**GO/CuO Nanohybrid Based Carbon Dioxide Gas Sensor with Arduino Detection Unit**

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**Abstract:**

A gas sensor is a device that detects the presence of gases in a specific area. This research work demonstrates the effectiveness of gas sensor based on Graphene oxide (GO), and Copper oxide (CuO) semiconductor nanomaterials for the detection of carbon dioxide. GO and CuO were prepared by modified Hummer’s method and precipitation method using CuCl2 as precursor, respectively. These materials are made into a hybrid using poly(vinyl alcohol) (PVA) / poly(vinyl pyrrolidone) (PVP) polymer solutions of low concentrations and are spin coated onto the pattern etched copper clad substrate. The sensor is tested using source measurement unit (SMU) to obtain the change in the resistance of the sensor in open air and in carbon dioxide environment. The fabricated sensor with Arduino microcontroller detection unit showed a good sensing response of 60%.

**Key Words:** Copper oxide nanomaterial, Graphene oxide nanomaterial, Nanohybrid, Sensing response, Sensors.