

INVITATION TO GLOBAL TENDER FOR SUPPLY OF EQUIPMENT

Sealed tender offers are invited in two separate sealed covers (Technical and Commercial offers) from eligible manufacturers/suppliers or their direct Indian agents for supply of the following equipments.

- 1. FERMENTOR WITH STERILIZABLE IN PLACE (SIP)**
- 2. AUTOCLAVABLE PHOTO BIOREACTOR**

Please send offers, ALONG WITH DESCRIPTIVE CATALOGUE/ BROCHURE. The validity of the bid should be at least four months (120 days) or more from the date of opening of this tender. Please ensure that your quotation reaches not later than **15.02.2012 at 1600 hrs** at the following address:

Prof. Debabrata Das
Department of Biotechnology
Indian Institute of Technology Kharagpur
Kharagpur - 721302,
Dist. - West Midnapore,
West Bengal, India

Earnest money as detailed below for each equipment is to be deposited in the form of Account payee Demand Draft in favor of IIT Kharagpur, payable at Kharagpur, India. Any Bid which is not accompanied with an EMD shall be summarily rejected. Earnest money deposited will be forfeited if the tenderer withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender. No interest will be paid on the earnest money of the unsuccessful bidders.

Please indicate on the top of the separate envelope

Item. No.1: **FERMENTOR WITH STERILIZABLE IN PLACE (SIP) --- Rs. 30,000/-**

Item. No 2: **AUTOCLAVABLE PHOTO BIOREACTOR ----- Rs. 20,000/-**

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| Tender Reference | IIT/SRIC/BT/HPB / ABP/ENQ/FERMENTOR & PHOTOBIOREACTOR/2011-12 dated 12.01.2012 |
| Price of Tender Document | Nil |
| Last Date and Time for submitting the tender document | 15.02.2012 at 1600 hrs (Indian time) |
| Date and Time of opening of Technical Bid and Commercial Bid | Will be informed later |
| Address of Communication | As stated above |
| Contact Telephone Numbers | Phone: +91 - 3222 - 283758 (0) |
| E-mail: | ddas.iitkgp@gmail.com |

DETAILED SPECIFICATION OF THE EQUIPMENT

1. FERMENTOR WITH STERILIZABLE IN PLACE (SIP)

Refurbished/ demo unit/ used instruments or parts is NOT allowed; the **FERMENTOR** should be of the same manufacturer)

The **FERMENTOR** will be used for cultivation of bacteria in a controlled condition to maximize product yield. The major components and other details are listed below:

| Sl. No. | SPECIFICATIONS: |
|---------|---|
| 01 | Bench Top Sterilizable in place (SIP) Fermentor Total volume: 20-30 Liter Working volume: 15-22.5 Liter, with aspect ratio 3:1. |
| 02 | The vessel should be automatic sterilized on the bench without the need of external steam generator. |
| 03 | Fermentor should be capable of reaching sterilization temperature upto atleast 121°C and temperature control during fermentation batches should be about maximum 5° to 70°C or above, display in 0.1°C increment with temperature rises of approx 1°C / minute. |
| 04 | The system should have a powerful Reactor Process Controller providing integrated control of up to 24 or more process parameters; with a capability of trending 8 parameters simultaneously and storage of up to 10 recepies. |
| 05 | The system should come with top magnetic drive with single mechanical seal, RPM 50 - 1000 rpm. |
| 06 | The system should have three numbers six-bladed Rushton impellers and four 316L removable stainless steel baffles, (other impellers) like marine blade, pitch blade impellers should be optionally quoted. |
| 07 | The system should have bottom drain valve for harvesting. |
| 08 | The system should be supplied with Stainless Steel Exhaust Condenser on head plate. |
| 09 | The fermentor should have advanced touch screen interface provides easy to read displays of current values, cascade loops sterilization cycles etc. |
| 10 | The above system should be CGMP compliant and validatable and should be capable of automatic sterilization using labs' water supply (RO Water). |
| 11 | The above system should have provision for interchanging vessels of any size (smaller than the quoted one) at any time in future without buying any controllers. |
| 12 | The system should have one Thermal Mass Flow Controller (TMFC) for automated gas control and display of Gas Flow rate on the touch screen with 4 Gas Mix Controller built in. |
| 13 | The system should be designed and built to CE standards. |
| 14 | The system should come with three built in Assignable Peristaltic Pumps for addition harvest, foam, level etc. |
| 15 | The system should have at least 7 analog input and 7 analog output for integrating any external devices like scales analyzers, sensors, external pumps for optimizes yields. |
| 16 | The system should have standard safety features like sanitary rupture disk in the vessel and ASME safety release valve on the drain jacket as a standard feature. |

