Influence of temperature on magnetic properties of $Fe_{20}Ni_{80}/Co/Tb_{26}Co_{74}$ films with exchange bias

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Temperature dependencies of hysteresis properties of $Fe_{20}Ni_{80}$(50 nm)/Co(L)/$Tb_{26}Co_{74}$(110 nm) films with various thicknesses L have been investigated. Hysteresis properties were measured at temperatures varied from 5 to 350 K at two different ranges of magnetic field. All samples exhibited unidirectional anisotropy, which manifested itself as a shift of the hysteresis loop of the soft magnetic layer along the magnetic field axis. For samples with different thicknesses of Co spacer, temperature dependencies of coercivity (H_c) and exchange bias field (H_e) of $Fe_{20}Ni_{80}$ layer were determined. Values of H_c and H_e measured for samples with $0<L<0.8$ nm increased with temperature decreasing. The experimental results were interpreted in terms of magnetic interface delocalization.

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