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**The Peculiarities of a Structure Formation Process in a Ti-Al  
Heterogeneous System at Different Thermal Modes of Synthesis**

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**ABSTRACT**

The experimental technique of self-propagating high-temperature synthesis in the conditions of a thermal explosion in the Ti-Al system is discussed in this paper. The external source of heating was disconnected at the moment of reaching the maximum temperatures by the reacting system. The reactor in the experimental stage was situated indoors at the standard conditions. It was shown that the possibility of the obtaining the product with different phase composition, different microstructure and transformation degree of the initial components depended on the temperature of a sidewall. It allowed us to control the process of structure formation in the system.