

SPIN VALVE SENSOR WITH LOW FERROMAGNETIC COUPLING

ABSTRACT

A method of making a thin film spin valve sensor (53) includes depositing a first ferromagnetic pinned layer (122) on an antiferromagnetic layer. During deposition of the first ferromagnetic pinned layer (122), the layer (122) is subjected to a magnetic field provided in a first direction, which establishes a deposition easy axis of the first ferromagnetic pinned layer (122) in said first direction. A non-magnetic electrically conductive spacer layer (120) is then deposited on the first ferromagnetic pinned layer (122) followed by a second ferromagnetic free layer (124) deposited on the spacer layer (120). The method produces a unique spin valve sensor (53) wherein the deposition easy axes of the pinned (122) and free layers (124) are perpendicular with respect to one another rather than being parallel with respect to one another.

Figure 10.