

	INDIAN INSTITUTE OF TECHNOLOGY MADRAS	
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Dr. Krishnankutty	Ref: OE/Krishnankutty/11/2017	
Prof, Dept of OE	Limited Tender No: OE/Krishnankutty/11/2017	Dated: 01.11.2017

Sir/Madam,

On behalf of the Indian Institute of Technology Madras, offers are invited for the supply of an

Flapping Foil Mechanism

Vendor must quote for all items and for the integrated package, complying the technical requirements as per the attachment.

All additional options possible should be mentioned clearly with corresponding quote in the bid.

Instructions to the Bidder

[1]	Preparation of Bids:- The Limited tenders should be submitted under two- bid system (i.e.) Technical bid and financial bid in two separate sealed envelopes. Technical bid should have the compliance table.
[2]	Delivery of the tender:- The tender shall be sent to the below mentioned address either by post or by courier so as to reach the following address before the due date and specified in our schedule. Dr. P. Krishnankutty, Room No 307, Department of Ocean Engineering, IIT Madras-600036
[3]	Opening of the tender: - A committee duly constituted for this purpose will open the offer/Bids. The technical bids will be opened first and a technical committee, which will decide the suitability of the bid as per our specifications and requirements, will examine it.
[4]	Prices: - The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges to the Department. The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. However the percentage of tax and duties should be clearly indicated. The prices should be quoted without custom duty and excise duty, Since IIT Madras is exempt from payment of excise duty and the custom duty will be paid at concessional rate against duty exempt certificate. In case of import supply, the price should be quoted on EX-WORKS, CIF basis indicating the mode of shipment.

[5]	Agency Commission: - Agency commission, if any, will be paid to the Indian agents in Rupees on receipt of the equipment and after satisfactory installation. Agency commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in Tender even in the case of 'Nil' commission. The tender should indicate the percentage of agency commission to be paid to the Indian agent. The foreign Principal should indicate about the percentage of payment
[6]	Terms of Delivery: - The item should be supplied to our Department 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 within three months from the date of purchase order.
[7]	IIT Madras reserves the full right to receipt/ reject any tender stage without assigning any reason.

Yours Sincerely

SCHEDULE

Important Condition of the tender

[1]	The due date for the submission of the tender is Due Date: 14.11.2017, 4.00pm
[2]	<p>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 Limited Tender for supply of</p> <p>Should be written on the left side of the Outer bigger cover and sealed.</p> <p>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.</p> <ul style="list-style-type: none">➤ Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business.➤ The enlistment of the Indian agent with Director General of Supplies & Disposals under the Compulsory Registration Scheme of Ministry of Finance.
[3]	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 with details must accompany the quotations. Quotations for a prototype machine will not be accepted.
[4]	Original catalogue (not any photocopy) of the quoted model duly signed by the principals must accompany the quotation in the Technical bid. No prices should ever be include in the Technical bid.
[5]	Documentary proof for the claimed position and repetition accuracies must be obtained from the principals and submitted along with the relevant pages of the standards.
[6]	Compliance or Confirmation report with reference to the specifications and other terms & conditions should also be obtained from the principal.
[7]	Validity: Validity of Quotation not less than 90 days from the due date of tender.
[8]	Delivery Schedule: - The tenderer should indicate clearly the time required for delivery (less than three months from the date of Purchase Order) of the item. 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.
[9]	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.

[10]	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)
[11]	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 complying with the attached document. Any extended warranty offered for the same has to be mentioned separately. (For more details please refer our technical specification).
[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: - IIT 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]	<p>Disputes and Jurisdiction: -</p> <p>a. 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 one arbitrator. The Dean IC&SR will nominate the Presiding Arbitrator of the arbitral tribunal. The arbitration proceedings 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.</p> <p>b. 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.</p>
[18]	All Amendments, time extension, clarification etc. will be uploaded on the website only and will not be published in newspaper, 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.

Technical Scope

- Mechanical oscillating system fitted with load cell and AC motor 2.0 kW. The system shall have the provision to change the amplitude of oscillation and stroke angle manually.
- VFD control panel with MMI, USB based data logger 100 samples/ sec.
- Installation and proving of the system at IIT Madras.
- Training of one personal at IIT OED team

Components

Materials

1. 2.0 kW induction motor with variable frequency drive
2. Load cell with signal conditioner.
3. Control panel components.
4. Current sensors
5. Mechanical raw materials, bearings etc.

Services

1. Panel and PCB design, fabrication and assembly
2. Control system design and programming
3. Mechanical design and development
4. Assembly and testing
5. Free services
6. Warranty (at least 1 years)
7. Extended warranty of one additional year

Summary of the Project

In this project, the caudal fin which is fixed at the stern of the boat will be used for the propulsion. The speed of the boat can be controlled by the regulating the frequency of the foil. The combined heave and pitch motion of the fin gives more thrust and efficiency compared to that of the conventional propulsion system. The thrust and torque of requirements of bio-inspired caudal fin propulsor is estimated using numerical and analytical approaches. Bio-inspired propulsion system can increase the efficiency and performance of the system.