

ABSTRACT

Graduate work of a specialist: 83 pages, 29 figures, 15 tables, 63 literature sources

ZIRCONIUM, NIOBIUM, TANTALUM, TITANIUM, MARTENSITIC TRANSFORMATION, THE SHAPE MEMORY EFFECT.

Object of study: samples of alloys $Zr_{88}Nb_5Ta_7$, $Zr_{87}Nb_5Ta_7Ti_1$, $Zr_{86}Nb_5Ta_7Ti_2$ in as-cast and as-quenched state.

Purpose of the study: research alloys $Zr_{88}Nb_5Ta_7$, $Zr_{87}Nb_5Ta_7Ti_1$, $Zr_{86}Nb_5Ta_7Ti_2$ for the martensitic transformation and determine its features.

Experimental methods: optical microscopy, electron microscopy, microdyometric analysis, measurement of the amount of accumulation and restoration of deformation, X-ray diffraction analysis, measurement of electrical resistance.

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.