5.1 Conclusion

A system for detecting Plasmodium parasites was implemented. The images used in this work were collected from different sources, the images then processed and a certain features were extracted from them, these features then used to detect the presents of the malaria parasite. In addition, a graphical user interface has been designed to facilitate the use of the system. A total of 1120 erythrocytes sub-images were used to train and test the performance of the system. The outputs of the system were compared to the results of expert microscopists. The results were promising and the sensitivity of the proposed method outperforms most of the other reported methods. The system recorded 99.68 % accuracy in detecting the presence of Plasmodium parasites. The neural network, which has been trained with the back propagation algorithm, improves the accuracy and performance of the system. Moreover, the automated computer based method introduced in this project is interactive; hence, it is faster and more accurate than manual process.

5.2   Recommendations

Further work still needs to be done in order to improve the proposed system.

- Future works should focus on improving the process of image acquisition.
- Extract more features to increase the accuracy of the system.
- Apply the system as a helping guide for physicians in laboratory, especially in places where there are less experts related to the field.