

Magnetoresistance of Co/Al₂O₃/Fe₃O₄ Laminated Films

by

Kunio Sato*¹, Takashi Ogawa*¹ and Yoshiharu Koizumi*²

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Abstract

The magnetoresistance of the spin tunneling junction of Co/Al₂O₃/Fe₃O₄ laminated films has been studied using polycrystal Fe₃O₄ films. An Fe₃O₄ film of base substrates was prepared by the low-temperature solid-phase reaction of a Fe thin film produced by vacuum evaporation. Although the magnetic resistance ratio of the Fe₃O₄ film of the cloth was 1% or less, in the Co/Al₂O₃/Fe₃O₄ laminated film, a maximum value of about 5.3% was obtained. The base substrate material in the solid-phase reaction produced the interval from 5K/min to 30K/min with respect to the rising gradient of the firing temperature.

Keywords: magnetic thin film, spin tunnel, magnetoresistance, spin electronics, magnetic device

* 1 Graduate Student, Course of Applied Science

* 2 Professor, Faculty of Electronic Information