

Magnetization and magnetostriction studies of TbFeCo/YFeCo multilayers

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Abstract: Exchange-spring TbFeCo/YFeCo multilayers exhibit interesting magnetic and magnetostrictive properties that are rather promising for application in microsystems. In this paper, we present a study of the effect of the exchange coupling on the magnetic properties of these magnetostrictive multilayers. An exchange bias phenomenon, revealed by a shift of the minor hysteresis loop along the applied field axis, is found as the result of the creation of interfacial domain walls. This effect strongly depends on the magnetic properties of the soft YFeCo layer, and becomes more pronounced at low temperatures due to the enhancement of the magnitude of the exchange coupling between the layers. © 2006 Springer Science+Business Media, Inc.

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