/its authorized representative can make any enquiry/seek clarifications from the bidders. In such situation, the agency shall extend full co-operation. The bidders can also be asked to arrange demo of the offered items, in a short notice, as such the bidders have to be ready for the same.

**19. The acceptance of the quotation will rest solely with the Director, IBSD Imphal,** who in the interest of the organization is not bound to accept the lowest quotation and reserves the right to himself to reject or partially accept any or all the quotations received without assigning any reason.

**21. Termination for default:** Default is said to have occurred

- If the supplier fails to deliver any or all of the services within the time period(s) specified in the purchase order or any extension thereof granted by GBP.
- If the supplier fails to perform any other obligation(s) under the contract.

If the vendor, in either of the above circumstances, does not take remedial steps within a period of 30 days after receipt of default notice from **Director, IBSD Imphal** (or takes longer period in spite of what IBSD may authorize in writing), IBSD may terminate the contract/purchase order in whole or in part and forfeit the EMD/PBG as applicable. In addition to above, IBSD may at its discretion also take the following actions: IBSD may procure, upon such terms and in such manner, as it deems appropriate, good similar to the undelivered items/products and the defaulting supplier shall be liable to compensate IBSD for any extra expenditure involved towards goods and services obtained.

**22. Applicable Law** (both foreign & indigenous):

(a) The contract shall be governed by the laws and procedures established by Govt. of India and subject to exclusive jurisdiction of competent Court & forum in Guwahati/ Imphal, India only.

(b) Any dispute arising out of this purchase shall be referred to the **Director, IBSD Imphal**, and if either of the parties hereto is dissatisfied with the decision, the dispute shall be referred to the decision of an arbitrator, who should be acceptable to both the parties, to be appointed by the **Director, IBSD Imphal**. The decision of such arbitrator shall be final and binding on both the parties.

### **ADDITIONAL TERMS FOR IMPORTED GOODS:**

In addition to above mentioned terms, the following terms will be applicable in case of foreign purchases:

**23. Rates:** Quoted rates should be in CIF/CIP Kolkata terms and charges to be stated in the following break-up

- (a) Ex-works value
- (b) + Documentation & handling Charge, if any
- (c) + Estimated Overseas Freight to be paid at actual against authentic documents and monetary receipt
- (d) + Estimated Overseas Insurance charge to be paid at actual against authentic documents and monetary receipt (in case the firm holds open insurance policy, the insurance certificate relating to the consignment will have to be provided).
- (f) Total CIP/CIF Kolkata value
- (g) + Charges FOR IBSD, Imphal

#### **24. Delivery:**

- (a) Delivery of goods at IBSD Imphal, will have to be within 60 days from the date of issue of the Purchase order.
- (b) Supplier must take necessary steps for custom clearance at Kolkata. IBSD will provide necessary documents on request.
- (c) While transshipment will be allowed, part shipment will not be allowed.

**25. After Sale Service:** In case of imported items, foreign manufacturing firms should indicate facilities available for after sales service in India without which their offers are liable to be ignored. Detail address and contact number of local representative in India, without which the offers are liable to be rejected.

**27. Country of Origin:** While the country of origin will not be insisted, the same however will have to be stated in the original Invoice for payment through FDD.

**28. FDD Amendment:** FDD amendment charges due to mistake on the part of the supplier, **if** any, will have to be borne by the supplier.

**29.** Interested firm can participate the opening of tender.

**Note: For each equipment, there should be separate envelope and separate tender fees & EMD. EMD & tender fees should be independent envelope for each equipment outside the technical bid.**

**Price Schedule For Goods Being Offered From Abroad**

Name of the Bidder \_\_\_\_\_

TENDER No. \_\_\_\_\_

1	2	3	4	5	6		7		8		9	10
Sl No	Item Description	Country of origin	Unit	Quantity	Unit Price		Total Price (5x6)		Charges for insurance & transportation to port/ place of destination		Total Price (7+8)	Total charges FOR IBSD, Imphal
					FOB (named port of shipment)	FCA (named place of delivery)	FOB (named port of shipment)	FCA (named place of delivery)	Ocean	Air		

Note:

Total Bid Price in foreign

Currency \_\_\_\_\_ in words

(a) Indian agents name & address \_\_\_\_\_

Signature of Bidder

(b) Installation, commissioning & training charges, If any \_\_\_\_\_

Name  
Business

(c) Cost of spares \_\_\_\_\_  
Address \_\_\_\_\_

(d) The Indian agent's commission shall be paid in Indian Rupees only based on the Exchange Rate prevailing on the date of negotiation of documents in accordance with clause 22.1 of GCC.

