

ABSTRACT

The development of technology in medical sector nowadays demand us creating some innovations such as the method of red blood cell counting. The analysis. Which is done by doctors based on preparat would not be similar between one doctor and another. Doctor's carefulness and concentration really affect the results of analysis. Due to this demand, in this final project we made automated red blood cell counting method using *Matlab*. This method is made based on two important parameters which are colour and cell size analysis.

The process is started from image acquisition, noise removal by filtering, thresholding, until the image ready to be counted. Image analysis is done by reading colour information of red blood cell and the cell size, and then comparing between manual counting and automated counting. From that comparison we got information that there are errors occurred with percentage 6.5% for noiseless data and 8.5% - 12% for noisy data and time measurement between 2 – 4 second for each image. Based on the result of analysis we can find that error occurs because of red blood cell distinctivity and also coincidence. From the result using 75 red blood cell samples we can conclude that the system is reliable enough for counting red blood cell automatically.

Key words : Image Processing, Noise, Filter, Thresholding, Image Analysis.