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Controlling the sign of the exchange bias in $\mathbf{Fe}_x\mathbf{Ni}_{1-x}\mathbf{F}_2$/Co and $\mathbf{Fe}_x\mathbf{Zn}_{1-x}\mathbf{F}_2$/Co bilayers[1] MIYEON CHEON, ZHONGYUAN LIU[2], HONGTAO SHI[3], DAVID LEDERMAN, Department of Physics, West Virginia University — A correlation between the sign of the exchange bias and the sign of the uncompensated magnetization was observed in the $Fe_xNi_{1-x}F_2$/Co bilayer system. Due to this correlation and the fact that the uncompensated magnetization was reversed at high fields at low temperatures, the sign of the exchange bias was controlled by controlling the sign of the uncompensated magnetization in this system. The dilute antiferromagnet $Fe_{0.36}Zn_{0.64}F_2$/Co system, which was previously shown to also have a large uncompensated magnetization, also showed the same effect but at slightly higher temperatures. Using a micromagnetic simulation program (OOMMF) and comparing to the experimental data, the micromagnetic constants were obtained.

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