(e) The cost of optional items shall be indicated separately

**Price Schedule For Goods Being Offered From India.**

Name of the Bidder \_\_\_\_\_  
 Tender No. \_\_\_\_\_

1	2	3	4	5	6	7	8	9	10	11
Sl. No.	Item Description	Country of origin	Unit	Quantity	Ex-Works. Ex-warehouse, Ex-showroom off the shelf price (inclusive of all taxes already paid)	Total price Ex-Works Ex-warehouse, Ex-showroom off the shelf price (inclusive of all taxes already paid) 5x6	VAT & other taxes like excise duty payable, if contract is awarded	Packing & forwarding up to a station of dispatch, if any	Charges for inland transportation, insurance up to Lab./instt.	Installation Commissioning and training Charges, if any

Total Bid price in foreign currency \_\_\_\_\_ in words.  
 Signature of Bidder \_\_\_\_\_

Name \_\_\_\_\_

Business \_\_\_\_\_

Address \_\_\_\_\_

Note:

- (a) The cost of optional items shall be indicated separately
- (b) Cost of Spares \_\_\_\_\_



## Bidder Information Form

- a) The Bidder shall fill in this form in accordance with the instructions indicated below. No alternations to its format shall be permitted and no substitutions shall be accepted. This should be done of the letter head of the firm

Date: (of Bid Submission)

Tender No.: (insert number from invitation for bids)

Page 1 of \_\_\_\_\_ pages

1. Bidder's Legal Name:
2. In case of JV, legal name of each party:
3. Bidder's actual or intended Country of Registration:
4. Bidder's Year of Registration:
5. Bidder's Legal Address in Country of Registration:
(1) 6. Bidder's Authorized Representative Information  Name: (Authorized Representative's name)  Address: (Authorized Representative's Address)  Telephone/Fax numbers: (Authorized Representative's Telephone/Fax numbers)  Email Address: (Authorized Representative's Email Address)
7. Attached are copies of original documents of: (check the boxes of the attached original documents)  Articles of Incorporation or Registration of firm named in 1, above , in accordance with ITB Sub-Clauses 4.1 and 4.2

Signature of Bidder \_\_\_\_\_

Name \_\_\_\_\_

Business Address

## Manufacturer's Authorization Form

The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer.

Date: (date of Bid submission)

Tender No.: (insert number from invitation for bids)

To: (Complete name and address of Purchaser)

Whereas

We (complete name of the manufacturer), who are official manufacturers of (type of goods manufactured), having factories at (full address of manufacturer's factories), do hereby authorize (complete name Bidder) to submit a bid the purpose of which is to be provide the following Goods, manufactured by us (name and or brief description of the goods), and to subsequently negotiate and sign the contract.

We hereby extend our full guarantee and warranty in accordance with Clause 21 of the General Conditions of Contract, with respect to the Goods offered by the above firm.

Signed: (signature(s) of authorized representative(s) of the Manufacturer)

Named: (complete name(s) of authorized representative(s) of the Manufacturer)

Title:

Duly authorized to sign this Authorization on behalf of: (complete name of Bidder)

Dated on \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ (insert date of signing)

**BID SECURITY FORM**

Whereas \_\_\_\_\_  
(Hereinafter called the tenderer)

Has submitted their offer dated \_\_\_\_\_

For the supply of \_\_\_\_\_  
(Hereinafter called the tender)

Against the purchaser's tender enquiry no. \_\_\_\_\_

KNOW ALL MEN by these presents that WE \_\_\_\_\_ of  
\_\_\_\_\_ having our registered office at  
\_\_\_\_\_ are bound unto \_\_\_\_\_ (hereinafter called the  
"Purchaser")

In the sum of \_\_\_\_\_

For which payment will and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

The Conditions of this Obligation are:

- (1) If the tendered withdraws or amends, impairs or derogates from the Tender in any respect within the period of validity of this tender.
- (2) If the tendered having been notified of the acceptance of his tender by the Purchaser during the period of its validity:
- (3) If the tenderer fails to furnish the Performance Security for the due Performance of the contract.
- (4) Fails or refuses to accept/execute the contract.

We undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to owing to the occurrence of one or both the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including 45 days after the period of tender validity and any demand in respect thereof should reach the Bank not later than the above date.

\_\_\_\_\_  
(Signature of the authorized officer of the Bank)  
Name and designation of the officer

Seal, name & address of the Bank and address of the Branch

**Performance Statement Form**

**(For a period of last 3 years)**

**Name of the Firm.....**

Order Placed by (full address of Purchaser)	Order No. and Date	Description and quantity of ordered equipment	Value of order	Date of completion of delivery as per contract	Date of actual completion of delivery	Remarks indicating reasons for late delivery, if any	Has the equipment been installed satisfactory? (attach a certificate from the Purchaser/Consignee)	Contact person alongwith Telephone No.,FAX No. and email-address

Signature and Seal of the manufacturer/ Bidder.....

Place:

Date:

**Deviation Statement Form**

1) The following are the particulars of deviations from the requirements of the tender specifications:

Clause	Deviation	Remarks (Including Justification)

Place:

Date:

Signature and Seal of the  
Manufacturer/Bidder

NOTE:

- 1) Where there is no deviation, the statement should be returned duly signed with an endorsement indicating "No Deviation".

**Service Support Detail Form**

Sl No.	Nature of training imparted	List of similar type equipments serviced in the past 3 years	Address, Telephone Nos., FAX Nos. and email address

Signature and Seal of the Manufacture/Bidder .....

Place:

Date:

**Technical Specifications:****Confocal Microscope**

System should be state of the Art facility which should be capable to perform wider applications which must include Live Cell imaging, Multidimensional imaging, FRET, and FRAP, Real time Photoactivation/Photoconversion etc.

**1. Inverted microscope (Fully Motorized)**

- a. Bright field, Fluorescence and DIC illumination with accessories for confocal scan head attachment
- b. Motorized beam path selection for visual and confocal imaging
- c. Motorized Z focus drive with minimum stable resolution of 10nm or better.
- d. Online display screen on microscope body for the motorised functions
- e. 6 position or higher motorized FL filter wheel, 6 position motorized DIC nosepiece
- f. Motorized XY scanning stage for the movement of specimen using ergo joy-stick as well as total control by the confocal software
- g. 12v/100w halogen illumination for transmitted light
- h. High resolution objectives Plan Apo 4x,10x, 40x, 60x/63xoil (N.A 1.4) and & 100x oil immersion(N.A 1.49)
- i. 120w/130w metal halide or mercury lamp with 2000 hours of lamp life or better for fluorescence observation with automatic shutter having DC (direct current) to provide constant and non-fluctuating light
- j. System should be quoted with Onstage Incubation system with having facility to control Humidity/Temperature/CO2 etc. Incubation system should be able to be controlled by using Confocal software.
- k. Microscope system should be equipped with Focus Drift compensation technology having LED (830nm or better) based mechanism for Continuous Focus correction monitoring system. The application of CY 5.5 and Alexa 700 should be included. dyes Focus correction technology should be usable for Glass as well as Plastic dishes.
- l. DIC attachment motorized for 10x to 100x objectives with analyzer and polarizer attachment, sliders and modules for the respective objectives.
- m. High-performance imported (Newport/TMC or equivalent) vibration isolation lab table having Active 1200 mm x 1500 mm or better floating anti-vibration table with air damping, honeycomb, bread-board table top with M-6 threading for the complete microscope system including multiphoton laser. It should be Scientific grade at least 12” thick.
- n. High resolution cooled monochrome CCD/CMOS camera having 15 million net effective pixel resolution or better with cooling which should be controlled with same Confocal software.

**2. Confocal scan head and detection system**

- a. High transmission efficiency optics for confocal
- b. Scan head with dual imaging capability with conventional fluorescence imaging (filter/prism based) and real time Confocal imaging
- c. Scan head should have detection technology having at least 2 GaAsP and Two PMT in standard detectors and preferably with 4 channel simultaneous image acquisition.
- d. System should be having additional spectral detection capability having two GaAsP spectral detectors to capture Dual color Spectral Imaging.
- e. Computer controlled continuously variable single pinhole system, which should cover wider area of one Airy unit for higher brightness and without affecting sectioning performance.
- f. System should have dual scanning technology having two independent hardware based scanner which provides 7 fps or better @ 512x 512 without any delayed method and High speed scanner should provide 25-30fps @ 512x 512 (FOV 18mm or better) and max 350fps @ 512x 32 and high speed scanner should be capable to image at 1kx1k resolution or better. System should be capable to switch easily between two scanners and also capable to utilize both scanner simultaneously for Real time FRAP, Photoactivation experiments and Photostimulation experiments.

