

**Vol. 13, No. 2, 2004**

**Application of Self-propagating High-temperature  
Synthesis to High-current Electronics**

**O.Yu. Dolmatov, D.G. Demyanuk, and M.P. Rychkevitch**

*Tomsk Polytechnic University, ul. Lenina 1, Tomsk, 634 004 RF*

The production of materials applicable to manufacturing electron emitters with preset properties using the SHS method was considered. The conditions required for the process to take place in a reactionable mixture were analyzed taking into account the thermodynamically calculated adiabatic temperature. The possibility of producing cathodic materials was demonstrated experimentally. The material phase composition was studied. The synthesis products were tested on an high-current accelerator. The advantages of the SHS cathodes over conventional cathodes were discussed.