He+ ion bombardment modification of magnetic properties of Co layers sandwiched between Pd and/or Au

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Ion bombardment (IB) is a very efficient method for post-deposition modification of magnetic properties of multilayers (ML_s). In this contribution the influence of He^+ (10 keV) IB on the coercive field (H_C) and hysteresis loop squareness (M_R/M_S, M_R and M_S are saturation and remanence magnetization, respectively) of Pd/Co/Pd, Au/Co/Pd, Pd/Co/Au, and Au/Co/Au ML_s was systematically studied. For Au/Co/Au and Pd/Co/Au ML_s, in full fluence of the He^+ ions (D) range, H_C decreases until M_R/M_S=0. However, for Pd/Co/Pd and Au/Co/Pd systems in a certain range of D and the thicknesses of Co sublayer (t_{Co}), H_C and M_R/M_S increase which indicates that perpendicular magnetic anisotropy (PMA) is enhanced or induced. Considering these properties and taking into account a strong increased or induced PMA of Au/Co/Pd films, this system seems to be a good candidate for magnetically patterned media.