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| 17 | The system should have illuminated sight glass 1 and ½” window and momentary light for clear viewing of vessel contents. |
| 18 | The system should have sufficient ports in the Headplate for Exhaust / Harvest / Sampling Thermowell / Light /Septum / pH (2 - 14)/ DO (0 - 200%) etc. |
| 19 | Probes for turbidity & dissolved CO ₂ measurement. |
| 20 | The system should come with 2 USB ports for importing firmware / software upgrades and exporting trained data. |
| 21 | The above system should come with a supervisory control and data acquisition software (SCADA) as option for automated control and data processing of all parameters through PC. |
| 22 | The system should be quoted with suitable Chiller, Oil-free compressor to be supplied by the renowned manufacturer (India or abroad). |
| 23 | Latest branded PC, printer and Voltage stabilizer to be quoted from local source. |
| | WARRANTY: 5 years standard warranty |

2. AUTOCLAVABLE PHOTO BIOREACTOR

(Refurbished/ demo unit/ used instruments or parts is NOT allowed; the **AUTOCLAVABLE PHOTOBIOREACTOR** should be of the same manufacturer)

The **AUTOCLAVABLE PHOTOBIOREACTOR** will be used for cultivation of algal biomass in a controlled condition to maximize productivity. The major components and other details are listed below:

| Sl. No. | SPECIFICATIONS: |
|---------|---|
| 01 | System should have total volume up to 1.9 L and working volume should have 1.6 to 1.8 L maximum. |
| 02 | The reactor vessel should be fully autoclavable |
| 03 | Photobioreactor should have a layer thickness of around 2 cm flat panel culture vessel to get uniform irradiation strength for the entire culture without shadowing effects |
| 04 | System should have the airlift process to mix the culture gently yet effectively in asymmetrical shape of the head space reducing foam formation and bio fouling during runs the culture vessel. |
| 05 | System should have a total of 260 water-cooled high-power LEDs, focused with reflectors to get reproducible light source with a long service life. The maximal irradiation intensity should have approx. 3000 $\mu\text{mol}/\text{m}^2\text{s}$. |
| 06 | System should have continuously variable electronic dimming from 0-100% facilitates the precise adjustment of light intensity. When used in conjunction with operating software parallel bioprocess control software, not only are on/off cycles possible, but even the simulation of a daylight curve. |
| 07 | System should have options for using other light colours such as red, blue, UV-A or infrared provision so that the dimming of three colours independently of one another, allowing a dynamic change to the spectrum to be achieved. |

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| 08 | System should come along with following parameters like Temperature, light, pH, pO ₂ and antifoam/level. |
| 09 | System should include touch screen controller for operating the system |
| 10 | Other parameters like Gas mix, mass flow, feed pump and DCO ₂ to be mentioned in options. |
| 11 | Options for software to control through computer |
| 12 | The system should be designed and built to FDA standards. |
| 13 | WARRANTY: 5 years standard warranty |

IMPORTANT INSTRUCTIONS

PLEASE SPECIFICALLY INDICATE THE FOLLOWING POINTS IN YOUR QUOTATIONS AND COMPLY THE TERMS AS MENTIONED HEREUNDER:-

1. PRICES ARE TO BE QUOTED ON 'EX-WORKS' DULY PACKED OR ON "F.O.B. INTERNATIONAL PORT" BASIS AND ALSO INCLUDING AGENCY COMMISSION PAYABLE TO YOUR INDIAN AGENTS, IF ANY SHOWING CLEARLY THE FOLLOWING BREAK UP:-
 - i) Ex-Works Price
 - ii) Packing & Forwarding
 - iii) Freight
 - iv) Any other relevant expenses.
 - v) Taxes payable by the Institute

Insurance will be paid by our Institute separately and should not form part of the quoted price.
2. INDIAN AGENTS ADDRESS AND PERCENTAGE OF AGENCY COMMISSION INCLUDED IN ABOVE F.O.B./EX-WORKS PRICE. (THIS WILL BE PAID TO THE INDIAN AGENTS IN INDIAN RUPEES ONLY) AND NOT IN **FE**. PLEASE ENCLOSE COPY OF AGENCY AGREEMENT ENTERED INTO WITH YOUR PRINCIPALS INDICATING THE NATURE OF AFTER SALES SERVICES OF INDIAN AGENTS, PRECISE RELATIONSHIP & MUTUAL INTEREST IN THE BUSINESS.
3. MEASUREMENTS/WEIGHT: NETT/GROSS OF THE CONSIGNMENT AND ESTIMATED AIR FREIGHT CHARGES FROM YOUR INTERNATIONAL PORT TO KOLKATA (INDIA). IN CASE OF AN ORDER, YOU SHALL USE AIR WORTHY PACKAGE (AS APPLICABLE) DULY CERTIFIED WITH DOCUMENTS - PLYTO - SANITARY CERTIFICATE (AS PER QUARANTINE ORDER 2003).
4. ESTIMATED SEA-FREIGHT (IF APPLICABLE) CHARGES FROM YOUR F.O.B. SEAPORT TO KOLKATA SEA-PORT, INDIA.
5. YOUR BANKER'S ADDRESS.
6. WHETHER ANY EXPORT LICENCE IS REQUIRED FROM YOUR GOVERNMENT, IF SO, PLEASE CONFIRM WITH DETAILS.