- g. System should possess efficient dichroic mirror with low angle incidence for better transmission efficiency.
- h. Maximum scan resolution of up to 4Kx4K or better
- i. Scan zoom of 1-40X or more continuous variable. Multi step scanning zoom preferred
- j. Transmitted light detector to be provided for capturing bright field and DIC images.

### 3. **Lasers: Solid state laser module with laser lines of**

- a. Solid state 488nm (18mw or better fiber output)
- b. Solid state 561nm (18mw or better fiber output)
- c. Solid state 405nm (18mw or better fiber output )
- d. Solid state 640nm (18mw or better fiber output)
- e. All the visible laser lines should be controlled through AOTF for laser attenuation and switching in synchronization with scanner. Company should give document to claim the fiber out power as desired.
- f. Laser power should be controlled by the absolute value and they have to be modulated through power control for each wavelength along with return mask and also ROI exposure control
- g. Laser should be having approximately 10,000 hrs of working life time or better.

### 4. **Super Resolution Microscopy**

It should be structured illumination microscopy based technique which should have following capabilities:

- a. Capable to Resolve X-Y appr. 100-120 nm or better.
- b. Capable to resolve Z appr. 300-320 nm or better
- c. System should have observation modes as 2D- SIM/3D-SIM
- d. System should be capable to perform Multicolor Imaging.
- f. System should be capable to perform Long time live cell imaging experiments.
- g. Temporal Resolution of the system should be at least 0.7 sec to 1.5 sec/frame or better.

### 5. **Detection For Super Resolution system**

Detection for High-Resolution should be of Scientific CMOS sensor having effective no. of pixel 2k x 2k with Pixel Size of 6.5 microns x 6.5 microns and it should be capable of acquiring at a max speed of 100 fps or better @ full frame, Dark current should be 0.02 e-/pix./sec @ (-20°C) or better. Q.E. should be more than 80% or better. Full well capacity of 30,000 electrons or better.

### 6. **Computer Workstation (To be supplied from principal company )**

Latest workstation should be provided as follows or better specifications

- CPU : Zeon X5570 (2.98GHz/8MB/1333MHz) x 1(equivalent to HP Z840 or better)
- OS : Windows Vista Business 64bit edition JP/EN version
- RAM : 12GB or better  
2GB x 3 + Additional memory 2GB x TOTAL memory size 12GB
- HDD : 300GBS 3Gb/s(15000rpm) x 2 RAID-0 Striping structure
- FDD : 3.5" 2mode
- Optical drive : Max 16x speed super multi drive
- Graphics : nVIDIA Quadro FX580 (PCI Express, Dual monitor compatible) or better
- Monitor : 30"LCD

**Suitable online UPS to support the complete system (not less than 5 KVA) with minimum 30 minutes back-up time.**

### 7. Confocal Software

- a. Basic image acquisition, Complete microscope control, Scan head control and Laser control software
- b. Saving of all instrument parameters along with the image for repeatable/reproducible imaging
- c. Frame/line/lambda capturing, Z-Stack, Time series imaging capabilities



- d. ROI bleach for FRAP experiments
- e. FRET Imaging & Calcium Imaging.
- f. Co-localization analysis and volume rendering
- g. Real time ratio-display and Real time spectral Unmixing.
- h. 2 D and 3D image deconvolution
- i. Diverse measurement and statistical processing
- j. Software should be capable to record live graphs of different live cell imaging experiments parameters as an recorded data.
- k. An offline software with workstation must be quoted.

**Warranty :** 3 years Comprehensive

**Training:**

- a. Training at Imphal for scientists and technical staffs (onsite)
- b. Training of one scientist and one technical staff/student at company technical centre for at least a week.

**Manpower:** Suitable manpower should be provided at IBSD, Imphal by the supplier for functioning of instrument and operation for at least two years from the date of installation including all related expenses.

**Dehumidifier:** Suitable dehumidifier should be provided and installed by the supplier

All the other Accessories should be included as optional Item other than the specified above.

