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|  | **Department of Aerospace Engineering**Indian Institute of Technology MadrasChennai – 600 036, India |

Prof. R.I. Sujith

PROJECT COORDINATOR

**Ref: No. ASE/RISU/ HOT WIRE ANEMOMETER(Air) / GATE /2014/ DATE: 03 *.04. 2014***

Due date : 24.4.2014

Dear Sir,

1. Quotations are invited in duplicate for the various items shown below/overleaf**/enclosed list**.
2. The quotations are to be in two parts as

**Technical Offer and as Commercial offer:**

The two parts of the offer are to be clearly marked on the envelopes. The two parts of the offer in separate envelopes must be enclosed in the one bigger envelope duly sealed and super scribed with reference number and due date and must be addressed to the undersigned so as to reach him on or before the due date stipulated above.

1. Fax and Email quotation are not acceptable.
2. Quotations should be valid for 60 days from the due date and period of delivery required , warranty terms etc. should also be clearly indicated. A minimum of one year warranty is required from the date of commissioning.
3. Imported supplies should be quoted **for CIF Madras**.
4. Local firms to quote for free delivery to this Institute. If quoted for Ex-Godown delivery charges be indicated separately.
5. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples / machine/ equipment if called for should be submitted / demonstrated at free of charges, and collected back at the supplier’s expenses. Compliancy certificate is to be provided indicating conformity to the technical specifications
6. Sales Tax/General Taxes/ED if applicable and such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. If this is not indicated no such claim will be admitted at any stage. Thetaxes leviable should take into consideration that we are entitled to have concessional Sales Tax applicable to Non-Government Educational Institutions run with no profit motive for which a concession is given. Sales Tax Certificate will be issued at the time of final settlement of the bill.
7. Goods should be supplied carriage paid and insured.
8. Goods shall not be supplied without an official supply order.
9. If the item is under DGS&D Rate contract No. and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the Rate contract price (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
10. In case of LC. Payment, 90% of the payment will be made after completion of the supply. The balance 10% of the payment will be made after satisfactory installation of the equipment.
11. IIT Madras is exempt from payment of Excise Duty and is eligible for concessional rate of custom duty. Necessary certificate will be issued on demand. IIT Madras will make necessary arrangements for the clearance of imported goods at the Airport/Seaport. Hence the price should not include the above charges.
12. **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.

Yours faithfully

 **Project coordinator**

 Items required: **HOT WIRE ANEMOMETER** as per specifications enclosed.

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­­­­­­­­­­­­­­­­­­­­­­Phone Nos.: **(044) 2257 5000 / 5027 / 5031 FAX: (044) 2257 4002**, E-mail: sujith@ iitm.ac.in

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**Technical specifications of the Multichannel Hot Wire Anemometer**

 Brief scope of supply of the Multichannel Hot Wire Anemometer system

1. The specifications are given below:
	1. It should contain 6 CTA (Constant Temperature Anemometry) channels, 1 temperature channel, and 1 velocity reference channel. All these channels should be enclosed in a single box. Each channel should have a galvanically isolated power supply such that cross talk among channels can be eliminated.
	2. Reference velocity transducer and corresponding accessories shall be provided- 1 Nos.
	3. Temperature probe which can be connected to temperature channel shall be provided- 1 Nos.
	4. The system should work properly under the temperature of 250Celsius, RH of 100% and velocity 0.2m/s to 50m/s.
	5. The system should have the compatibility to connect all the devices to as single desktop loaded with the DAQ software and should be able to log the data of all the device and able to control the device from the desktop. Further, compatible software shall be provided.
2. Details of probes are given below:

(Note that x, is direction parallel to the flow and y is the direction perpendicular to the flow)

1. Thin coated film probes with following specifications are required.
	1. Probe to measure parallel velocity (ux) – 2 Nos.
	2. Probe to measure perpendicular velocity (uy) – 2 Nos.
	3. Probe to measure 2 dimensional velocity (ux  and uy simultaneously) – 3 Nos.

 Note that all the 3 types of probes, mentioned above, should meet with below requirements:

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| Medium | Air |
| Sensor material | Nickel |
| Thickness of quartz coating | 0.5 µm |
| Sensor resistance | 6 ohms |
| Temperature coefficient of resistance | 0.40% / K |
| Maximum sensor temperature | 300 0 C |
| Maximum ambient temperature | 100 0 C |
| Velocity range | 0.2 m/s to 50 m/s |
| Frequency limit (63% response) | 90kHz |

* 1. Require probe supports for single wires – 2 Nos.
	2. Require probe support for two wire probes- 2 Nos

B. Thin coated conical film probe with following specifications are required-1 Nos.

|  |  |
| --- | --- |
| Medium | Air |
| Sensor material | Nickel |
| Thickness of quartz coating | 0.5 µm |
| Sensor resistance | 15 ohms |
| Temperature coefficient of resistance | 0.35% / K |
| Maximum sensor temperature | 300 0 C |
| Maximum ambient temperature | 100 0 C |
| Velocity range | 0.1 m/s to 50 m/s |
| Frequency limit (63% response) | 50kHz |
| Maximum ambient pressure | 70 bar |

1. **Vendor has to provide the specification compliance report along with the quotation.**

 **For any query please contact:**

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