

COMBUSTION AND EXPLOSION [GORENIE I VZRYV (MOSKVA)]

Vol. 11 No. 2 Year 2018

Editor-in-Chief S. M. Frolov

In this issue:

Ignition of a stoichiometric acetone–oxygen mixture behind reflected shock waves: Numerical simulation of the kinetics of luminescence of OH* and CO ₂ [*] and absorption of CO ₂ P. A. Vlasov, N. V. Nazarova, V. N. Smirnov, and A. M. Tereza	4
On the role of thermal and kinetic factors in the origin of flammability limits in gaseous mixtures V. V. Azatyan, Yu. N. Shebeko, A. Yu. Shebeko, and A. V. Zuban	11
Effect of steam addition on the process of matrix conversion of methane to syngas A. V. Nikitin, A. V. Ozerskiy, K. A. Timofeev, I. K. Komarov, Y. S. Zimin, I. V. Sedov, V. M. Shmelev, and V. S. Arutyunov	18
Measurement of the heats of combustion of natural combustible gases in the combustion bomb calorimeter A. V. Inozemtsev, J. O. Inozemtsev, and A. B. Vorob'ev	24
On impact of large-scale vortex structures on flame shape in a swirling jet flow L. M. Chikishev, V. M. Dulin, A. S. Lobasov, and D. M. Markovich	31
Influence of heat transfer, turbulence, and kinetics on a flow in model high-speed combustion chamber with step V. V. Vlasenko, O. V. Voloshchenko, S. M. Frolov, A. E. Zangiev, I. V. Semenov, and F. S. Frolov	40
Infrared burning devices with the catalytic radiation screen N. Ya. Vasilik, A. V. Porsin, and V. M. Shmelev	51
Cylindrical radiant burners with maximal radiation efficiency A. S. Maznoy, A. I. Kirdyashkin, and N. S. Pichugin	56
Simulation of turbulent reactive flow by the large eddy simulation method combined with the Monte-Carlo method for calculating subgrid stresses R. R. Tukhvatullina, V. S. Ivanov, S. M. Frolov, and B. Basara	66
Effect of thermal radiation on droplet combustion V. Ya. Basevich, A. A. Belyaev, S. N. Medvedev, S. M. Frolov, and F. S. Frolov	76
Influence of inert gas diluent on aluminum droplet combustion in oxygen mixtures G. P. Kuznetsov, A. G. Istratov, V. I. Kolesnikov-Svinarev, and I. G. Assovskiy	83
Modeling of mixture formation and combustion processes in diesel engine using a detailed kinetic mechanism of fuel oxidation S. S. Sergeev, S. M. Frolov, V. Ya. Basevich, B. Basara, and P. Priesching	88
Slow regime of flame propagation in the combustible foamed emulsion B. V. Kichatov, A. M. Korshunov, A. D. Kiverin, and E. E. Korshunova	99
Estimation of dimensions of bitumen softening region at thermal stimulation of its mining N. M. Kuznetsov	108
New oxygen-rich furozanotriazoles V. P. Sinditskii, T. H. Hoang, S. S. Semyakin, and A. B. Sheremetev	111
Kinetic features of phase transformations in organic high-energy substances N. V. Chukanov, V. V. Zakharov, B. L. Korsunskiy, A. D. Chervonniy, and S. A. Vozchikova	118
Blast waves generated by nonideal detonation of charges exploded with time distributed energy release P. V. Komissarov, A. A. Borisov, B. A. Khasainov, B. S. Ermolaev, and A. A. Sulimov	126