**Technical Specifications:****Inverted Microscope**

- Microscope Body:** Compact body with infinity corrected Optical System & Inclined Observation tube, attachable camera port with light distribution  
Eye piece/Camera 100/0:0/100.
- Illumination:** White LED Illumination with more than 35,000 h working life or better.
- Condenser:** ELWD condenser with (N.A. 0.3 or better, W. D. 75mm or better)
- Eyepieces:** 10X with F.O.V 22 or better and diopter adjustment facility on both eyes.
- Nosepiece:** Quintuple nosepiece or better.
- Stage:** XY Rectangular mechanical stage with Universal sample Holder.
- Objectives:** Long working distance Objectives suitable for Bright field/Phase Contrast & fluorescence application.
- Achromat 4X, NA 0.10, W.D.30.0 mm.
  - APO Achromat Phase 10x, NA 0.30, W.D.16.0mm; Ph1
  - APO flour LWD 20X, NA 0.45, W.D. 7.5 -6.0mm Ph1 with cover glass correction 0-2.0mm.
  - APO flour LWD 40X, NA 0.60,W.D.3.6-2.8mmPh2 with cover glass correction 0-2.0mm.
  - Plan Flour ELWD 60x/63x (NA 0.70) WD (2.6-1.8)
  - Plan Flour 100x oil (NA 1.30) WD (0.16)
  - Fluo Access. LED fluorescence attachments with LED light Source with at least 3 LED modules producing the following wavelengths: 385,470, 525/530nm wavelengths that will be compatible with DAPI/ FITC/ TRITC staining along with fluorescence filter turret & Filter cube with noise terminator mechanism for high signal to noise ratio.
- Camera:** DIGITAL COLOR CMOS/CCD CAMERA: Digital color CMOS/CCD camera capable of handling Bright Field, Dark Field, Phase Contrast & DIC images with 1/1.8" CMOS chip, 15 million pixel or more resolution. Live display mode, 20 frames/sec. at full resolution or better, max 42 frame per sec or better at ROI mode; binning modes 2x2, 4x4, IEEE1394B/USB3port for attaching camerato desktop/ through single wire.
- Software: Image Analysis Software with following features:**
- Image Acquisition, Analysis & Multi-Channel Merging,
  - Time Lapse Imaging,
  - Z-Stack, Annotation,
  - Manual Measurement, counting,
  - ND Viewer, Large Image, Macro,
  - Report Generator facility,
  - Vector layer & Multi-Dimensional File Format.

**Computer:** Branded Computer with i-7 Processor, 12 GB RAM, 1 TB HDD, Keyboard, optical mouse, DVD writer, 19" TFT color monitor, Multimedia kit, USB3.0/1394b fire wire port & cable along with ups.

**Warranty:** 3 years.

Suitable online UPS should be provided

Granite based microscope table should be provided with suitable computer table during installation.

All the other Accessories should be included as optional Item other than the specified above.

**Technical Specifications:****Trinocular Microscope**

MICROSCOPE BODY	Microscope body with uniform illumination throughout the field of view incl. periphery. It should have 3 built-in filters (NCB11, ND8, ND32)
MAGNIFICATION	40X-1000X for observation
OPTICAL SYSTEM	Infinity corrected optical system
EYEPIECE TUBE	Anti-fungus type trinocular tube, should be inclined at 25 degree angle with f.o.v. 22 mm or better with 3 way light distribution (100/0, 20/80, 0/100).
EYEPIECE LENS	10X (2PCS) with diopter adjustment (f.o.v. 22mm) or better.
OBJECTIVE	objectives suitable for bright field&fluorescence microscopy observation ACHROMAT 4X (N.A. 0.10, W.D. 25.0 mm OR BETTER) ACHROMAT 10X (N.A 0.25 W.D. 7.0mm OR BETTER) APOCHROMAT 20X (N.A 0.50,W.D. 2.1mm) APOCHROMAT 40X (N.A 0.75,W.D. 0.66mm) SEMI APOCHROMAT 100X OIL (N.A 1.30,W.D 0.2mm.)
NOSE PIECE	Reversed sextuple revolving nosepiece to accommodate six objectives at a time stage super hard ceramiccoated surface, stay in position stage handle, stage handle height & tension should be adjustable.
CONDENSER	Should have universal condenser with 6 positions suitable for all microscopy techniques.
ILLUMINATION	12V-100W halogen lamp precentered and prefocused.
EPI	Fluorescence attachment with 6 position turret filter block, noise terminator mechanism incorporated for high signal to noise ratio images with 100 watt mercury illuminator lamp should have lifetime of 200 hrs or more along with three fluorescent filters for FITC/GFP,DAPI/HOECHST& TRITC

