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A Zinc Oxide(ZnO) Gas Sensor Approach To Measure Oxidizing Gases

Abstract. Selective detection of gases such as Nitrogen Dioxide (NO2), Carbon Monoxide (CO), Carbon Dioxide (CO2), and various other volatile organic gases is necessary for air quality monitoring. In this project we are focusing on Zinc Oxide (ZnO) as a gas-sensor and the test gas considered is Nitrogen Oxide, an oxidising gas. The conductivity of ZnO gas sensor increases when the sensor is exposed to an oxidising gas. The aim of this experiment is to modify an existing device with the introduction of electronic circuitry. The introduction of Wheatstone bridge circuit to the existing device was to provide an output voltage suitable to run a microcontroller. The magnitude of the output voltage resulting from the P-Spice simulation environment lies between 0 V and 3 V and it is sufficient to run a microcontroller. Simulation result compliment theory.
Keywords: ZnO Semiconductor Gas Sensor, Electronics circuitry, 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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