



**INDIAN INSTITUTE OF TECHNOLOGY MADRAS**  
**Chennai 600 036**

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Prof. Pradeep T  
Project Coordinator

Ref: CHY/TPRA/2019-20/012/SPLX  
Dated: 28.01.2020

Limited Tender No: CHY/TPRA/2019-20/012/SPLX

**Due Date: 17.02.2020, 5:00pm**

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

**Technical Bid opening meeting on Due Date: 18.02.2020, 4:00pm**

Dear Sir/Madam,

On behalf of the Indian Institute of Technology Madras, offers are invited for the supply of **“ORGANIC SYNTHESIZER”** conforming to the specifications given in (**Annexure-I**).

**Terms and Conditions of Limited Tender**

- 1. Preparation of Bids:** - The Limited tenders should be submitted under **Two bid system** (i.e.) Technical- and -Financial bid.
- 2. Delivery of the tender:** - The tender shall be sent to the below-mentioned addresses either by post or by courier (duly sealed and super scribed on the envelope with the reference No and due date) so as to reach the following address before the due date and time specified in our Schedule:  
**Prof. Pradeep T,**  
**Department of Chemistry**  
**IIT Madras**  
**Chennai - 600 036.**
- 3. Price:** - The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges to **Department of Chemistry**.
  - a. The offer/bid should be exclusive of taxes and duties. The percentage of tax & duties should be clearly indicated separately. IIT Madras is eligible for concessional GST and relevant certificate will be issued.
  - b. 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 (stating the Cost, Insurance, Freight separately) and indicating the mode of shipment.
- 4. Terms of Delivery:** - The item should be supplied to our Departments as per 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.
- 5. Catalogue:** Original catalogue (not any photocopy) of the quoted model duly signed must accompany the quotation in the Technical-cum-financial bid
- 6. Late offer:** - The offers received after the due date and time will not be considered

7. **Payment:** - 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).
8. **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.
9. **On-site Installation:** - The equipment or machinery has to be installed or commissioned by the successful bidder within number of days (as prescribed by PI's) from the date of receipt of the item at site of IIT Madras.
10. **Warranty/Guarantee:** - The offer should clearly specify the warranty or guarantee period for the machinery/equipment.
11. **Validity:** Validity of Quotation not less than 60 days from the due date of tender
12. **Technical Bid Opening:** The technical bid will be opened on **18.02.2020, 4:00pm** at the **Department of Chemistry**, IIT Madras and the **financial bids** of those tenders who are technically qualified will be opened at a **later date under intimation to them**.
13. **Performance Security:** -The successful bidder should submit Performance Security for an amount of 5% of the value of the contract/supply within 21 days from the issue of work/purchase order. The Performance Security should be furnished in the form of an Account Payee DD / FD Receipt from the commercial bank (or) Bank Guarantee from any nationalized bank in India.
14. **Accept /Reject:** IIT Madras reserves the full right to accept / reject any tender at stage without assigning any reason.
15. **Settlement of Disputes:** 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.
16. **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.
17. **Unsolicited offers:** "This notice is being published **for information only** and is not an open invitation to quote in this limited tender. Participation in this tender is by invitation only and is limited to the selected registered suppliers. Unsolicited offers are liable to be ignored. However, suppliers who desire to participate in such tenders in future may apply for registration as per procedure." The Website for Registration of vendors is <http://web.iitm.ac.in/supplier/> and the mail address for queries is "[workflow@rt.iitm.ac.in](mailto:workflow@rt.iitm.ac.in)".

Yours sincerely,

**Prof. Pradeep T,  
Department of Chemistry  
IIT Madras  
Chennai - 600 036.**

**Tendering specifications for Organic synthesizer**

| Section | Specification                  | Parameters and subsections  |
|---------|--------------------------------|---|
| 1       | Application                    | a. Parallel Organic Synthesizer with pressure measurement and pressurized gas purging facility<br>b. Facility for conducting 5 set of independent experiment with individual/independent temp. control and Magnetic stirring with Reflux, Gas flushing, heating, cooling and stirring |
| 2       | Basic unit                     | a. Compact bench mounted table-top unit.<br>b. Epoxy/powder coated base unit<br>c. Material of liquid contact should be either glass and/or teflon<br>d. Maximum dimensions without chiller should fit into 1.5 x 1.5 x 1.5 ft (W x D x H)  |
| 3       | Reaction vessels               | Five reaction vessels with volume upto 60 mL  |
| 4       | Controller                     | Independent digital display and controller to set rpm and temperature for five reaction vessels   |
| 5       | Heating element and monitoring | a. Aluminium blocks with viewing window to cover reaction vessels<br>b. Teflon shutters to prevent dew condensation   |
| 6       | Stirring                       | Ferromagnetic stirring with independent rotation speed control for five reaction vessels with rpm varying from 100-1000 at full volume (60 mL)  |
| 7       | Reaction environment           | Options for vacuuming and inert gas purging by using branched reaction vessel and 3-way injection port  |
| 8       | Reflux                         | Should have option to attach cooling water manifold and dimorth condenser for reflux experiment   |
| 9       | Pressurized reaction vessel    | a. Option to perform reactions under high pressure with suitable accessories<br>b. Optional Independent pressure reaction vessel and controlled valve should be provided.   |

