

This work considers laser diffraction by erythrocyte monolayer in wet blood smear. By diffraction data erythrocyte size distribution and mean erythrocyte radius are examined. An experimental installation was created for studying laser beam diffraction by various objects and a couple of data analysis programs were developed. Different erythrocyte models were studied in application to current problem. As a result, inverse laser diffraction by erythrocyte monolayer problem was solved, erythrocyte distribution was reproduced and data obtained was compared with data obtained via microscope. Direct diffraction problem was solved: smear diffraction image was reproduced using erythrocyte size distribution.