Sergei M Frolov

List of Publications by Year in Descending Order

138 papers	1,905 citations	20 h-index	40 g-index
145 ext. papers	2,361 ext. citations	2.3 avg, IF	5.07 L-index

#	Paper	IF	Citations
138	Numerical Modeling of Gasification of Solid Hydracarbon Materials in a Heated-Inert-Gas Flow. *Journal of Engineering Physics and Thermophysics*, **2022**, 95, 20-28	0.6	
137	Simulation of Multistage Autoignition in Diesel Engine Based on the Detailed Reaction Mechanism of Fuel Oxidation. *Mechanisms and Machine Science*, **2022**, 149-165	0.3	
136	Updated conceptual design of hydrogen/ethylene fueled detonation ramjet: Test fires at Mach 1.5, 2.0, and 2.5. *Aerospace Science and Technology*, **2022**, 126, 107602	4.9	0
135	Natural Gas Conversion and Liquid/Solid Organic Waste Gasification by Ultra-Superheated Steam. *Energies*, **2022**, 15, 3616	3.1	0
134	Organic Waste Gasification: A Selective Review. *Fuels*, **2021**, 2, 556-651	2.3	2
133	Breakthrough in the Theory of Ramjets. *Russian Journal of Physical Chemistry B*, **2021**, 15, 318-325	1.2	1
132	Heat Capacities and Enthalpies of Normal Alkanes in an Ideal Gas State. *Energies*, **2021**, 14, 2641	3.1	1
131	Production of highly superheated steam by cyclic detonations of propane- and methane-steam mixtures with oxygen for waste gasification. *Applied Thermal Engineering*, **2021**, 183, 116195	5.8	3
130	The Influence of the Method of Supplying Fuel Components on the Characteristics of a Rotating Detonation Engine. *Combustion Science and Technology*, **2021**, 193, 511-538	1.5	10
129	Gasification of Low-Melting Fuel in a High-Temperature Flow of Inert Gas. *Journal of Propulsion and Power*, **2021**, 37, 20-28	1.8	3
128	Hydrogen fueled detonation ramjet: Conceptual design and test fires at Mach 1.5 and 2.0. *Aerospace Science and Technology*, **2021**, 109, 106459	4.9	7
127	Polyethylene Pyrolysis Products: Their Detonability in Air and Applicability to Solid-Fuel Detonation Ramjets. *Energies*, **2021**, 14, 820	3.1	1
126	Deflagration-to-detonation transition in stochiometric mixtures of the binary methane–hydrogen fuel with air. *International Journal of Hydrogen Energy*, **2021**, 46, 34046-34058	6.7	1
125	A Detonation Afterburner. *Doklady Physics*, **2020**, 65, 36-39	0.8	4
124	Cyclic Detonation of the Ternary Gas Mixture Propane–Oxygen–Steam for Producing Highly Superheated Steam. *Doklady Physical Chemistry*, **2020**, 490, 14-17	0.8	2
123	Gasification of low-melting hydrocarbon material in the airflow heated by hydrogen combustion. *International Journal of Hydrogen Energy*, **2020**, 45, 9098-9112	6.7	4
122	Transient combustion phenomena in high-speed flows in ducts. *Shock Waves*, **2020**, 30, 245-261	1.6	0