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|----|---------------------------------|--|
| 10 | Accessories                     | <p>Following accessories must be included with the equipment,</p> <ol style="list-style-type: none"> <li>Reactor tube with side neck (dia30 NS14/23, GL14), Quantity - 5pcs</li> <li>Dimroth condenser NS14/23, GL14, Quantity - 5 pcs</li> <li>Test tube adaptor (dia30), Quantity - 5 pcs</li> <li>Drip-proof cover (dia30), Quantity - 5 pcs</li> <li>Screw thread GL14 NS14/23, Quantity - 10 pcs</li> <li>Screw cap GL14 with hole, Quantity - 10 pcs</li> <li>Hose connection, Straight, Quantity - 10 pcs</li> <li>Suba seal, silicon rubber, for NS14, Quantity - 10 pcs</li> <li>Septum, natural rubber, for NS14, Quantity - 10 pcs</li> <li>Stirrer bar, Egg shape, dia 10x20 H for dia30 &amp; 34, Quantity - 5 pcs</li> <li>Keck clip NS14, TS15 metal, Quantity - 10 pcs</li> <li>Stopper (10 pcs/ pack)</li> <li>All the accessories and components required for the basic operation and maintenance of system should be included in the quotation to start full functioning of the system from the day of installation.</li> </ol> |
| 11 | Addition of reaction components | Must facilitate addition of reaction components through pipetting, Syringe, dripping funnel (with interchangeable joint)   |
| 12 | Safety features                 | Must have safety features such as double chamber, fuse, tray, variable overheat Protector (x5), low liquid level thermo protector.   |
| 13 | Temperature controller          | <ol style="list-style-type: none"> <li>Should have cooling cartridge</li> <li>Should facilitate independent temperature control for five reaction vessels with temperature varying from -10 – 160°C</li> <li>Accuracy of temperature control - <math>\pm 0.5</math></li> <li>Must facilitate temperature gradient control</li> <li>Should have direct interface with chiller for automatic temperature control of reactions at set value</li> </ol>  |
| 14 | Chiller                         | <p>Please quote for suitable floor standing chiller with the following specifications,</p> <ol style="list-style-type: none"> <li>Closed loop circulator</li> <li>CFC free refrigerant</li> <li>Temp. control range : -20°C to Ambient</li> <li>14 L/min or better flow rate</li> <li>Copper cooling coils</li> <li>Digital LED controller to adjust temperature with minimum digit of 1°C</li> <li>Indian power supply sockets.</li> </ol>  |
| 15 | Power supply                    | Indian power supply socket   |
| 16 | Certificates                    | <ol style="list-style-type: none"> <li>Certificate from ISO17025 accredited lab for temperature, pressure gauges &amp; timer should be supplied along with the equipment.</li> <li>Product should be ISO/CE certified</li> <li>Manufacturer and Supplier should have ISO certification for quality standards.</li> </ol>   |

|    |   |   |
|----|---|---|
| 17 | Operating manuals, service manuals, and other manuals | a. User, technical and maintenance manuals to be supplied in English language along with machine diagrams<br>b. List of equipment and procedures required for local calibration and routine maintenance<br>c. Service and operation manuals (original and copy) to be provided<br>d. Advanced maintenance tasks documentation<br>e. Certificate of calibration and inspection |
| 18 | Warranty  | 3 years comprehensive warranty after satisfactory installation and working including consumable parts and accessories.  |
| 19 | Compliance  | A detailed compliance statement for all the sections and subsections with supporting parameters must be attached with the response to the tender.   |
| 20 | Operation and maintenance support                     | Supplier must sign a contract for the warranty period as per the Annexure II  |
| 21 | Optional components                                   | Supplier must quote separately for the following components,<br>a. Pressure measurement and valve with pressurized gas purging facility<br>b. Pressure resistance vessel<br>c. Oil free diaphragm vacuum pump with following specifications, flow speed: 30L/min max for vacuum: <10 mbar   |

### Annexure II

This is a contract between \_\_\_\_\_ (referred as a supplier) and Department of Chemistry, IIT Madras (referred as beneficiary).

As per this contract, beneficiary will hold 10% of the total PO amount payable to the supplier until the end of three year comprehensive warranty period for the following list of services.

1. Service engineer must visit and solve the locally solvable issues of the equipment within two working days.
2. Any problem in the functioning of the equipment which requires replacement of the equipment parts; should be solved by supplier within four working days.
3. Upon any further delay in solving issues related to the equipment, an amount of 12500 INR per day will be deducted from the hold amount until the issue is solved.

Signed by,

Supplier

Date:

Place:

Beneficiary

Date:

Place: