## CONCLUSIONS

Thus, research structure and high-temperature mechanical properties of metal-ceramic composite of Ti-TiB system is the result of this work.

Metallographic analysis established that the microstructure of the obtained composites is a matrix of titanium, reinforced with the inclusions of titanium diboride in the form of needles, rods and plates. It is also shown that after rolling the fibers are directed mainly in the direction of deformation.

Research of the phase composition showed that the resulting alloy has two phases: (α-Ti) and titanium monoboride (TiB).

Research of high temperature properties showed that the increase in the test temperature leads to a natural decrease of the elastic modulus and yield strength and increased ductility of the resulting composite.

Research of the macrostructure of samples after compression tests showed that samples tested at room temperature were deformed mainly in the direction of maximum shear stresses at an angle close to $45^{o}$. The increase in the test temperature resulted in more uniform deformation of the samples by volume, which is associated with the inclusion of additional sliding planes during plastic deformation at elevated temperatures.

Research on creep has shown that the creep rates was at the level of pure titanium and slightly higher than creep rates for other titanium alloys that may be due to the presence intergrain and interfacial slippage of the obtained alloys.

The calculated activation energy of the creep process, which amounted to 272 kJ/mol, which correlates well with values of activation energies of self-diffusion process for pure α-titanium.