

ABSTRACT

THE REALIZATION OF THE MEASURING INSTRUMENTS ON THE CONCENTRATION OF NITROGEN OXIDE (NO_x) FLUE GAS OF VEHICLES USING THE MICROCONTROLLER-BASED SERIAL COMMUNICATIONS

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This research has done about the making of nitrogen oxide (NO_x) measurement instruments on flue gas of vehicle based ATmega 8535 microcontroller using serial communications. This research intent on make a reality nitrogen oxide (NO_x) concentration meter on flue gas of vehicle, displayed measurement result, saved data of measurements on computer and applied ATmega 8535 microcontroller. The NO_x concentration measurements are used two method i.e. gas is accommodated in tube and plastic. From measurement results who has done to some vehicle, the highest and lowest of nitrogen oxide concentration are found to flue gas from Toyota (Truck Dump) and Toyota (Kijang LF 82 SUP) by using gas is accommodated in plastic method with concentration in amount of 0,98808 ppm and 0,2950 ppm. Whereas for method of gas is accommodated in tube, the highest and lowest of NO_x concentration Toyota (truck dump) with value in amount of 1 ppm and Toyota (Kijang SUPLR LI 02 LONG) in amount of 0,4516 ppm. Generally large concentration of NO_x gas to flue gas every vehicle will grow if time of measurement and rpm that is used greater.

Keywords: Nitrogen Oxide (NO_x), TGS 2201 sensor, measuring instruments.