ABSTRACT

Diploma work : 78 sec., 14 tab., 25 fig., 52 sources.

DOUBLE LAYER Al/Ni THIN FILMS, VACUUM DEPOSITION, MICROSTRUCTURE, PHASE TRANSFORMATIONS, HIGH ENERGY ELECTRON DIFFRACTION, ELECTRON MICROSCOPY, EDS MICROANALYSIS.

Object of study - phase transitions in two-layer system of Al-Ni at annealing in vacuum, and study the microstructure and chemical composition of the system.

Objective: to study characteristics of diffusion transformations, structure formation phase and chemical composition of the two-layer film of Al / Ni in the process of condensation and low temperature annealing in the temperature range Te = 300K - 700 K during 600 s.

Methods of the research includes, high energy electron diffraction, electron microscopy, EDS microanalysis.

It was revealed that the annealing promoutes the formation of intermetallic phases. Recrystallization processes lead to increasing of grain size. The grain size of intermetallic compounds is much larger then in initial phases. Al / Ni ratio corresponds to the area of δ-phase at the Al-Ni phase diagram.