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Thickness Dependence of Hall Effect in Structure of TbFeCo Thin Film

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Thickness dependence of magnetic properties of TbFeCo thin film has been investigated. The thin films were fabricated by magnetron DC sputtering method at the working pressure of 3 mTorr. During the deposition an external magnetic field was applied perpendicular to plane of films to induce the out-of-plane magnetic anisotropy that was hoped to increase the Hall signals for applications. The magnetic properties were characterized by hysteresis loops through VSM measurement and the Hall Effect curves were obtained from Hall measurement system using four probe method. By comparison of relation between magnetic anisotropy and Hall output signals we found that the Hall effect voltages vary as a function of TbFeCo thickness due to anincrement of out-of-plane magnetic anisotropy when the thickness of TbFeCo increases. These behaviors are well explained based on the modern electron theory transition metals [1].

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Magnetic Out-of-plane and In-plane Anisotropies of TbFeCo Thin Film Structure

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We have investigated the magnetic and relative properties of TbFeCo thin film structure. The thin films were fabricated by magnetron DC sputtering machine at the working pressure of 3 mTorr. During fabrication, an external magnetic field of 200 Oewas applied perpendicular to plane of films to induce the out-of-plane magnetic anisotropy that was hoped to increase the Hall signals for applications. The crystal structure of thin film was characterized by X-ray diffraction. The magnetic properties were obtained by hysteresis loops through VSM measurement and the Hall Effect curves. By using the comparison among magnetic anisotropy and output signals our results are well explained based on the modern electron theory transition metals [1].

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