

	<b>INDIAN INSTITUTE OF TECHNOLOGY MADRAS</b> Chennai 600 036  Telephone: [044] 2257 9798/9723 E-mail: <a href="mailto:arpp@iitm.ac.in">arpp@iitm.ac.in</a>	
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Senior Manager (Project Purchase)

Ref: CHY/BRAJ/006/2019  
Date: 14.05.2019

**Open Tender No: CHY/BRAJ/006/2019**

**Due Date: 4<sup>th</sup> June 2019, 3 PM**

**Pre-Bid meeting: - Not required.**

**Technical Bid opening meeting on 6<sup>th</sup> June 2019, 4:00 PM at Department of Chemistry, IIT-Madras.**

Dear Sir/Madam,

On behalf of the Indian Institute of Technology Madras, offers are invited for the supply of "**The Dye laser for CRD spectrometer**" conforming to the specifications given in Annexure I.

**Instructions to the Bidder**

- I. **Preparation of Bids:** - The tenders should be submitted under two-bid system (i.e.) Technical bid and Financial bid.
- II. **Delivery of the tender:** - The tender shall be sent to the addresses mentioned below, either by post or by courier so as to reach our office before the due date and time specified in our schedule. The offer/bid can also be dropped in the tender box on or before the due date and time specified in the schedule.  
The tender box is kept in the office of the:  
  
**Senior Manager,  
Project Purchase,  
IC & SR Building 2<sup>nd</sup> floor,  
I.I.T. Madras,  
Chennai - 600 036.**
- III. **Opening of the tender:** - The offer/bids will be opened by a committee duly constituted for this purpose. The technical bids will be opened first and will be examined by a technical committee which will decide the suitability of the bids as per our specifications and requirements. All bidders will be invited for opening of the technical bids. With respect to opening the financial bid, only technically qualified bidders will be called.

- IV. **Prices:** - The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges to the **Department of Chemistry**. The offer/bid should be exclusive of taxes and duties. The percentage of tax & duties should be clearly indicated separately. Kindly note that IIT Madras is eligible for concessional GST and relevant certificate will be issued.

In case of import supply, the price should be quoted without custom duty. IIT Madras is exempted from levy of IGST on Imports and eligible for concessional custom duty (not exceeding 5%) and the price should be quoted on EX-WORKS and CIP basis indicating the mode of shipment.

- V. **Agency Commission:** - Agency commission, if any, will be paid to the Indian agents in rupees after receipt of the equipment and its satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in the tender document even in the case of 'Nil' commission. The tenderer should indicate the percentage of agency commission to be paid to the Indian agent. The foreign Principal should indicate the percentage of payment and it should be included in the basic price quoted originally (if any)..
- VI. **Terms of Delivery:** - The item should be supplied to the **Department of Chemistry, IIT Madras** as per the Purchase Order. In case of import supply, the item should be delivered at the cost of the supplier to our Institution. The Installation/Commissioning should be completed as specified in our important conditions.
- VII. **Technical Bid Opening:** The technical bid will be on 6<sup>th</sup> June, 2019, 4:00 PM at the **Department of Chemistry, IIT-Madras**. The financial bids of those tenders who are technically qualified will be opened at a later date under intimation to them.
- VIII. **IIT Madras** reserves the full right to accept / reject any tender at any stage without assigning any reason.

Yours sincerely,



d Senior Manager (Project Purchase)  
IC&SR Building, I.I.T. Madras,  
Chennai - 600 036.

## SCHEDULE

### Important Conditions of the tender

1. The due date for the submission of the tender is **04.06.2019, 3 PM.**

The offers / bids should be submitted in two bids systems (i.e.) Technical bid and financial bid. The Technical bid should consist of all technical details / specifications only. The Financial bid should indicate item-wise price for each item and it should contain all Commercial Terms and Conditions including Taxes, transportation, packing & forwarding, installation, guarantee, payment terms, pricing terms etc. The Technical bid and financial bid should be put in separate covers and sealed. Both the sealed covers should be put in a bigger cover. The Open Tender for supply of "**The Dye laser for CRD spectrometer**" should be written on the left side of the Outer bigger cover and sealed.

