ABSTRACT

Diabetes Mellitus is one of the deadly diseases faced by people in Indonesia. The number of people with this disease in Indonesia many 10 million patients according to (IDF) International Diabetes Federation. Even according to the World Health Organization (WHO) Indonesia entered five countries with the number of people with Diabetes Mellitus. For the measurement of blood sugar levels so far that is widely used invansive tool that is by injuring the patient's body. Techniques make people reluctant to perform measurements of blood glucose levels regular basis. Though it is recommended to make measurements on regular basis in order to control the intake of nutrients in the body.

This final project is created modifying oxymeter usage of Nellcor. That is, by reading the power received by the photodiode emitted by Infrared and LED (Light Emitting Diode) red and then the voltage obtained is converted into a result by means of voltage multiplied by the constant of the calculation result of standardization of the tool.

Based on the measurement of the module against the comparison of the invasive glucometer obtained the largest error value of 6.9%, while the smallest error value of 1.2%. Data collection on the respondent's respondents was done in fasting condition and in a relaxed state and did not do heavy work.

Keywords: Blood glucose, Non-Invasive, Sensor Oxymeter