Indian Institute of Technology Delhi
Department of Physics

Ref: IITD/RP2810/MC/2015/NIQ01 **Date : Feb 6, 2015**

Quotations are invited for the following item with minimum specifications given below. Technical and commercial bids must be submitted in **separate** sealed envelopes subscribed with Technical Bid or Commercial Bid as appropriate. Both bids should be enclosed in an envelope subscribed, "**Quotation for Gas sensor testing system".**

Quotation should reach Dr. Mukesh Chander , Physics Department, IIT Delhi, Hauz Khas ,New Delhi 110016 latest **by 5.00 PM on Feb 20, 2015.**

TECHNICAL DETAILS OF GAS SENSOR TESTING SYSTEM

Gas sensor testing system	➢ **Gas Feeding Section** • Three gas feed lines of Stainless Steel 1/4 inch pipes • Flow rate of the gas is controlled by Mass Flow Controller (MFC) with display unit. • Needle and Non-return valve should be supplied before and after MFC. ➢ **Mass Flow Meters & Controllers specifications (with PC interfacing facility)** • Flow rate range I. For Carbon dioxide Flow rate range: 0 - 200 SCCM II. For Carbon monoxide Flow rate range: 0 – 200 SCCM III. For Argon Flow rate range: 0 – 500 SCCM ➢ **Gas Mixing Chamber** • There should also be small gas mixing chamber made up of stainless steel. ➢ **Main Testing Chamber** • The chamber is cylindrical made up of stainless steel. Dimension of chamber is **8 inch** height and **10 inch** internal dia. • The top of the chamber is covered with removable flange. • The sides of cylindrical chamber also have 4 output ports with flange (about $2\frac{3}{4}$ inch) on the circular section. Out of 4, two should be necessary for gas in and out. Remaining two is fed with four pin electrical connections. All the connections should be with matching 'O' ring and suitable clamps in order to maintain vacuum of 10^{-3} Torr in chamber in case required. ➢ **Substrate holder with heater** • Disc shaped stainless steel substrate holder with heating facility upto 300 C in the required chamber. ➢ **Software** • Data acquisition system for acquiring data [for 8 analog - inputs]. ➢ **Installation** • The entire unit should assemble on the appropriate table by trained engineer.

TERMS & CONDITIONS COVERING SUBMISSION OF QUOTATIONS

1. DELIVERY	The rates quoted must be **F.O.B.**
2. TERMS OF PAYMENT	Payment terms with necessary details should be provided with the offer.
3. INSTITUTE'S RIGHTS	Institute reserves the rights of acceptance or rejection of any or all quotations without assigning any reason(s). The discretion for increasing the quantities demanded also vests with the Institute.
4.VALIDITY OF QUOTATIONS	Quotations will be considered **valid for 3 months** from the date of receipt unless otherwise stated.
5. CORRESPONDENCE	No correspondence regarding acceptance/rejection of a quotation will be entertained.
6.SUBMISSION OF QUOTATIONS	Quotations may be sent through either by post through a sealed envelope containing **separate sealed envelopes of Technical and Commercial Bids** while mentioning the **N.I.Q. REFERENCE AND DUE DATE FOR OPENING** as the subject**.**
7. REJECTION	Quotation not conforming to the set procedure as above will be rejected.
8. DISCOUNT	Special discount/rebate wherever admissible, keeping in view that the supplies are to be made for Educational purpose in respect of Public Institution of National importance, may please be indicated.
9.AUTHORISED SALES AGENCY SHIP	In case the quotation is being submitted by authorized agent of the principal manufacturing company, the **AUTHORISED SALES AGENCYSHIP** certificate from the PRINCIPALS should be furnished along with the quotation.
10. OTHERS	**(a)** Necessary information may also be provided in respect of Warranty • Delivery period • Penalty clause for delay in delivery **(b)** In case the quoted item is **proprietary** in nature, the necessary document indicating so may be submitted along with the quotation.