**ANNEXURE – 3**

ENQUIRY NO : CeNS/2016-17/SA/F08

**Technical specification for Gas Sensing Chamber for Gas sensing system:-**

**The Gas sensing chamber** essentially consists of :

1. GS Chamber.
2. Gas Mixing chamber
3. Provision for connecting Residual gas Analyser (RGA)
4. Mounting Stand
5. Valves
6. Hot zone in chamber
7. Pumping module with valves
8. Control Panel
9. Probe holder

**Gas Sensing SS Chamber**

The chamber should be compatible for the gases, such as, Ar, N2, CO, H2, CH4, NO, O2, NH3.

It should be fabricated with 904L steel. Chamber should be cylindrical vessel of OD 300mm x 300mm height including the hinged view port door. Welding suitable for 904L stainless steel should be done.

## The Inside surface of the chamber should be highly polished to control the out gassing rate and the total chamber is compatible (10-7 mbar).

## Chamber should be mounted on a support structure made out of MS (neatly painted) material using rectangular channel/ tube etc., by electric welding.

## All the SS fabrication should be carried out by TIG Argon Arc welding

## All the weld joints should be DP tested followed by Radiography for all the joints

**Probe holder**

Spring loaded Tungstan/gold tips with position adjustments

**Ports for electrical feedthroughs**

Suitable ports fixed with electrical feedthroughs need to be provided

**Heating**

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Heating up to maximum of 3000C to be provided.

A thermocouple is provided near the substrate to measure the temperature and the temperature is controlled through PLC and HMI

**Gas mixing chamber**

Gas mixing chamber to be fabricated with 904L stainless steel. It should have 8 ports with suitable lock fittings to connect the gas lines. One port on the mixing chamber will be connected to RGA chamber with UHV compatible valve and compatible for automation

**Rga Chamber**

RGA Chamber of size 6x6 inch. made of 904L steel.

The chamber to be connected with valve and UHV pumping ssytem. The other side of the chamber is connected with RGA and UHV valve, which should be operated with auto mode and manual mode.

**CONTROL PANEL WITH HMI /PLC**

The total System to be operated through Human Machine Interface (HMI) which can control the vacuum system and display the gauge values. All this to be embedded on the control panel.

**DESIGN**

Vendor needs to submit the drawings for the approval of purchase. The fabrication to be carried out as per the approved design. Any minor additions or revisions/ modifications to be implemented with prior approval of the purchaser

**Note:**

The supplier should prove the performance of the equipment at site and carry out any modification at free of cost.