

This thesis studies optical and magneto-optical responses of thin epitaxial Ni-Mn-Ga films prepared by magnetron sputtering. The relative permittivity tensor spectra were computed from the spectroscopic ellipsometry data measured both without the external magnetic field and in the out-of-plane magnetic field configuration. For one of the thin film samples, measurements across martensitic transformation were performed and temperature-hysteresis was observed. The analysis of the obtained spectra for thickness-varied series of samples clearly demonstrated the influence of substrate-induced strain and revealed a strong correlation between the out-of-plane lattice parameter and the properties of the obtained spectra.