ABSTRACT

Oxygen is the most important element in the human body, with a minimum percentage of oxygen in the body that is equal to 85%. Lack of oxygen can cause hypoxia which would be bad for the body. Due to the lack of awareness about the importance of oxygen for a person's, it is encouraging to make gauges oxygen levels in the human body that can be used by anyone with a relatively small cost. One method to monitor the oxygen content of the body that is pulse oximetry. The design of the oxygen concentration measuring device using a red LED, infrared LED and phototransistor are used as sensors to detect the presence of oxygen content in the blood. Detection results will then be processed on ATmega328 microcontroller that is included on the arduino. The results of the processing will be displayed on the 7-segment role in terms of percent with 0.1% accuracy, in addition there is a buzzer which is used as an indicator of when the oxygen content is less than the lower limit. Based on the results of the test as a whole produces the expected output with a success percentage of 98% and the tool has a different value with standard oximeter up to 5%.

Keywords: Oxygen, hypoxia, Pulse Oximetry, Arduino.