**ABSTRACT**

The basic aim of this paper is to find the RBC and WBC count using Digital Image Processing (DIP) from blood smear images captured through a compound microscope .This project presents a method to digitally analyse the image of blood cells and find the RBC and WBC count values from the blood smear microscopic images. Plane Extraction of the microscopic images is done followed by edge detection and morphological filling operation. Circular Hough transform is performed for RBC count, whereas boundary is detected for WBC.

The Blood cells white, red and platelets are important part of the immune system. These cells help fight infections by attacking bacteria, viruses, and germs that invade the body. White blood cells originate in the bone marrow but circulate throughout the bloodstream, while red blood cell helps transport oxygen to our body and platelets are tiny blood cells that help your body from clots to stop bleeding. Accurate counting of those may require laboratory testing procedure that is not usual to everyone. Generating codes that will help counting of blood cells that produce accurate response via images gives a relief on this problem. In this study, the images were processed and a blob detection algorithm was used to detect and differentiate RBCs from WBCs, PLATELETs. A cell counting method was also used to provide an actual count of the RBCs, WBCs and PLATELETs detected. The automation comes with a graphical user interface backed-up with a working database system to keep the records of the users (e.g. patients, respondents).