

## ABSTRACT

**Attestation bachelor work:** 39 pages, 19 figures, 3 tables, 23 literature sources.

**Purpose of the study:** to research the effect thermomagnetic treatment on structure, phase composition 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, X-ray fluorescent analysis, metallographic analysis.

**Scientific innovation:** thermomagnetic treatment stimulate the separation of ferromagnetic particles  $\beta_3$ -phase ( $\text{Cu}_2\text{AlMn}$ ), due to the depletion of manganese in the high-temperature  $\beta_1$ -phase ( $\text{Cu,Mn}_3\text{Al}$ ).

**Practical application:** The results are of practical importance for the development: filters for a clean blood, fixing pins for fixing of prosthetic device, sealing the integrated circuit.

INDUCED MARTENSITE TRANSFORMATION; THERMOMAGNETIC TREATMENT; ANNEALING IN THE MAGNETIC FIELD; FERROMAGNETIC  $\text{Cu}_2\text{AlMn}$   $\beta_3$ -PHASE;  $\text{Cu}_3\text{Al}$   $\beta_1$ -PHASE;  $\text{Cu}_3\text{Al}$   $\gamma$ - PHASE; TEMPERATURE HYSTERESIS; THE ONSET TEMPERATURE OF MARTENSITE TRANSFORMATION; THERMOELASTICITY; SHAPE MEMORY ALLOYS.

