MAGNETOOPTICAL MICROMAGNETOMETRY OF ULTRATHIN CO WEDGES.

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9.7 cm

Ultrathin cobalt wedges $Au/Co(d < 3nm)/Au(111)/Mo/Al_2O_3$, grown by MBE, were investigated by means of the polar Kerr effect. Remnant states, affected by a magnetic history of the sample, were investigated by optical polarizing microscope equipped with a high sensitivity CCD camera. Micromagnetometric study, i.e. magnetometry in micrometer scale, were performed. Drastic changes in domain structure were observed with decrease of Co layer thickness below the magnetization reorientation transition from easy axis into easy plane : (i) decrease of domain nucleation density during remagnetization process; (ii) alteration of wall fractal structure in the thickness region, where domain wall propagation mechanism dominates in the process of remagnetization. Also wall velocity dependence on applied field amplitude was measured. Similar changes in domain properties were observed during sample transition into superparamagnetic state. The investigations were compared with classical magnetooptical milimagnetometric study, i.e magnetometry in milimiter scale.

13.4 cm

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