

ABSTRACT

The Research Practice's Report: 45 pages, 20 figures, 2 tables, 45 sources.

The main scientific and technological progress characteristics are power and volume of memory modern computer technology's devices. So the creation of hard disk drives with extra large density and storage is very important task of modern science and technology.

The promising materials for magnetic recording are FePt and FePd with chemically ordered $L1_0$ -FePt/FePd phase which has face-centered tetragonal lattice and high values magnetocrystalline anisotropy, which provide recording thermal stability at medium grain size ~ 3 nm. Since size effects are essential in the multilayer films, changing the thickness of the individual layers, will allow you get film materials with desired structural and magnetic parameters. The additional layer's introduction (Cu, Ag, Au) is efficient way to influence film's properties. This work is devoted to the Cu layer's influence on the structure and phase composition of film compositions $Fe_{50}Pd_{50}$. The literature, that is devoted to research of magnetic materials, methods of their production and heat treatment is studied. The obtained results are analyzed and ways for further research on this topic are suggested.

NANOSCALE FILM COMPOSITIONS, MULTILAYER STRUCTURE,
MAGNETIC RECORDING, FePd, COERCIVITY, ULTRAHIGH DENSITY OF
MAGNETIC RECORDING