

COMBUSTION AND EXPLOSION

[GORENIE I VZRYV (MOSKVA)]

Vol. 11 No. 3 Year 2018

Editor-in-Chief S. M. Frolov

In this issue:

Temperature dependency of laminar flame speed for stoichiometric <i>n</i> -decane/air mixture M. G. Bryukov, S. M. Sergeev, V. A. Kudryashov, and N. V. Petrukhin	4
Simulation of surface combustion on a flat porous matrix V. S. Arutyunov, A. A. Belyaev, B. V. Lidskii, A. V. Nikitin, V. S. Posvyanskii, and V. M. Shmelev	12
Environmental characteristics of cylindrical radiant burners A. Maznay, A. Kirdyashkin, A. Guschin, N. Pichugin, and V. Kitler	21
Numerical evaluation of soot formation control at diesel-like conditions by using surrogate fuels G. L. Agafonov, P. A. Vlasov, O. B. Ryabikov, and V. N. Smirnov	28
About the limit of exhaust gas recirculation in diesel engines A. R. Kulchitskiy and Yu. I. Chestnov	37
Electrical generator of internal combustion V. Shmelev, A. Zakharov, and V. Arutyunov	43
Experimental investigation of low-frequency combustion instability modes for lean methane–air mixtures in low-emission combustors without flow swirling A. N. Dubovitsky, A. B. Lebedev, and E. D. Sverdlov	51
Numerical and experimental investigation of the lift force created by an artificial gas cavity under the bottom of the boat S. M. Frolov, S. V. Platonov, K. A. Avdeev, V. S. Aksakov, A. E. Zangiev, I. A. Sadykov, and I. O. Shamshin	60
Dependence of ignition time of peat on ignition conditions under natural convection of oxidizer A. Yu. Zaichenko, D. N. Podlesniy, M. V. Salganskaya, M. V. Tsvetkov, E. A. Salgansky, and A. I. Malinouski	74
Numerical modeling of shock wave – moving cylinder interaction D. A. Sidorenko and P. S. Utkin	79
Jet thrust of a pulse detonation combustor during combustion of oxygen-enriched heptane/air mixtures M. S. Assad, O. G. Penyazkov, and I. I. Chernukho	87
Pulse detonation thrust module S. M. Frolov, V. S. Ivanov, V. S. Aksakov, A. E. Zangiev, I. O. Shamshin, and P. A. Gusev	92
Heating and ignition of pyrotechnic compositions by near-infrared laser radiation A. K. Dmitriev, V. I. Kolesov, A. N. Konovalov, V. S. Tiurina, V. A. Ul'yanov, and N. V. Yudin	103
Unusual behavior of bimolecular CL-20 crystals in a thermal wave V. P. Sinditskii, A. N. Chernyi, S. Yu. Yurova, D. V. Dashko, T. K. Goncharov, A. A. Kozlov, and N. I. Shishov	110
Mechanoactivated thermite composition Al/CuO A. Yu. Dolgorodov, V. G. Kirilenko, A. N. Streletsckii, I. V. Kolbanov, A. A. Shevchenko, B. D. Yankovskii, S. Yu. Ananayev, and G. E. Val'yano	117
Thermochemical properties of phenylazasidnones T. S. Kon'kova, E. A. Miroshnichenko, Yu. N. Matyushin, A. B. Vorob'ev, J. O. Inozemtsev, A. V. Inozemtsev, O. V. Serushkina, and I. L. Dalinger	125
Transverse effects in air gap at explosion of air-decking borehole charge segment P. V. Komissarov, V. I. Nifadev, V. A. Kovalenko, M. A. Raiymkulov, and S. S. Basakina	130