2. **EMD: - The EMD in the form of account payee DD for 2% value of the item in favor of The Registrar - IIT Madras, payable at Chennai should be enclosed in the cover containing financial bid.** Any offer not accompanied with the EMD shall be rejected summarily as non-responsive.

The EMD of the unsuccessful bidders shall be returned within 30 days of the end of the bid validity period. The same shall be forfeited, if the tenderers withdraw their offer after the opening during the bid validity period. The Institute shall not be liable for payment of any interest on EMD. EMD is exempted for Micro and Small Enterprises (MSE) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME).

3. **Performance Security: -** The successful bidder should submit Performance Security for an amount of 5% of the value of the contract/supply. The Performance Security may be furnished in the form of an Account Payee DD, FD Receipt from the commercial bank, Bank Guarantee from any nationalized bank in India. **The performance security should be furnished within 21 days from the delivery of the purchase order.**

**Performance Security in the form of Bank Guarantee:-** In case the successful bidder wishes to submit Performance Security in the form of Bank Guarantee, the Bank Guarantee should be routed through the Beneficiary Bank to the end user bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee from a Nationalized Bank of India.

The Bank Guarantee should remain valid for a period of sixty days beyond the date of completion of all contractual obligations of the supplier including the warranty obligations.

4. **Indian agent:** If an Indian agent is involved, the following documents must be enclosed:  
Foreign principal's proforma invoice indicating the commission payable to the Indian Agent and nature of after-sales service to be rendered by the Indian Agent.
  - ✓ Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business.
5. The offer/bids should be sent only for a machine that is available in the market and supplied to a number of customers. A list of customers in India and abroad with details must accompany the quotations. Quotations for a prototype machine will not be accepted.
6. Original catalogue (not any photocopy) of the quoted model duly signed by the principals must accompany the quotation in the Technical bid.
7. Compliance or Confirmation report with reference to the specifications and other terms & conditions should also be obtained from the principal.

8. **Validity:** Validity of Quotation not less than 90 days from the due date of tender.
9. **Delivery Schedule:** - The tenderer should indicate clearly the time required for delivery of the item (subjected to the executive committee-IITMadras approval). In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.  
If there is delay, the penalty will be @1% per week of delay subject to a max of 10% of the value of purchase order and if the delay is more than accepted time frame by IITM, the PO would be cancelled and liquidated damages will be enforced.
10. **Risk Purchase Clause:-** In the event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from other sources on the total risk of the supplier under risk purchase clause.
11. **Payment:-**
- (i) No Advance payment will be made for Indigenous purchase. However 90% Payment against Delivery and 10% after installation are agreed to wherever the installation is involved. In case of import supplies the payment will be made only through 100% Letter of Credit i.e. (90% payment will be released against shipping documents and 10% after successful installation wherever the installation is being done).
  - (ii) **Advance Payment:** No advance payment is generally admissible. In case of specific percentage of advance payment is required, the Foreign Vendor has to submit a Bank Guarantee equal to the amount of advance payment and it should be routed through the Beneficiary Bank to the end user Bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee through a Nationalized Bank of India.
12. **On-site Installation:** - The equipment or machinery has to be installed or commissioned by the successful bidder within 15 to 20 days from the date of receipt of the item at site of IIT Madras.
13. **Warranty/Guarantee:** - The offer should clearly specify the warranty or guarantee period for the machinery/equipment. Any extended warranty offered for the same has to be mentioned separately (For more details please refer our Technical Specifications).
14. **Late offer:** - The offers received after the due date and time will not be considered. The Institute shall not be responsible for the late receipt of Tender on account of Postal, Courier or any other delay.
15. **Acceptance and Rejection:** - I.I.T. Madras has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.
16. **Do not quote the optional items or additional items unless otherwise mentioned in the Tender documents / Specifications.**

