PREISACH MAPS of MULTILAYERED Co/Cu STRUCTURES

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Magnetooptical Kerr effect (MOKE) measurements of room temperature hysteresis loops were taken using sandwich- and multilayer type specimens and He-Ne laser light. For maximal external field of ∼250 Gs the corresponding Kerr angle reached 0.04 deg. The samples were obtained in Institute of Physics, Polish Academy of Sciences, Warszawa, using MBE method. The structure of samples may be described by formula: *substrate – buffer layer –* $(x\mathrm{Co}/y\mathrm{Cu})_n$ *– cover layer*. Al_2O_3 (two orientations) and MgO were used as substrates, the buffer layer was made of W, Cu or Fe, $x = 15, 20$ or 25 Å, $y = 7, 8, 9, 10, 11, 12, 13, 14$ and 20 Å, $n = 25$ and 30. 50 Å of gold (Au) served as a cover layer. The genetic algorithm was subsequently used as a data processing tool, in order to reconstruct the Preisach map for each hysteresis loop. The diagrams clearly indicate changes of magnetic interactions caused by varying thickness of individual magnetic and nonmagnetic layers.

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9.7 cm

13.4 cm

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