

The interfacial Dzyaloshinskii-Moriya interaction in exchange-biased Au/Co/NiO layer system

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The interfacial Dzyaloshinskii-Moriya interaction (DMI) is a well-known phenomenon in thin layered films, especially in ferromagnetic(FM)/heavy metal or FM/non-magnetic oxide systems. Here, we unambiguously show that this interaction can be also found in FM/antiferromagnetic oxide layer systems (i.e. Au/Co/NiO). Using polar magneto-optical Kerr effect (PMOKE) measurements we show that in the exchange-biased Au/Co/NiO layer system the Néel domain wall (N-DW) with clockwise chirality is stabilized by a strong negative DMI. In such system, the DMI and as a consequence chirality in N-DWs are independent of the direction of perpendicular interlayer exchange bias coupling.

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