**DIGITAL COLOR CAMERA:**

DIGITAL COLOR CMOS/CCD CAMERA: Digital color CMOS/CCD camera capable of handling Bright Field, Dark Field, Phase Contrast & DIC images with 1/1.8" CMOS chip, 15 million pixel or more resolution. Live display mode, 20 frames/sec. at full resolution or better, max 42 frame per sec or better at ROI mode; binning modes 2x2, 4x4, IEEE1394B/USB3port for attaching camera to desktop/ through single wire.

**SOFTWARE:** Image analysis software with following features:

- IMAGE ACQUISITION, ANALYSIS & MULTI-CHANNEL MERGING,
- TIME LAPSE IMAGING,
- Z-STACK, ANNOTATION,
- MANUAL MEASUREMENT, COUNTING,
- ND VIEWER, LARGE IMAGE, MACRO,
- REPORT GENERATOR FACILITY,
- VECTOR LAYER & MULTI-DIMENSIONAL FILE FORMAT.

**Computer:** Branded Computer with i-7 Processor, 12 GB RAM, 1 TB HDD, Keyboard, optical mouse, DVD writer, 19" TFT color monitor, Multimedia kit, USB3.0/1394b fire wire port & cable along with ups.

**Warranty:** 3 years.

Suitable online UPS should be provided

Granite based microscope table should be provided with suitable computer table during installation.

All the other Accessories should be included as optional Item other than the specified above.

**Technical Specifications:**  
**Stereo Zoom Microscope**

<b>OPTICS:</b>	PARALLEL-OPTICS ZOOMING TYPE OR EQUIVALENT
<b>ZOOM RATIO:</b>	12:1 OR BETTER.
<b>ZOOM RANGE:</b>	0.65 - 7.8X OR BETTER
<b>TOTAL MAGNIFICATION:</b>	3X-480X OR BETTER WITH COMBINATION OBJECTIVE AND 10X EYEPIECE
<b>OBJECTIVES:</b>	* PLAN APO 1X (W.D. 70mm) & * PLAN ACHROMAT 2X (W.D. 35mm)
<b>EYE PIECE:</b>	10X paired with 22 mm FOV or better& dioptre adjustment on both eyes.
<b>EYEPIECE TUBE:</b>	Trinocular eyepiece tube with 100:0; 0:100 light distribution at eye piece/ camera port.
<b>NOSEPIECE:</b>	Dual objective nosepiece to accommodate two objectives at a time.
<b>DIASCOPIIC ILLUMINATION BASE:</b>	LED diascopiic stand with uniform illumination& hand rest features for comfortable operation
<b>EPISCOPIIC LED ILLUMINATION:</b>	LED fiber optics bifurcated light illuminator with flexible arms on both sides (cold light source)
<b>FOCUSING MOUNT:</b>	With coaxial coarse & fine focusing knob to makefine focus adjustment.
<b>DIGITAL COLOR CMOS/CCD CAMERA:</b>	Digital color CMOS/CCD camera capable of handling Bright Field, Dark Field, Phase Contrast & DIC images with 1/1.8" CMOS chip, 15 million pixel or more resolution. Live display mode, 20 frames/sec. at full resolution or better, max 42 frame per sec or better at ROI mode; binning modes 2x2, 4x4, IEEE1394B/USB3port for attaching camerato desktop/ through single wire.
<b>SOFTWARE:</b>	Image analysis software with following features:
<b>MULTI-POINT</b>	<ul style="list-style-type: none"> <li>• IMAGE ACQUISITION, LIVE IMAGE CAPTURE&amp; ANALYSIS,</li> <li>IMAGE CAPTURING,</li> <li>• TIME LAPSE IMAGING, ANNOTATION,</li> <li>• MANUAL MEASUREMENT, COUNTING,</li> <li>• ND VIEWER, LARGE IMAGE, MACRO,</li> <li>• REPORT GENERATOR FACILITY,</li> </ul>

MICROSCOPE, CAMERA & SOFTWARE SHOULD BE FROM SAME SOURCE OF MANUFACTURING FOR BETTER COMPATIBILITY

**DATA COLLECTION AND PROCESSING UNIT:**

**Computer:** Branded Computer with i-7 Processor, 12 GB RAM, 1 TB HDD, Keyboard, optical mouse, DVD writer, 19" TFT color monitor, Multimedia kit, USB3.0/1394b fire wire port & cable along with ups.

