

MAGNETIC DOMAIN STRUCTURE IN ULTRATHIN Co WEDGES GROWN ON VICINAL SAPPHIRE SUBSTRATES

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In the present work we report on magnetic domain structures in ultrathin hcp Co(0001) films grown by molecular beam epitaxy, on vicinal sapphire substrates in the wide Co thickness range. The following nanostructures were deposited on sapphire single-crystal (11 $\bar{2}$ 0) wafers with 1 and 5 deg miscut angles: (i) first buffer layer of 20 nm Mo(110), (ii) second buffer layer of 10 nm Au(111), (iii) a Co wedge with thickness range 0-2.3 nm; (iii) 8nm thick Au cover layer. The measurements were performed at room temperature by means of the polar Kerr effect in polarizing optical microscope. The evolution of the domain structures during the magnetization reversal processes was studied. The Co-thickness dependence of the local coercivity field was determined. Preferential orientation of domain wall was observed. Ordering of domain wall was correlated with magnetization easy axis orientation. The preferention and the coercivity field depend on both Co thickness and the miscut angle.

9.7 cm

13.4 cm

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