PATENT NO. 352616

A LOW COST, PORTABLE AND DRIFT CORRECTED SEMI-CONDUCTING METAL OXIDE GAS SENSOR DEVICE AND PROCESS FOR DOMESTIC AND INDUSTRIAL APPLICATIONS

APPLICATION NO. 500/KOL/2013

APPLICANT
Indian Institute of Technology, Kharagpur

ABSTRACT

A low cost, portable and drift corrected gas sensor device and process for the compensation of drift in a semiconductor gas sensor with slope and standard deviation variation is disclosed. The gas sensing device (100) comprises of at least one sensor (102), a microprocessor (104), and a feedback circuitry (106). The at least one sensor (102) is exposed to the harsh gas environment to sense the gas and to generate at least on signal. The microprocessor has at least one sensor embedded in it. The microprocessor is configured to monitor a baseline of the at least one sensor based on the at least on signal for feature extraction. It also estimates a slope of the baseline and a standard deviation of the baseline. Further, it measures a voltage transient in a predefined time-span window. The feedback circuitry in the microprocessor provides an alert based on any deviation in the baseline.

INVENTOR
Majumder, Subhasish, Basu
Maity, Arnab
Indian Institute of Technology, Kharagpur, Kharagpur , West Bengal

CLAIM 1

A gas sensing device (100) for monitoring gas to minimize a drift effect in a harsh gas environment, the gas sensing device (100) comprising 5 at least one sensor (102) exposed to the harsh gas environment containing the gas to which the gas sensing device is sensitive, to generate at least on signal; a microprocessor (104) having the at least one sensor embedded, wherein the microprocessor is configured to monitor a baseline of the at least one sensor based on the at least on signal for feature extraction, thereby 10 estimating a slope of the baseline and a standard deviation of the baseline; measuring a voltage transient in a predefined time-span window; and a feedback circuitry (106) in the microprocessor (104) configured to provide an alert based on any deviation in the baseline of the at least one sensor (102)