ABSTRACT

Diploma work: 83 pages, 40 figures, 4 tables, 51 literature sources

Purpose of study: To investigate the influence of Au intermediate layer thickness on the structure and phase formation in $Fe_{50}Pt_{50}$ alloy based films compositions during heat treatment in flowing N_2 atmosphere.

Object of study: the processes of structure and phase composition formation in nanoscaled $Fe_{50}Pt_{50}$(15 nm)/Au(x)/$Fe_{50}Pt_{50}$(15 nm) (x = 0 nm; 15 nm; 20 nm; 30 nm) films compositions sputtered on SiO_2(100 nm)/Si(001) substrate.

Experimental methods: Magnetron sputtering, thermal treatment (annealing), X-ray analysis (using a X-ray diffractometer equipped with a 2-dimensional (2D) detector and with a scintillation counter), resistometry (four-probe methods).

Practical importance: Obtained results have practical importance for the development of new materials for making data mediums with ultrahigh-density magnetic recording density. The calculations of economic efficiency of the research indicate expediency of this work implementation.

NANOSCALED FILMS COMPOSITIONS; EASY OF MAGNETIZFTION AXIS; ULTRAHIGH-DENSITY MAGNETIC RECORDING; MAGNETIC ANISOTROPY; PHASE TRANSFORMATION; $L1_0$-FePt PHASE.