

Transparent magnetic materials, among the others semiconductors, have recently come to the focus of interest in both basic and applied research because they have great potential in optical applications and they can be used in optical spectroscopy to investigate fundamental physical phenomena. The theoretical calculations introduce that these materials have some extraordinary properties like asymmetric reflectance when light impact the sample from the opposite angles. In this bachelor thesis, transfer matrix formalism is derived based on Maxwell equations, taking into account special form of effective permittivity. The reflection coefficient for one layer demonstrates, that the asymmetric reflectance appears for transversal-magnetic polarization of light and transversal magnetization in the studied material. The derived formulae are used to calculate the difference in reflectivities for the waves impacting the structure from opposite angles. $\text{Ga}_{1-x}\text{Mn}_x\text{As}$ with different concentrations of manganese is assumed to be the essential transparent magnetic layer in the sample.