SPIN VALVE SENSOR HAVING IMPROVED INTERFACE BETWEEN PINNING LAYER AND PINNED LAYER STRUCTURE

Abstract

A bilayer interlayer comprising first (402) and second (404) layers of cobalt iron (CoFe) and nickel iron (NiFe) respectively is located between a nickel oxide pinning layer (216) and a cobalt iron (CoFe) pinned layer structure of a spin valve sensor (400). The pinned layer structure may be an antiparallel (AP) pinned layer structure (204) or a single pinned layer of cobalt iron (CoFe) (210). The bilayer interlayer reduces the coercivity of the cobalt iron (CoFe) pinned layer structure so that a magnetic moment of the pinned layer structure is returned to its original position by exchange coupling with the pinning layer (216) when the magnetic moment is rotated to some direction other than the pinned direction. The spin valve sensor (400) manifests an improved magnetoresistive coefficient (dr/R) and thermal stability.

Fig 14