

Characteristic features of task statement at the numerical research of metallized condensed substance ignition by a local power source

© **Dmitry O. Glushkov,⁺ and Pavel A. Strizhak***

National Research Tomsk Polytechnic University. Lenin St., 30. Tomsk, 634050. Russia.

Phone: +7 (3822) 70-17-77 (1910). E-mail: dmitriyog@tpu.ru

*Supervising author, ⁺Corresponding author

Keywords: *ignition, metallized condensed substance, heat transfer, particle, plate, mathematical modeling.*

Abstract

Comparison of ignition results of the heterogeneous condensed substance of the small single particle heated to high temperatures and a "hot" massive plate within models of two-dimensional and one-dimensional heat transfer was carried out. Ignition time delays of the metallized condensed substance were defined. Scales of local power source heat content influence on process characteristics are established. It has been shown that the use of heat transfer model with first boundary condition leads to greater deviations of local ignition time delay than with the two-dimensional model.