The materials published in the Journal are distinguished by detailed analysis of effects of chemical kinetics on various macroscopic processes and properties of materials including reacting flows, reactions in gaseous, liquid and solid phases, combustion and explosions, behavior of materials under impact of various factors. The coupling between fluid dynamics, mass and energy transfer and chemical reactions is thoroughly discussed. Another distinguishing feature of the Journal is concentration on theoretical and experimental analysis of elementary physicochemical processes. The Journal regularly publishes papers presented at relevant international conferences such as Shock waves in Condensed Matter, Micromixing, Detonation, International Workshop on Chemical Physics.

The Journal publishes original and review papers relevant to all aspects of chemical physics. Elementary chemical and physical processes on the molecular level are considered. The dynamics of reactions in gaseous, solid, and liquid phases and on interfaces, including the effect of various impacts - electromagnetic field, radiation, mechanical and thermal factors – is widely discussed. Particular attention is paid to combustion, ignition, and detonation phenomena in gases, two-phase media, and solids, to energy transfer processes in reacting media, and to fluid dynamics of reacting media. Shock wave studies are also covered including phenomena on the molecular and meso-levels. Among the other topics the Journal deals with kinetics of biochemical radical reactions, behavior of nanoparticles and materials exhibiting peculiar electromagnetic properties, kinetics of phase transitions, new experimental methods, atmospheric chemistry, and kinetics of polymer synthesis and destruction.

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