

## ABSTRACT

Diploma work: 85 pages, 13 tables, 28 figures, 49 literary sources.

ALLOY GRADE 5, ULTRASONIC IMPACT TREATMENT, BORON CARBIDE, SILICON CARBIDE, GRAVIMETRIC ANALYS, HEAT RESISTANCE, MICRODUROMETRIC ANALYS

Object of work – ultrasonic impact treatment as a method of increasing the heat-resistance of the alloy Grade5.

Aim of work – to identify the opportunities of increasing the heat-resistance of the titanium alloy Grade5 by causing on its surface coatings SiC and B<sub>4</sub>C using ultrasonic impact treatment.

Investigation methods – investigation the influence of ultrasonic impact treatment using SiC and B<sub>4</sub>C powders on the structure of the subsurface layers of titanium alloy Grade5 and its corrosion resistance was conducted using methods of modern materials science – gravimetric, microdurometric, metallographic, scanning electron microscopic and X-ray phase analysis.

Determined opportunity of substantially increase heat-resistance and mechanical properties near-surface layers titanium alloy Grade5 by ultrasonic impact treatment with powders of SiC, B<sub>4</sub>C and their mixtures.