ABSTRACT

Attestation bachelor work: 85 pages, 38 figures, 8 tables, 38 literature sources

Purpose of the study: to research the effect of annealing in magnetic field on structure, phase composition, magnetic and mechanical properties of the Cu-Al-Mn alloy with induced martensite transformation.

Object of the study: the processes of formation of structure and phase composition of samples of Cu-Al-Mn alloy.

Experimental methods: melting in the induction furnace, heat treatment (homogenizing annealing , hardening , aging), thermomagnetic treatment (aging in a magnetic field), X-ray phase analysis, ballistic method, X-ray fluorescent analysis, microhardness analysis, metallographic analysis.

Practical application: The results are of practical importance for the development of new materials using shape memory alloys. Calculations of economic efficiency of the research indicate expediency of the implementation of this work.

INDUCED MARTENSITE TRANSFORMATION; THERMOMAGNETIC TREATMENT; ANNEALING IN THE MAGNETIC FIELD; FERROMAGNETIC Cu-Al-Mn β3-PHASE; Cu_3Al β1-PHASE; TEMPERATURE HYSTERESIS; THE ONSET TEMPERATURE OF MARTENSITE TRANSFORMATION; THERMOELASTICITY; SHAPE MEMORY ALLOYS.