

CONCLUSIONS

1. The review of literature has been executed in accordance with theme. Classification of composite materials and classification of titanium alloys has been considered. Phase diagrams of binary systems Ti-Si, Ti-Al, Al-Si and ternary diagram of the Ti-Si-Al have been considered. Basic laws of phase equilibria and phase transformations in the system Ti-Si-Al have been studied.

2. The alloy Ti-Si-Al smelted by the arc melting with an infusible tungsten electrode in watercooled copper pots in the atmosphere of the cleaned argon. Experimental alloys have been investigated with light and electron microscopes and EDX microanalysis. Microstructure experimental alloys have been studied.

3. The main influence on the quantity of eutectic in the system Ti-Si alloys reveals Al. Additional alloying with impurity elements moves away lines eutectic system in direction of increasing of Si content up.

4. Microstructural phase analysis of ternary system Ti-Si-Al have been allowed to classify alloys as eutectic type one. Also revealed eutectic line on the chart in part of titanium corner of ternary system Ti-Si-Al.

5. Economical part and the analysis of safety has been calculated as well.