**17. Disputes and Jurisdiction:**

**Settlement of Disputes:** Any dispute, controversy or claim arising out of or in connection with this PO including any question regarding its existence, validity, breach or termination, shall in the first instance be attempted to be resolved amicably by both the Parties. If attempts for such amicable resolution fails or no decision is reached within 30 days whichever is earlier, then such disputes shall be settled by arbitration in accordance with the Arbitration and Conciliation Act, 1996. Unless the Parties agree on a sole arbitrator, within 30 days from the receipt of a written request by one Party from the other Party to so agree, the arbitral panel shall comprise of three arbitrators. In that event, the supplier will nominate one arbitrator and the Project Coordinator of IITM shall nominate on arbitrator. The Dean IC&SR will nominate the Presiding Arbitrator of the arbitral tribunal. The arbitration proceeding shall be carried out in English language. The cost of arbitration and fees of the arbitrator(s) shall be shared equally by the Parties. The seat of arbitration shall be at IC&SR IIT Madras, Chennai.

- a. **The Applicable Law:** This Purchase Order shall be construed, Interpreted and governed by the Laws of India, Court at Chennai shall have exclusive jurisdiction subject to the arbitration clause.
- b. Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Chennai in Tamil Nadu.

18. All Amendments, time extension, clarifications etc., will be uploaded on the website only and will not be published in newspapers. Bidders should regularly visit the above website to keep themselves updated. No extension in the bid due date/ time shall be considered on account of delay in receipt of any document by mail.

**Acknowledgement:** - It is hereby acknowledged that the tenderer has gone through all the conditions mentioned above and agrees to abide by them.

**SIGNATURE OF TENDERER  
ALONG WITH SEAL OF THE  
COMPANY WITH DATE**

## ANNEXURE I

### Technical specifications for the Dye laser for CRD spectrometer

Quotations are invited in a two bid format for the purchase of dye laser to lase with a maximum of 10 Hz repetition rate, from reputed manufacturers/their authorized agents in India. The agent should have at least two installations of dye lasers in the past two years from the date of this tender. The references of such installations should be provided along with the bids. They should also have sufficient number of factory trained engineers available locally (in India) to provide quick post sales service support. Separate copies of certificates of the trained engineers along with their names should be enclosed along with the bids.

The technical specifications of the Dye laser for the CRD spectrometer are given below.

#### **1. Dye laser's Tunability:**

The dye laser's fundamental tunability should be from ~ 350 to 900 nm. The dye laser should be able to give ~ 210 - 400 nm after necessary doubling/tripling of the fundamental wavelength. All the necessary crystals to cover the entire tunable wavelength region (~ 210 – 900 nm) should be provided with the necessary thermally stabilized housing. Appropriate beam walk compensators should be provided and the beam should not change its position either during doubling or scanning. In other words, the beam pointing should be intact. The system should be provided with a very high precision auto tracker.

#### **2. Energy efficiency:**

- > 25% @ peak of R6G and DCM dyes (532 nm pump)
- ≈ 15% @ peak of Coumarine 47 or equivalent dye (355 nm pump)

#### **3. Pumping specifications:**

The dye laser should primarily be able to be pumped by 355 nm and 532 nm wavelengths independently. Switching over option from 355 nm pumping to 532 nm pumping should be possible by changing the relevant optics in the dye laser and the necessary optics should be provided along with the laser. However, they should have the kinematic mounts to avoid any further alignment. The necessary polarizer and the corresponding opto-mechanic mount should be included for the pumping with 355 nm. The dye laser's optics should be capable of handling the pump energies of at least 1 J @532 nm and 350 mJ@355 nm.

#### **4. Line width:**

The line width of the dye laser's output should be in the range of 0.08 - 0.05  $\text{cm}^{-1}$ . The fundamental dye laser's tuning wavelength range should be achieved by one/two gratings (1800/2400 l/mm) to cover the wood's anomaly. Change of gratings should not affect the alignment. If change of grating is necessary, the kinematic mounts should be preferred, to avoid any misalignment. Switching from one grating to another should be possible without any further alignment or minimal alignment in our laboratory itself. The software should support the dye laser with both the grating configurations.