7. OURS BEING A GOVERNMENT OF INDIA ORGANISATION, WE PREFER "SIGHT DRAFT" TERMS OF PAYMENT. PLEASE CONFIRM ACCEPTANCE OF THE SAME. NO ADVANCE PAYMENT. L/C IN EXCEPTIONAL CASES ONLY.
8. TECHNICAL CATALOGUE/LEAFLET SHOULD BE ENCLOSED WITHOUT FAIL.
9. PLEASE CONFIRM WHETHER YOU ARE AUTHORISED TO QUOTE ON BEHALF OF YOUR PRINCIPALS AND IF SO, PLEASE ENCLOSE A COPY OF SUCH AUTHORISATION WITH YOUR QUOTATION.
10. THE SUPPLIER SHALL PROVIDE A COPY OF THE INSURANCE POLICY ALONG WITH INVOICE TO THE PURCHASER WHO MAKE ARRANGEMENTS TO EXTEND THE VALIDITY OF THE POLICY, IF NECESSARY.
 - (A) THE SUPPLIER SHALL INITIATE AND PURSUE CLAIM TILL SETTLEMENT, AND
 - (B) PROMPTLY MAKE ARRANGEMENTS FOR REPAIR AND / OR REPLACEMENT OF ANY DAMAGED ITEM (S) IRRESPECTIVE OF SETTLEMENT OF CLAIM BY THE UNDERWRITERS.
11. FOREIGN SUPPLIERS ARE REQUESTED TO SEND THEIR OFFER INDICATING THE COMMISSION PAYABLE TO THE INDIAN AGENT DIRECTLY TO US FOR CONSIDERATION.
12. COUNTRY OF ORIGIN.
13. BANK CHARGES ON LC/SD (BOTH WITHIN INDIA AND OUTSIDE INDIA) SHALL BE TO YOUR ACCOUNT.
14. THE INSTITUTE SHALL PROVIDE THE CUSTOM DUTY EXEMPTION CERTIFICATE AGAINST GENERAL EXEMPTION NO. 37 [NOTIFICATION. NO. 10/97-CE, DATED 1.3.1997 AS AMENDED BY 16/07 CE].
15. LIQUIDATED DAMAGES: THE STORES SHOULD BE DELIVERED / DISPATCHED TO DESTINATION AND READY FOR OPERATION NOT LATER THAN THE DELIVERY DATE SPECIFIED. IF THE SUPPLIER FAILS TO DELIVER ANY OR ALL THE STORES OR PERFORM THE SERVICE BY THE SPECIFIED DATE, LIQUIDATED DAMAGES AT 1% PER MONTH OR PART THEREOF IN RESPECT OF THE VALUE OF STORES WILL BE DEDUCTED FROM THE CONTRACT PRICE SUBJECT TO A MAXIMUM OF 5%. ALTERNATIVELY, THE ORDER WILL BE CANCELLED AND THE UNDELIVERED STORES PURCHASED FROM ELSEWHERE AT THE RISK AND EXPENSE OF SUPPLIER.
16. PATENT RIGHTS: THE SUPPLIER SHALL INDEMNIFY THE PURCHASE AGAINST ALL THIRD PARTY CLAIMS OF INFRINGEMENT OF PATENT, TRADEMARK OR INDUSTRIAL DESIGN RIGHTS ARISING FROM USE OF THE GOODS OR ANY PART THEREOF IN INDIA.
17. TENDERS ARE INVITED IN DUPLICATE SETS COMPLYING THE REQUIREMENT FOR TENDER AS DETAILED IN THE TENDER SPECIFICATION TO BE SUBMITTED IN THE COMPANY'S / FIRM'S LETTERHEAD NEATLY PRINTED / TYPED DULY SIGNED BY AUTHORIZED PERSON WITH THE SEAL OF THE BIDDERS. ALL ENVELOPES CONTAINING THE TENDER SHOULD BE PROPERLY SEALED. SEPARATE ENVELOPES

SHOULD BE USED FOR TECHNICAL AND PRICE BID AND INDICATION TO THEIR EFFECT MAY PLEASE BE SUPERSCRIBED ON THE ENVELOPE.

