INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

MATERIALS MANAGEMENT DIVISION

Powai, Mumbai 400076.

Reference No. (PR No. 1000017039) **RFx No. 6100000683**

TECHNICAL SPECIFICATIONS

Oxygen/Nitrogen Analyzer/determinator in ferrous samples

(1) The range for Oxygen and Nitrogen for 1 gm sample should be
Oxygen: 0.5 ppm to 0.2% for a 1 g sample (0.5% RSD)
Nitrogen: 0.5 ppm to 3.0% for a 1 g sample
The analysis time shall be typically less than 150 sec.

(2) Instrument must have the capability to determine oxygen and nitrogen simultaneously with one sample.

(3) Instrument must support analysis in either argon or helium carrier gases (Without the need for any hardware configuration change).

(4) The instrument software must contain real-time service diagnostics including ambient charts of instrument temperatures, pressures, and detector signal; manual control of solenoids and switches; automated leak checks; and network and communications diagnostic.

(5) Software must allow for data recall and recalculation and support various methods.

(6) Instrument must provide compatibility to an external balance and printer

(7) Instrument must be PC controlled using Windows 10 64-bit operating system or higher.

(8) Instrument blank stability must be less than 0.5 ppm for oxygen and nitrogen.

(9) Instrument software must support automatic system leak checks and provide the option to bypass the furnace from the check.

(10)Instrument detectors must be independently heated in order to thermally isolate them from environmental temperature fluctuations.

(11)Instrument software must support both independent multipoint calibration and blank for each infrared and thermal conductivity detector. Drift correction of these independent multipoint calibrations must also be supported.

(12)Instrument must utilize a single solid-state CO_2 infrared detector for the determination of oxygen and nitrogen and a dual flow controlled thermal conductivity detector for the determination of nitrogen.

(13)Instrument must support a two-stage incoming carrier gas purification system.

(14)Instrument must support an integrated liquid-to-air heat exchanger for cooling of the furnace upper and lower electrodes. This cooling system must also support an integrated liquid-to-liquid heat exchanger that can be connected to external cooling water sources.

(15) Instrument must support a programmable auto cleaner that can clean the upper and lower electrodes simultaneously.

(16) Instrument auto cleaner must utilize an integrated vacuum cleaner to remove and contain dust.
(17) Instrument software must dynamically display average, standard deviation, and relative standard deviation.
(18) **Warranty:** Warranty period of the equipment would be 1 year from the date of installation.

Other Terms and Conditions

(1) Vendors must have supplied and installed the equipment to at least 3 users in and the service centre shall be ideally located in Mumbai or nearby. It is mandatory to provide relevant information in the technical bid.