

ABSTRACT

Diploma work: p. 98, 52 fig., 15 tabl., literature sources 39.

Objective of the study: to investigate the influence of additional Ag top layer on the formation of magnetic solid $L1_0$ -FePt phase in nanoscale films $Fe_{50}Pt_{50}(15nm)$, $Ag(7,5nm)/Fe_{50}Pt_{50}(15nm)$ and $Pt(2nm)/Ag(7,5nm)/Fe_{50}Pt_{50}(15nm)$ on $SiO_2(100nm)/Si(001)$ substrates after annealing in vacuum and N_2 atmosphere.

Methods of the study: X-ray phase analysis (XRD), SQUID magnetometry.

Object of the study: thermally activated processes of phase formation in nanoscale films $Fe_{50}Pt_{50}(15nm)$, $Ag(7,5nm)/Fe_{50}Pt_{50}(15nm)$ and $Pt(2nm)/Ag(7,5nm)/Fe_{50}Pt_{50}(15nm)$.

Subject of the study: nanoscale films $Fe_{50}Pt_{50}(15nm)$, $Ag(7,5nm)/Fe_{50}Pt_{50}(15nm)$ and $Pt(2nm)/Ag(7,5nm)/Fe_{50}Pt_{50}(15nm)$.

Scientific novelty of the results: new knowledge of the laws of diffusion processes of formation of thermally stable nanoscale FePt films with the $L1_0$ -FePt phase in nanoscale films $Fe_{50}Pt_{50}(15nm)$, $Ag(7,5nm)/Fe_{50}Pt_{50}(15nm)$ and $Pt(2nm)/Ag(7,5nm)/Fe_{50}Pt_{50}(15nm)$ has been obtained.

Recommended use: nanoscale films $Fe_{50}Pt_{50}(15nm)$, $Ag(7,5nm)/Fe_{50}Pt_{50}(15nm)$ and $Pt(2nm)/Ag(7,5nm)/Fe_{50}Pt_{50}(15nm)$ can be used as media of ultrahigh density magnetic recording.

NANOSCALED FILM COMPOSITION, ORDERED PHASE, STRUCTURAL REFLEX, ANNEALING, COERCIVE FORCE