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Brillouin Light Scattering study of the rotatable magnetic anisotropy in exchange biased bilayers of Ni81Fe19Ir20Mn80 ROBERTO RODRGUEZ, Pontificia Universidad Catlica de Chile, ALEXANDRE OLIVEIRA, Univ. Fed. Rio Grande do Norte, BR-59072970 Natal, RN, Brazil, FRANCISCO ESTRADA, OBED SANTOS, ANTONIO AZEVEDO, SERGIO REZENDE, Universidade Federal de Pernambuco, 50670-901, Recife, PE, Brasil. — It is known that when a ferromagnet (FM) is in atomic contact with an antiferromagnet (AF) the exchange coupling between the FM and AF spins at the interface induces a unidirectional anisotropy in the ferromagnetic film. This effect is known as exchange bias (EB). Despite the large amount of research on this topic there are still several aspects of the EB mechanism that are not well understood. One of this aspects is the origin of the rotatable anisotropy in polycrystalline AFs. By means of Brillouin Light Scattering (BLS) measurements, we investigated the dependence of the rotatable anisotropy field H_{RA} and exchange field H_E with the magnitude of the external magnetic field (H_o) in FM/AM bilayers of $Ni_{81}Fe_{19}(10nm)/Ir_{20}Mn_{80}(t_{AF})$. We developed an algorithm to numerically fit the in-plane angular dependence of the magnon frequency, at a fixed value of H_o measured by BLS. From the fit parameters we were able to investigate H_{RA} and H_E dependency on H_o. The results reveal that H_{RA} value depends on H_o, so we argue that AF grain distribution at the interface is partially modified by the applied field strength. Contrary to this, the relation between H_E and H_o is not straightforward, remaining constant at high values of H_o.

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