Abstract of bachelor's graduation work

Erythrocyte in the laser beam field of optical tweezers

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The work is devoted to the study of the interaction of laser radiation of optical tweezers with erythrocyte. It was found that the erythrocyte is reoriented during trapping by optical tweezers and changes its regular shape. The shape change was studied depending on the duration of trapping and the laser beam power. It was hypothesized that the change in the shape of the cell is due to the effect of laser radiation on hemoglobin molecules, which results in hemoglobin flows from one part of the cell to another. This hypothesis was confirmed by an experiment with erythrocyte ghosts. Also, changes in the membrane properties during trapping of the cell by optical tweezers, and phenomena arising from changed erythrocyte shape were investigated.