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ENHANCING ZINC OXIDE GAS SENSING DEVICE FOR MICRO-CONTROLLER APPLICATION

Since, for some years now, with the rapid development of industrialization and urbanization, severe pollution primarily attributed to automobile exhaust and factory emission has become major threat to human survival and development. A leakage of flammable and explosive gases may end in a loss of life and property damage. Thus uplifting the concern for researchers to seek a high sensitive, durable and selective gas sensor. ZnO gas sensors have been popular for some time now, so the existing ZnO gas sensor will be modified by adding extra electronics components, in order to provide the voltage output that will lie between 0 V to 5 V, suitable for a Microcontroller device. HCHO is a reducing gas that increases the conductivity of ZnO and therefore decreases its resistivity due to the release of electrons into the ZnO metal oxide surface. The resistance of the ZnO gas sensor is inversely proportional to the concentration of a reducing gas. A design of a suitable electronics circuit that meets the requirements has been proposed. A P-Spice simulation environment has been developed for the proposed design. Results show promise to serve as an input to run a microcontroller environment. For future use we want to automate in the hardware.

Keywords: Metal oxide gas sensor, Reducing gas, Microcontroller

Apply to be considered for a student ; award (Yes / No)?

No

Level for award;(Hons, MSc, PhD, N/A)?

N/A

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