### **5. Tuning mechanism:**

The scanning of the dye laser output should be completely automatic; in other words, full auto-tracking with software control should be provided. A very high precision auto-tracker should be used for this purpose, as we will be scanning the complete range of the dye laser output with a resolution of 0.001 nm.

### **6. Wavelength separation:**

A unit comprised of four pelin broca prisms should be used to separate the fundamental and harmonic (doubled/tripled) wavelengths. The beam should not walk after the wavelength separation. In other words, the output beam pointing should be intact.

### **7. Interface:** USB 2.0/3.0/ RS-232/ in the order of priority

### **8. Beam specifications:**

a) Pulse duration:	5-10 ns
b) Line width:	0.08 - 0.05 $\text{cm}^{-1}$
c) Beam Size:	3 to 6 mm
d) Wavelength stability:	$<0.002 \text{ nm}/^{\circ}\text{C}$
e) Frequency Stability:	$0.005 \text{ cm}^{-1}/^{\circ}\text{C}/\text{hr}$
f) Wavelength reproducibility:	$\leq 0.005 \text{ nm}$
g) Wavelength accuracy:	$\leq 0.02 \text{ nm}$
h) Energy stability:	$\leq \pm 2.5 \%$
i) ASE:	$< 0.5 \%$ within centre of the tuning range
j) Polarization:	vertical
k) Time jitter:	$\leq 2 \text{ ns}$
l) Divergence:	$\leq 0.5 \text{ mrad}$
m) Beam shape:	Circular/Gaussian

### **General specifications:**

- a) The laser should be installed in our laboratory by a technical expert of either the manufacturer or the supplier. A complete training should be given on operation, maintenance of the laser. The technical expert of the dye laser should be able to integrate the pump laser (Model: Surelite III-10 Pulsed Nd:YAG laser) and complete the installation by demonstrating the quoted output energies in the UV/visible regions.
- b) Suitable dye circulator with suitable dye cells (to attain a circular/Gaussian beam) should be provided with the system. An additional dye circulator should be supplied.

- c) A minimum of 3 grams of the necessary dyes for the demonstration purpose should be provided with the system. Solvents will be supplied by us for the installation.
- d) At least 10 dye filters have to be supplied with the system.
- e) Necessary optics with suitable opto mechanics to couple with the pump laser (Pulsed Nd:YAG laser of any manufacturer) should be provided. The threshold of the optics should be  $5 \text{ J cm}^{-2}$ .
- f) The dye laser should have the facility to control all its parameters using an external laptop/PC. The necessary cables to do this should be supplied. The computer will be provided by us at the time of installation.
- g) LabView drivers and necessary ASCII codes to control the laser externally should also be provided along with the laser's software. We should be able to control all the laser parameters using LabView/third party software by integrating the provided LabView/ASCII drivers.
- h) Software for controlling the hardware and automatic scanning of the dye laser should be provided with the laser. LabView drivers and necessary ASCII codes to control the automatic scanning should be provided with the system to enable us to integrate the dye laser system with our LabView software.
- i) We should be able to scan the entire wavelength region ( $\sim 210\text{-}900 \text{ nm}$ ) in the step size of  $0.001 \text{ nm}$ . In this process, we should not see any abnormal jumps in the dye laser's output wavelengths. In simple words, the scanning should be a very smooth process.
- j) A complete dye chart with the complete information about the concentrations of the dyes and the solvents to cover the entire range of wavelengths should be provided with the system.
- k) All the necessary cables, power adapters and noise free BNC cables should be supplied with the laser.
- l)  $220\text{VAC}@50\text{Hz}$ , single phase power supply to control the laser is mandatory to meet the input requirements at IIT Madras, India.
- m) At least two sets of safety glasses to work with the dye laser in the entire wavelength region should be provided.
- n) A minimum of 2 years warranty for the complete system should be provided. An additional one year warranty should also be quoted as an optional item.
- o) A list of references in India, where similar systems have been installed, **must be provided** and this will be taken very seriously while making the decision. **Your post sales service feedback will be certainly a deciding factor.**