

Angular dependent exchange bias field and coercivity in FeMn/Py bilayers

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We have investigated the angular dependence of both longitudinal and transverse loops in the film plane of the exchange-biased FeMn/Py bilayers by employing vector Magneto-Optic Kerr Effect (MOKE) magnetometer and numerical calculation based on modified Stoner-Wholfarth model. From the angular dependence, it is found that the relevant magnetic anisotropies such as uniaxial and unidirectional anisotropy is not parallel to the deposition field applied during sample growth. In addition, the rotatable anisotropy much larger than ferromagnetic anisotropy constant is required to elucidate the angular dependence of coercivity in the polycrystalline FeMn/Py bilayers.