

Laser beam scattering by an inhomogeneous ensemble of elliptical discs modeling red blood cells in a shear flow

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Laser beam scattering is considered by an ensemble of red blood cells which are deformed by viscous friction in a shear flow. The question is analyzed of how the difference in the shape and size of the particles affect the diffraction pattern. New data processing algorithms are proposed for laser diffractometry of erythrocytes in a shear flow (ektatcytometry), which allow to estimate the variance of erythrocyte deformability in the blood sample.