**Warranty:** 3 years.

Suitable online UPS should be provided

Granite based microscope table should be provided with suitable computer table during installation.

All the other Accessories should be included as optional Item other than the specified above.

**Technical Specifications:**

**Concentrator**

Concentrator is required to concentrate essential oils, extracts, bioactive molecule etc.

- The system should have chemical-resistant, maintenance-free PTFE diaphragm pump which eliminates the need for changing pump oil.
- Different rotors to accommodate tubes of 0.2 ml, 2ml, 10ml and 50 ml.
- Stainless steel chamber for trouble-free operation.
- Suitable stabilizer should be provided

Warranty: 3 years from the date of installation

**Technical Specifications:**

**Refrigerated Micro Centrifuge**

- Max. 17,000 rpm with 24-hole microrotor or more.
- Should be able to hold minimum 24 microtubes or more, 64 PCR tubes
- Strong, triple laminated ABS/ Steel door with auto lock function.
- LCD display of speed, remaining time, and ACC/DEC ramps.
- Time setting to 99 min 59 sec or continuous.
- Multiple acceleration and 6 deceleration ramps.
- “Pulse” key for quick runs.
- Automatic recognition and alarms for imbalance, over – speed, and over- heat.
- Program memory for up to 50 programs or more.
- Fast cool down function – reach 4° C within 5 minutes or better.
- Compressor cut off when door is open, minimizes frosting.
- Autoclavable rotor with O-ring sealed lid.
- 1.5/2ml rotor and aerosol tight PCR rotor.

Warranty: Three years from the date of installation



**Technical Specifications:**  
**Bio- Safety Cabinet**

- The Bio safety cabinet should be Type A2 in which 70% Air should be re-circulated and 30% of the air should be exhausted. System width 4 ft.
- The motor must automatically adjust the airflow speed without the use of a damper to ensure continuous safe working conditions, even without maintenance adjustments.
- In order to preserve safety to the user and the environment, exhaust blowers must automate balancing of downflow and inflow/exhaust velocities.
- In order to ensure consistent and reliable down flow velocity across the supply HEPA filter over the life of the cabinet, the cabinet must use a pressure sensor (rather than anemometer) to detect pressure drop across the supply filter, rather than in just one point across the down flow.
- The microprocessor must display the airflow velocities in real-time on an LED display to ensure the user knows whether or not the cabinet is working under safe operating conditions.
- The cabinet noise level must be 65 dB(A) or less for a 4 foot cabinet.
- The Biosafety Cabinet should have microprocessor controller and same must be located on a slanted front panel so it is easy to see and reach from a seated working position in front of the cabinet.
- The cabinet must automatically reduce fan/blower motor speed to 30% when the front window sash is in closed position to ensure reduced energy consumption when the cabinet is not in use.
- In order to provide maximum effectiveness, efficiency and safety to laboratory Personnel, UV light must be programmable to allow for specific exposure times from 30 minutes to 24 hours.
- The Cabinet should have provision to fit taps for Vacuum, Water and Non Combustible Gas
- The Bio safety Cabinet should be NSF certified.
- The Bio safety cabinet should incorporate HEPA filter of the class H14 EN 1822 or better and having minimum efficiency of 99.995% at 0.3  $\mu\text{m}$  particle size.
- Ventilation System Exhaust and Inflow air volume approx 300-350 CFM .
- Heat Emissions at 25C should be approx 0.2 KW or lesser.
- The cabinet Should be provided with Microprocessor controller and large LED display for inflow and Down flow air velocity and hours of operation, Audible and visual Alarms for HEPA filter failure, blower failure, airflow speed failure, Incorrect window position.

- The cabinet should be provided with adjustable Height Stand, UV Light and one set of detachable arms rest.
- Bio Safety Cabinet should be supplied with Electric Bunsen Burner with following specification.
- Power 500 Watt
- Safety indicator: LED
- Supplied with reflective internal stainless steel bowl, wire safety guard, retort stand and clamps.

Warranty: Three years from the date of installation