# CONCLUSION

Thus, as a result of the work were obtained the eutectic powders of the system $B_4C$-$TiB_2$, which were clad by aluminum and copper, from which the sintered composite materials $B_4C$-$TiB_2$-Al and $B_4C$-$TiB_2$-Cu were obtained by spark-plasma sintering.

The structure of the resulting composites is chaotically directed eutectic grains consisting of a boron carbide matrix reinforced with rod and plate inclusions of titanium diboride, mainly delineated by phases based on Al and Cu, respectively. The study of chemical and phase composition by X-ray spectral analysis and X-ray diffraction studies completely confirmed the data of the metallographic analysis.

Research micromechanical properties showed that the hardness obtained composite achieves 33,6 GPa (for composite $B_4C$-$TiB_2$-Al) and fracture toughness 5,4 MPa*$m^{1/2}$ (for composite $B_4C$-$TiB_2$-Al). It is shown that in general integral composite microhardness corresponds computed by the rule of mixtures.

Thus, it can be concluded that the resulting composite materials $B_4C$-$TiB_2$-Al and $B_4C$-$TiB_2$-Cu are promising for further research and development of these composites as perspective wear-resistant materials.