

Direct Observation of Magnetization Reversal Behaviors in Exchange-Coupled NiO/Fe Films

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We have investigated the magnetization reversal behavior in exchange-coupled NiO/Fe films with varying the NiO thickness using a magneto-optical microscope magnetometer (MOMM), capable of direct domain observation in real time. Interestingly enough, the magnetization reversal mechanism in the NiO/Fe systems becomes changed from a domain wall motion dominant process to a nucleation dominant one as the NiO thickness increases. This result clearly demonstrates that the exchange coupling effect between the NiO and Fe layers increases the domain wall pinning effect of the Fe layer, resulting in the nucleation dominant reversal mode.