IMPROVED ANTIPARALLEL-PINNED SPIN VALVE SENSOR

ABSTRACT

An AP-Pinned SV sensor (400) with the preferred structure of NiO/Ni-Fe/Co/Ru/Co/Cu/Ni-Fe/Cap where the pinned layer comprises first and second ferromagnetic pinned layers (425,426) separated from each other by an anti-parallel coupling layer (424). The first ferromagnetic pinned layer (425) further comprises a first pinned sub-layer of Ni-Fe and a second pinned sub-layer of Co where the first pinned sub-layer (435) of Ni-Fe is formed over and in direct contact with the NiO antiferromagnetic (AFM) layer (430). Addition of the first pinned sub-layer (435) of Ni-Fe isolates the second pinned sub-layer (422) of Co from the NiO AFM layer (430) resulting in dramatic improvement in the pinning field and magnetic moment control of the laminated AP-pinned layer (420).

Fig 4