

DESIGN AND CONSTRUCTION OF EMISSION AND NOISE CONTENT MEASURING EQUIPMENT IN MOTORIZED VEHICLES

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ABSTRACT

Vehicles have standards for exhaust gases and noise. Noise issues are regulated in Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number 56 of 2019 concerning Quality Standards for Motor Vehicle Noise and exhaust gases are regulated in Regulation of the Minister of Environment Number 05 of 2006 concerning Exhaust Gas Emission Thresholds for Old Motor Vehicles. With this regulation, users must also be able to know the emission levels of the vehicles they own, so a tool for measuring vehicle exhaust gas levels is needed. In this research, a motor vehicle emission and noise measurement tool was developed using the FC-04 sound sensor to measure noise, the Mq-2 sensor to measure HC gas levels and the Mq-9 gas sensor to measure CO gas levels with Arduino Uno as a microcontroller. The measuring instrument was measured using the measuring instrument of the Sleman Regency Transportation Service. The system test results showed that the accuracy of the sound sensor was 98.7%, the HC gas sensor was 93.2% and the CO gas sensor was 92.9%. Use decibel units for sound, ppm for HC gas levels and percent for CO gas levels.

Keywords: *emissions, noise, mq-2 sensor, mq-9 sensor, fc-04 sensor*