

Modern approaches to modeling of mixed solid propellant burning

© Stanislav M. Reshetnikov, and Weniamin M. Frolov⁺

Department of Physics. Vyatka State University. Moscow St., 36.

Kirov, 610000. Russia. Phone: +7 (8332) 35-01-33.

*Supervising author; ⁺Corresponding author

Key words: *mixed propellant, combustion models, structure of the propellant, local distribution of the binder.*

Abstract

In this article there is an overview of mixed solid propellant burning process modeling, the limitations of existing combustion models are shown and the approaches to the calculation of the mixed system structure are examined. There was developed a method for calculating the local anisotropic distribution of the binder (LARS) near a spherical particle of an oxidant, and in this article there is shown the influence of an anisotropic distribution on the local parameters of combustion. LARS method eliminates some of the floating parameters used in modeling of solid propellants.