

Pollution Monitoring System Using Gas Sensor based on Wireless Sensor Network

M. Udin Harun Al Rasyid*, Isbat Uzzin Nadhori, Amang Sudarsono, Yodhista Tulus Alnovinda

Politeknik Elektronika Negeri Surabaya (PENS), Surabaya, Indonesia.

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Abstract

Carbon monoxide (CO) and carbon dioxide (CO₂) gases are classified as colorless and odorless gas so we need special tools to monitor their concentration in the air. Concentration of air pollution of CO and CO₂ that are high in the air will give serious effects for health status. CO is a poisonous gas that damages the circulation of oxygen in the blood when inhaled, while CO₂ is one of the gases that causes global warming. In this paper, we developed an integrated pollution monitoring (IPOM) system to monitor the concentration of air pollution. This research implemented three sensor nodes (end-device) which each node contains CO and CO₂ sensors on the gas sensors board to perform sensing from the environment. Furthermore, the data taken from the environment by the sensor will be sent to the meshlium gateway using IEEE 802.15.4 Zigbee communications and processed by the gateway in order to be sent to the computer server. The data is stored in meshlium gateway using MySQL database as a backup, and it will be synchronized to the MySQL database in the computer server. We provide services for public to access the information in database server through a desktop and website application.

Keywords: CO and CO₂, gas sensor, zigbee, meshlium, wireless sensor network

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* Corresponding author. E-mail address: udinharun@pens.ac.id

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