

CONCLUSIONS

Thus, research structure and properties of titanium carbide thermal emission cathodes, which were obtained through technology of vertical float zoning, is the result of this work.

Metallographic analysis revealed that the obtained microstructure of titanium carbide is a high-purity homogeneous crystal.

Experimental studies of mechanical properties showed that the microhardness and fracture toughness of TiC vary with the rate of loading.

With decreasing of the loading, values of the microhardness and fracture toughness are also decreasing.

It has been found that titanium carbide cathodes should be used preferred as a substitute for LaB₆ by precision welding.