

Abstract Submitted
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Current-Perpendicular-to-Plane Magnetoresistance of CoFe-based Exchange-Biased Spin-Valves¹ CHIYUI AHN, KYUNG-HO SHIN, Korea Institute of Science and Technology, REZA LOLOEE, JACK BASS, WILLIAM PRATT, Michigan State University — Concentrated Co(50)Fe(50) and Co(70)Fe(30) alloys are of interest for spintronics applications. We have constrained the spin-transport properties of these alloys by measuring at 4.2 K the specific resistance (CPP area times resistance) and magnetoresistance of exchange-biased spin-valves (EBSVs) of the form (FeMn/CoFe/Cu/CoFe)—here CoFe indicates one of the two alloys of interest—where the magnetization of one CoFe layer is exchange bias pinned by the adjacent antiferromagnetic FeMn layer, and the magnetization of the other CoFe layer is free to switch from parallel (P) to anti-parallel (AP) to that of the pinned layer in a modest magnetic field. For each CoFe alloy, we have measured EBSVs where the thicknesses of both the fixed and free layers were held equal and varied together, and EBSVs where the thickness of the pinned CoFe layer was held fixed and that of the free layer was varied. From such measurements we have estimated two parameters: the bulk scattering asymmetry and the spin-diffusion length, for each of the two CoFe alloys. We will present both our data and the derived parameters.

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