

COMBUSTION AND EXPLOSION [GORENIE I VZRYV (MOSKVA)]

Vol. 8 No. 2 Year 2015

Editor-in-Chief and Chair of Editorial Council Professor S. M. Frolov

In this issue:

| | |
|--|-----|
| Dynamics and temperature of combustion of wood dust – air mixture in a quartz tube <i>V. N. Mironov, O. G. Penyazkov, and K. N. Kasparov</i> | 5 |
| Evaluation of aftercooler performance for ground tests of rocket engines for orbital boosters <i>F. S. Frolov, S. M. Frolov, V. S. Posvyanskii, and I. V. Semenov</i> | 13 |
| On the problem of modeling the heat exchange of condensed combustion products of solid propellant with a cooling wall <i>I. V. Semenov, D. A. Sidorenko, and S. M. Frolov</i> | 26 |
| On correctness of the Cauchy problem for two-velocity two-phase viscous flow <i>R. R. Tukhvatullina</i> | 38 |
| Numerical modeling of the impact of shock wave on bubbly environment <i>K. A. Avdeev, V. S. Aksenov, A. A. Borisov, R. R. Tukhvatullina, S. M. Frolov, and F. S. Frolov</i> | 45 |
| Numerical simulation of the momentum transfer from the shock waves to the bubble media <i>K. A. Avdeev, V. S. Aksenov, A. A. Borisov, R. R. Tukhvatullina, S. M. Frolov, and F. S. Frolov</i> | 57 |
| The shock wave of underwater nuclear explosion <i>N. M. Kuznetsov</i> | 68 |
| Initiation of detonation in heterogeneous mixtures in a small-size tube at rising temperatures <i>M. S. Assad, O. G. Penyazkov, and K. L. Sevrouk</i> | 78 |
| Detonation control of the metal surface plasma modification <i>N. Ya. Vasilik, Yu. N. Tyurin, O. V. Kolisnichenko, M. G. Kovaleva, M. S. Prozorova, and M. Yu. Arsenko</i> | 85 |
| Physics of combustion of mechanical activated compositions with titanium–boron–fluorineplast content <i>A. A. Zenin, V. A. Kluyev, Y. P. Toporov, A. I. Malkin, and S. V. Finjakov</i> | 94 |
| Deformation-heat explosion in reactive medium <i>A. V. Dubovik and A. A. Matveev</i> | 99 |
| Molecular dynamics simulation of crystal melting aluminum at high pressures <i>S. A. Gubin, I. V. Maklashova, A. A. Selezenev, S. A. Kozlova, and T. S. Demidenko</i> | 105 |
| Nonstationary burning in the plane <i>B. V. Lidskiy, G. A. Mkhitarian, B. V. Novozhilov, A. V. Poluyan, and V. S. Posvyanskii</i> | 113 |
| Theoretical models of hotspot-pulsed combustion of double-base propellants and experiment <i>V. N. Marshakov and B. V. Novozhilov</i> | 121 |
| Effect of iron and boron powders on combustion of heterogeneous condensed systems <i>A. G. Korotkikh, V. A. Arkhipov, O. G. Glotov, V. E. Zarko, and R. A. Yusupov</i> | 129 |
| Pulsed mode of combustion of subsurface layer in homogeneous energetic materials <i>V. G. Krupkin and G. N. Mokhin</i> | 138 |

| | |
|--|-----|
| Investigation of hydrazinium dinitramide combustion <i>S. V. Chuiko, G. V. Nechai, and V. I. Schitikova</i> | 147 |
| Features of low-velocity detonation of grained single-base propellants <i>B. S. Ermolaev, V. F. Martynyuk, and A. A. Belyaev</i> | 151 |
| Kinetic and thermochemical properties of trinitromethyl derivatives of 1,3,5-triazine <i>V. V. Nedelko, A. V. Shastin, T. S. Kon'kova, E. A. Miroshnichenko, V. V. Zakharov, N. V. Chukanov, T. S. Larikova, D. B. Lempert, Yu. N. Matyushin, and B. L. Korsunskiy</i> | 160 |
| Energies of chemical bonds and reorganization of free radicals <i>E. A. Miroshnichenko, T. S. Kon'kova, Yu. N. Matyushin, and A. A. Berlin</i> | 170 |
| Energies of salt formation for heterocycles <i>T. S. Kon'kova, E. A. Miroshnichenko, Yu. N. Matyushin, A. B. Vorob'ev, J. O. Inozemtsev, I. L. Dalinger, T. K. Shkineva, and S. A. Shevelev</i> | 175 |
| Dihydroxylammonium 5,5'-bistetrazole-1,1'-diolate (TKX-50): Breakthrough or an error? <i>V. P. Sinditskii, S. A. Filatov, V. I. Kolesov, K. O. Kapranov, A. O. Suprun, A. F. Asachenko, P. B. Dzhevakov, M. A. Topchiiy, M. S. Nechaev, V. V. Lunin, and N. I. Shishov</i> | 186 |
| Thermal decomposition of triazolo- and tetrazoloterazines <i>V. P. Sinditskii, A. V. Burzhava, G. F. Rudakov, and D. A. Zacharova</i> | 195 |
| Thermal stability of energetic materials: High-pressure differential scanning calorimetry study <i>K. A. Monogarov, N. V. Muravyev, A. A. Bragin, A. N. Pivkina, Yu. V. Frolov, and A. A. Gromov</i> | 203 |
| Study of boron particles agglomeration during combustion of high-energy composition <i>D. B. Meerov, K. A. Monogarov, A. A. Bragin, Yu. V. Frolov, A. N. Pivkina, N. I. Shishov, and T. A. Bestuzheva</i> | 211 |
| Features of spin combustion of gasless systems <i>K. L. Klimenok and S. A. Rashkovkiy</i> | 218 |
| Mechanism of initiation of particles in propagation of combustion and detonation at low-density mechanically activated powder mixtures <i>S. A. Rashkovkiy and A. Yu. Dolgoborodov</i> | 226 |
| Convective burning of fine-dispersed mixtures of ammonium nitrate and aluminum in a closed-volume bomb <i>B. S. Ermolaev, V. G. Khudaverdiev, and A. A. Belyaev</i> | 234 |
| Detonation of pressed charges of ammonium perchlorate and aluminum mechanoactivated mixtures <i>A. Yu. Dolgoborodov, A. A. Shevchenko, V. G. Kirilenko, and M. A. Brazhnikov</i> | 242 |
| Laser initiation of energetic complex compounds of some metals <i>G. V. Melik-Gaykazov, G. P. Kuznetsov, and I. G. Assovskiy</i> | 250 |
| Heat of explosion and acceleration ability of mixtures of high explosives with titanium and titanium hydride <i>M. N. Makhov</i> | 256 |
| Synthesis, characteristics, and laws of combustion of cyclic nitramines containing ethylenedinitramine group <i>N. F. Pyatakov and I. B. Vyunova</i> | 263 |
| Combustion of porous samples of nanosized aluminum in air at atmospheric pressure <i>E. M. Popenko, A. A. Gromov, K. A. Monogarov, N. V. Muravyev, and A. A. Bragin</i> | 270 |