

Malaria Parasite Detection Instrument

Introduction

Malaria is a very serious infectious disease caused by a peripheral blood parasite of the genus Plasmodium. Conventional microscopy, which is currently “the gold standard” for malaria diagnosis has occasionally proved inefficient since it is time consuming and results are difficult to reproduce. As it poses a serious global health problem, automation of the evaluation process is of high importance.

CSIR-CSIO has developed an effective microscope based automated instrument, using an accurate, rapid and affordable model of malaria diagnosis using stained thin blood smear images. The instrument uses intensity features of Plasmodium parasites and erythrocytes. Images of infected and non-infected erythrocytes are acquired using microscope, pre-processed and eventually diagnosis is made based on the features extracted from the images. The instrument is capable of classifying set of features based on intensity and the performance of these features on the red blood cell samples from the created database are evaluated using an artificial neural network (ANN) classifier and displayed in a dedicated GUI.

Features

- Sensitivity of the network: 91%
- Specificity of 85% with positive prediction rate 88 %

Status: TRL 4: Ready for Technology Transfer

