

The Change of Magnetic Easy Axis in Ion Beam Mixed Co/Pt Multilayer

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We have studied magnetic properties of Co/Pt multilayered films which have attracted great interest as high-density magneto-optical (MO) recording media due to their good MO properties. For this study, [Pt(45Å)/Co(35Å)] \times 8 films were deposited with a Pt buffer layer of 60Å on Si(100) substrate by alternating electron-beam evaporation in a high vacuum and were ion beam mixed by using 80keV Ar⁺ at 250°C. Especially, an external magnetic field was added to help changing magnetic property during ion beam mixing (IBM). The intermixing of Co and Pt layers after IBM was confirmed with Rutherford Backscattering Spectroscopy (RBS) and Transmission Electron Microscopy (TEM).

The MO property of the film was measured with magneto-optical Kerr spectrometer and the change of magnetic easy axis in the film plane was observed from Kerr loop data. This anomalous result might be correlated with the change of atomic structure due to the intermixing effect.