ABSTRACT

The measurement of hemoglobin levels in blood commonly still use with *invasive* way (injuring the body). Where as *non-invasive* way (not injuring the body) to measure hemoglobin in blood sample still rarely conducted. Measurement system non-invasive way using a sensor/tranducer optik which sticked to the skin, on the finger, lear-ear or foot thumb.

In this final assignment, will be built a system that detect hemoglobin levels in blood with non-invasive way based on microcontroller. This device made for measuring hemoglobin levels in blood without injuring the body (*non-invasive*). The measurement is using sensor optic which consist of LED infrared and photoresistor (LDR). Microcontroller used to process data while LCD used to display the output from sensor.

The results of test, can be viewed through LCD. The results of tes hemoglobin with device that made has an error levels about 5%. This results can be made as an early warning if hemoglobin levels is too high or too low.

Keywords: Hemoglobin, Microcontroller, oximeter, *Non-Invasive*