ABSTRACT

REALIZATION MEASURING INSTRUMENT PARTICULATE MATTER (PM10) OF GAS MOTOR VEHICLE WITH INFRARED BASED FROM ON MICROCONTROLLER ATMEGA32

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It has been designed and realized particulate matter (PM10) measurement using an sensors infrared by displaying measurement result in LCD. The device consists of a sensors infrared, photodiode, power supply, microcontroller atmega32, LCD, a series of conditioning the signal and software codevision AVR. Infrared beam emitted and accepted by photodiode. Infrared light sent will be deterred by the object so as to cause changes output voltage. Taking process data PM10 namely by means of measuring an output voltage of paper GF/A that has been accommodate PM10 of the exhaust gases vehicles, with 3 minutes, 6 minutes, and 9 minutes. Taking Process PM10 with the variation of this time show improvement mass PM10 and also demonstrating the limitations the condition of paper GF/A that are easily broken when the data done more than 9 minutes. While upon variations of other kinds of vehicles type 2 Tak tend to be much higher than the type 4 Tak with changes in the difference between 0.0020 to 0.0051 gram and diesel vehicles is higher than gasoline-fueled vehicles to change the mass difference between 0.0050 to 0.0152 grams.

Keywords: Infrared Sensor, PM10, Paper GF/A, ATmega32, LCD.