

# Effect of iron loading on magneto optic properties of magnetoferritin

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Magnetoferritin is relatively new synthetic biocompatible nanomaterial with continuously increasing interest in many fields of science. Unlike in physiological ferritin protein, the magnetoferritin's cage is loaded with different magnetic materials using chemical synthesis procedures. In this paper we present experimental studies of magnetic and structural properties of magnetoferritin prepared by controlled chemical synthesis with different iron loading factor (LF=the number of iron atoms inside the cage) ranging from 300 to 3200 Fe ions per ferritin molecule. Magnetically induced optical birefringence (MB) was measured for magnetoferritin aqueous suspensions. MB was described in the frame of Langevin formalism taking into account the log-normal distribution of the particle size. The established average magnetic dipole moment and core diameter increases with increasing the LF.

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