18. PRICE BIDS WILL BE OPENED ONLY FOR THOSE BIDDERS WHO'S TECHNICAL BIDS HAVE BEEN FOUND TO BE ACCEPTABLE.
19. ONLY THOSE BIDDERS WHO'S BIDS HAVE BEEN TECHNICALLY FOUND ACCEPTABLE WILL BE INVITED FOR PARTICIPATION IN THE PRICE BID. OPENING DATE AND TIME OF WHICH WILL BE CONFIRMED LATER ON.
20. THE INSTITUTE DOES NOT BIND ITSELF TO OFFER ANY EXPLANATION TO THOSE BIDDERS WHO'S TECHNICAL BIDS HAVE NOT BEEN FOUND ACCEPTABLE BY THE EVALUATION COMMITTEE OF THE INSTITUTE.
21. THOSE BIDDERS WHO DO NOT RECEIVE ANY COMMUNICATION FOR PARTICIPATION IN PRICE BID OPENING MEETING MAY PRESUME THAT THEIR BIDS HAVE NOT BEEN ACCEPTED BY THE INSTITUTE.
22. PERIOD OF VALIDITY: BIDS SHALL REMAIN VALID FOR ACCEPTANCE FOR A PERIOD OF 120 DAYS FROM THE DATE OF OPENING.
23. CONDITIONAL OFFER WILL NOT BE ACCEPTED.
24. LATE TENDERS I.E. TENDER RECEIVED AFTER THE DUE DATE AND TIME OF SUBMISSION AS MENTIONED ABOVE SHALL NOT BE ACCEPTED.
25. BIDDERS TO ENCLOSE THE FOLLOWING DOCUMENTS:-
 - A) CURRENT INCOME TAX AND SALES TAX CLEARANCE CERTIFICATES AND PAN NO.
 - B) BANKER'S SOLVENCY CERTIFICATE
 - C) SUMMARY OF AUDITED STATEMENT OF ACCOUNTS FOR THE LAST THREE YEARS TO BE ENCLOSED AND FINANCIAL HIGHLIGHTS AND THE KEY PERFORMANCE DURING THE LAST THREE QUARTERS TO BE ENCLOSED AS PER FORMAT:-

COMPANY'S KEY PERFORMANCE

| DESCRIPTION | JAN. TO MARCH | APRIL TO JUNE | JULY TO SEPT. |
|--------------------|---------------|---------------|---------------|
| GROSS REVENUE | | | |
| PROFIT BEFORE TAX | | | |
| PROFIT AFTER TAX | | | |
| RETURN ON INVESTED | | | |
| CAPITAL (ROIC) | | | |

- D) CUSTOMER SATISFACTION CERTIFICATE FROM ONE SUCH ORGANIZATION IS TO BE ATTACHED WITH THE TECHNICAL BID AND PRICE BID.

E) NAME AND ADDRESS OF MINIMUM TWO CLIENTS TO WHOM SUCH EQUIPMENT HAVE BEEN SUPPLIED SHOULD BE MENTIONED.

26. ALL TENDERS (UNLESS OTHERWISE SPECIFIED) ARE TO BE SUBMITTED / HANDED OVER TO PROF. DEBABRATA DAS, DEPARTMENT OF BIOTECHNOLOGY, INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR - 721 302 AND ACKNOWLEDGEMENT TO BE OBTAINED.
27. THE PERSON / OFFICER SIGNING THE TENDER / BID DOCUMENTS SHOULD BE DELEGATED WITH AN APPROPRIATE POWER OF ATTORNEY (DULY ENDORSED BY A NOTARY PUBLIC) BY THE CHIEF EXECUTIVE OFFICER OF THE COMPANY TO SIGN SUCH DOCUMENTS.
28. WARRANTY / GUARANTEE: THE WARRANTY / GUARANTEE SHALL REMAIN VALID FOR FIVE YEARS AFTER THE GOODS (OR ANY PORTION THEREOF AS THE CASE MAY BE) HAVE BEEN DELIVERED AND COMMISSIONED AT THE FINAL DESTINATION AS INDICATED ABOVE.

IMPORTANT

1. IIT Kharagpur authority may accept or reject any or all the bids in part or in full without assigning any reason and does not bind itself to accept the lowest bid. The Institute at its discretion may change the quantity / upgrade the criteria / drop any item or part thereof at any time before placing the Purchase Order.
2. In case of any dispute, the decision of the Institute authority shall be final and binding on the bidders.
3. For any query pertaining to this bid document correspondence may be addressed to Prof. Debabrata Das, at the address mentioned above.

LAST DATE FOR SUBMISSION OF SEALED BIDS: 15.02.2012

N.B.:

- 1) Please Note that the Institute remains closed during Saturdays & Sundays.
- 2) Fax, e-mail Tender will not be accepted. Duplicate Bid document must be submitted in separate closed cover.
- 3) General Terms and Conditions as stated above related to supply of stores / equipments /assets etc. and for specific service other terms and conditions of the Institute will apply.
