NATIONAL CENTER FOR COMBUSTION RESEARCH AND DEVELOPMENT (NCCRD)
INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI – 600036, INDIA

Ref. No. ICS/11-12/013/DSTX/TSUN **Date: 22 Mar. 2016**

Due date: 12 Apr. 2016

Item name: BIODIESEL RANCIMAT APPARATUS

1. Quotations are invited in a **two bid system** for the items shown overleaf (in Annexure I). The offers / bids should be submitted as 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 Tender for supply of "_____" should be written on the left side of the Outer bigger cover and sealed.
2. The quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.
3. The total cost of the equipment in terms of CIP Chennai should be clearly mentioned.
4. Terms of warranty and guarantee should be explicitly mentioned.
5. Packing and delivery charges, customs and clearance duty should be clearly stated.
6. Goods shall not be supplied without an official supply order.
7. Local firms : Quotations should be for free delivery to this institute. If quotations for ex-godown delivery charges should be indicated separately.
8. Firms outside Chennai: Quotations should be for F.O.R. Chennai. If F.O.R. consignor station, freight charges by passenger train / lorry transport must be indicated. If ex-godown, packing, forwarding and freight charges must be indicated.
9. The rate of sales / general taxes and the percentage of such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. Where this is not done, no claim for sales / general taxes will be admitted at any stage and on any ground whatsoever. The taxes leviable should take into consideration that we are entitled to have Concessional Sales Tax (CST) applicable to non-government educational institutions run with no profit motive for which a concession sales tax certificate will be issued at the time of final settlement of the bill.
10. Payment : Specify the mode of payment and if advanced payment has to be made. Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is later.
11. IIT Madras is exempt from payment of excise duty and is eligible for concessional rate of customs duty. Necessary certificate will be issued on demand.
12. 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.
13. The sealed quotation may be sent to

    Prof. S. R. Chakravarthy
    NCCRD Office
    No. 201, Rarefied Gas Dynamics Lab (Behind Aerospace Engineering Dept.)
    Chennai – 600036, Ph. (O) +91-44-22575025

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Annexure I

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TECHNICAL SPECIFICATION FOR BIODIESEL RANCIMAT APPARATUS

Number of samples measuring positions	6 (minimum)
Temperature range	60...150 °C
Temperature correction	-9...+9 °C
Max. deviation of set temperature	< 0.3 °C
Reproducibility of set temperature	< 0.2 °C
Stability of temperature (max. temperature fluctuation)	< 0.1 °C
Gas supply	built-in membrane pump
Range of air flow	7...25 L/h
Conductivity measurement	0 to 400 µS/cm
Interface	USB
Line voltage/ frequency	220-240V / 50-60Hz
Software	Suitable PC software for operation with a PC should be provided along with the machine. Only PC based instruments will be considered.

Necessary Features

1. Control of all instrument functions should be from PC.
2. The instrument should be able to perform the oxidation stability and the estimation of shelf life of biodiesel and related samples.
3. The instrument should also be used for examination of the effectiveness of antioxidants.
4. Working should be automatic.
5. Complete post processing of data should be possible using given software.
6. The software provided should have high data security by storage of all data: determination, method and instrument data.

7. Facility to Re-evaluation and recalculation of all measuring data should beavailable.
8. Clear user interface layout should be provided.
9. At least 6 measuring positions should be available.
10. Simultaneous and Independent working of each measuring position should bepossible.
11. The instrument should follow the standard testing requirements such as ASTMD6751, ASTM D 7467, EN 14214 and EN590.
12. Test methods like EN14112, EN15751 and EN16568 should be possible with the instrument.

In case of any technical queries/clarifications, please contact Dr. K. Anand, Dept. of Mechanical Engineering, IIT Madras, Chennai, E-mail: anand_k@iitm.ac.in; Phone: +91-44-22574720.