

## ABSTRACT

The work contains 94 p., 45 fig., 11 tab., 46 sources.

The object of research is composite materials based on boron carbide.

The aim of the work is to investigate the influence of technological regimes and chemical composition on the structure and properties of composites B<sub>4</sub>C-SiC-Si.

A technique for introducing carbon into the B<sub>4</sub>C-Si composite was developed and a complex study of the samples was carried out (metallographic analysis, X-ray analysis, durometric analysis). The obtained results showed that an increase in the amount of carbon in the initial charge increases the amount of silicon carbide and the microhardness of the material. The same results are achieved with an increase in the residence time.

Keywords: COMPOSITE MATERIALS, COMPOSITE, PHASE COMPOSITIONS, MICROHARDNESS, BORON CARBIDE, SILICON, SILICON CARBIDE.