

COMBUSTION AND EXPLOSION [GORENIE I VZRYV (MOSKVA)]

Vol. 13 No. 2 Year 2020

Editor-in-Chief S. M. Frolov

In this issue:

Closing knowledge gaps and technological bottlenecks in hydrogen safety: A snapshot of recent activities at Ulster University V. Molkov	3
One-dimensional model of combustion of methane–air mixture in the slot burner A. A. Belyaev, V. M. Shmelev, N. Ya. Vasilik, A. A. Zakharov, and V. S. Arutyunov	10
Infrared burner device on a system of recuperative elements N. Ya. Vasilik and V. M. Shmelev	19
Application of planar laser-induced fluorescence for thermometry in swirl combustion chamber V. M. Dulin, D. K. Sharaborin, R. V. Tolstoguzov, A. S. Lobasov, L. M. Chikishev, and D. M. Markovich	25
Influence of heat exchange conditions and chemical kinetics on the flow structure in the ONERA LAPCAT II model combustor V. V. Vlasenko, Wenchao Liu, S. S. Molev, and V. A. Sabelnikov	36
Detonability of air mixtures of polyethylene pyrolysis products S. M. Frolov, V. I. Zvegintsev, I. O. Shamshin, M. V. Kazachenko, V. S. Aksenov, I. V. Bilera, and I. V. Semenov	48
Numerical simulation of the interaction of a sliding shock wave with a layer of particles using Cartesian grid method D. A. Sidorenko and P. S. Utkin	62
Combustion wave velocity in a pulsed detonation combustor operating on heptane and on Jet A-1 fuel M. S. Assad, O. G. Penyazkov, I. I. Chernukho, and Kh. Alhussan	75
Convective burning and explosion in the mixtures based on ammonium nitrate B. S. Ermolaev, V. G. Khudaverdiev, A. A. Belyaev, V. E. Khrapovskii, and A. A. Sulimov	80
Calculation of the delay time of thermal explosion of a mixed energetic material on polybutadiene binder A. A. Koptelov, I. A. Koptelov, A. A. Matveev, and A. A. Rogozina	96
Slagging of nozzle throat in a ramjet gas generator A. V. Fedorychev, D. V. Zhesterev, and I. R. Mishkin	102
Specific heat and enthalpy of saturated hydrocarbons (alkanes) in the ideal gas state N. M. Kuznetsov and S. M. Frolov	113
Thermal and caloric equations of state for nitrogen in a wide range of density and temperature: Application to calculation of cryogenic jet injection N. M. Kuznetsov, S. N. Medvedev, S. M. Frolov, F. S. Frolov, B. Basara, and K. Pachler	118
Thermochemical properties of mesoionic 1,2,3,4-oxatriazole T. S. Kon'kova, E. A. Miroshnochenko, Yu. N. Matyushin, A. B. Vorob'ev, Ja. O. Inozemtcev, A. V. Inozemtcev, O. V. Serushkina, and I. L. Dalinger	132