**INDIAN INSTITUTE OF TECHNOLOGY BOMBAY**
**MATERIALS MANAGEMNT DIVISION**
**Powai, Mumbai 400076**

**For PR No.1000015855 (RFx No.6100000456)**
**Technical specification for Gas Chromatography System**

Gas chromatograph for analysis of liquid samples.

## GC OVEN

Temperature range : above ambient to $450^0$C with user selectable.
Ramp rate : Maximum achievable temperature ramp rate: 250 °C/min
Oven : Direct Heating to column with Guard chip to trap high boilers
Oven Cool Down : 450 to 50 Deg C in 4.0 minutes or better
Ramps : Atleast 9 ramps and 10 programming steps

## PNEUMATICS

Programmable Electronic control for injectors with single point control via software. Automatic leak testing and three ramp pressure program.

## INJECTOR

**Split/Splitless Injector – 01 No.**
Maximum temperature: 400 Deg C or better
Electronic Flow Control (EFC)

**Programmable Temperature Injector or PTV Injector – 01 No.**
It should have facility to inject large volume through autosampler up to 40-50 ul or more
Maximum temperature: 450 Deg C or better
Ramping rate up to $800^0$C/min or better.

## DETECTORS:

### FID DETECTOR - 01

Detection limit < 1.5 pg c/s or better
Data acquisition speed up to 400 Hz or better
Dynamic Range > 107

System should have capability of locking/adjusting the retention time so that same retention time can be produced sytem to system and method should be electronically transferred. NIST 2017 library along with AMDIS/DRS software should be provided and also retention time locked databases with NIST database.

System must be capable of effluent splitting, back flushing & column switching/changing without breaking of vacuum along with software controlled splitter to acquire chromatograms for at least three detectors simultaneously with one injection only.

**LIQUID AUTOSAMPLER:**

Liquid auto sampler should have capacity of Minimum 15 Vials. It should inject from 0.1ul to 50.0ul with variable speed & varying syringe sizes & must be operate from software It should have a reproducibility of <0.5% RSD.

**ACCESSORIES**

Necessary Gas Cylinders (2 nos.) for Nitrogen, Hydrogen, Zero Air, Helium, double stage SS Regulators, Gas Purification System for all gases, standard gas cylinders for carbon dioxide (400 and 800 ppm), nitrous oxide (320 and 800 ppb), methane (2 and 10 ppm), nitric oxides, Latest Branded PC and Color Laser Printer, 10 KVA online UPS with 120 min. backup, suitable cooling system.