121	Reactor for Waste Gasification with Highly Superheated Steam. *Doklady Physical Chemistry*, **2020**, 495, 191-195	0.8	2
120	Detonability of fuel–air mixtures. *Shock Waves*, **2020**, 30, 721-739	1.6	2
119	Rocket Engine with Continuously Rotating Liquid-Film Detonation. *Combustion Science and Technology*, **2020**, 192, 144-165	1.5	8
118	Pulsed detonation hydroramjet: simulations and experiments. *Shock Waves*, **2020**, 30, 221-234	1.6	5
117	Numerical simulation of shock and detonation waves in bubbly liquids. *Shock Waves*, **2020**, 30, 263-271	1.6	4
116	Three-Dimensional Direct Numerical Simulation of Turbulent Combustion of Hydrogen-Air Mixtures in a Synthetic Turbulent Field. *Russian Journal of Physical Chemistry B*, **2019**, 13, 636-645	1.2	2
115	Direct Numerical Simulation of Turbulent Combustion of Hydrogen–Air Mixtures of Various Compositions in a Two-Dimensional Approximation. *Russian Journal of Physical Chemistry B*, **2019**, 13, 75-85	1.2	6
114	Air-breathing pulsed detonation thrust module: Numerical simulations and firing tests. *Aerospace Science and Technology*, **2019**, 89, 275-287	4.9	24
113	Deflagration-to-Detonation Transition in Air Mixtures of Polypropylene Pyrolysis Products. *Doklady Physical Chemistry*, **2019**, 488, 129-133	0.8	3
112	How to utilize the kinetic energy of pulsed detonation products?. *Applied Thermal Engineering*, **2019**, 147, 728-734	5.8	4
111	Hydrogen-fueled detonation ramjet model: Wind tunnel tests at approach air stream Mach number 5.7 and stagnation temperature 1500 K. *International Journal of Hydrogen Energy*, **2018**, 43, 7515-7524	6.7	33
110	Rocket Engine with Continuous Detonation Combustion of the Natural Gas–Oxygen Propellant System. *Doklady Physical Chemistry*, **2018**, 478, 31-34	0.8	17
109	Well-posed Euler model of shock-induced two-phase flow in bubbly liquid. *Shock Waves*, **2018**, 28, 253-266	1.6	1
108	A Detailed Kinetic Mechanism of Multistage Oxidation and Combustion of Octanes. *Russian Journal of Physical Chemistry B*, **2018**, 12, 448-457	1.2	1
107	Continuous Detonation Combustion of Hydrogen: Results of Wind Tunnel Experiments. *Combustion, Explosion and Shock Waves*, **2018**, 54, 357-363	1	6
106	[illegible] 5,7 [illegible]-500 [illegible] *Gorenie I Vzryv (Moskva)* [illegible] *Combustion and Explosion*, **2018**, 11, 54-62	0.5	2
105	Flow Structure in Rotating Detonation Engine with Separate Supply of Fuel and Oxidizer: Experiment and CFD. *Shock Wave and High Pressure Phenomena*, **2018**, 39-59	0.3	12
104	Wind Tunnel Testing of a Detonation Ramjet Model at Approach Air Stream Mach Number 5.7 and a Stagnation Temperature of 1500 K. *Doklady Physical Chemistry*, **2018**, 481, 100-103	0.8	5

103	Rocket Engine with Continuous Film Detonation of Liquid Fuel. *Doklady Physical Chemistry*, **2018**, 481, 105-109	0.8	1
102	Low-Temperature Flameless Combustion of a Large Drop of n-Dodecane under Microgravity Conditions. *Russian Journal of Physical Chemistry B*, **2018**, 12, 245-257	1.2	3
101	Experimental and computational studies of shock wave-to-bubbly water momentum transfer. *International Journal of Multiphase Flow*, **2017**, 92, 20-38	3.6	13
100	Continuous detonation combustion of ternary hydrogen–liquid propane–air mixture in annular combustor. *International Journal of Hydrogen Energy*, **2017**, 42, 16808-16820	6.7	41
99	Tests of the hydrogen-fueled detonation ramjet model in a wind tunnel with thrust measurements **2017**,		1
98	Deflagration-to-detonation transition in crossed-flow fast jets of propellant components. *Doklady Physical Chemistry*, **2017**, 476, 153-156	0.8	3
97	Wind tunnel tests of a hydrogen-fueled detonation ramjet model at approach air stream Mach numbers from 4 to 8. *International Journal of Hydrogen Energy*, **2017**, 42, 25401-25413	6.7	33
96	Hydrojet engine with pulse detonation combustion of liquid-fuel. *Doklady Physical Chemistry*, **2017**, 475, 129-133	0.8	2
95	Deflagration-to-detonation transition in the gas–liquid-fuel film system. *Doklady Physical Chemistry*, **2017**, 474, 93-98	0.8	3
94	Demonstrator of continuous-detonation air-breathing ramjet: Wind tunnel data. *Doklady Physical Chemistry*, **2017**, 474, 75-79	0.8	17
93	Calculation of shock wave propagation in water containing reactive gas bubbles. *Russian Journal of Physical Chemistry B*, **2017**, 11, 261-271	1.2	3
92	Modeling of Low-temperature oxidation and combustion of droplets. *Doklady Physical Chemistry*, **2016**, 470, 150-153	0.8	4
91	Three-dimensional numerical simulation of the characteristics of a ramjet power plant with a continuous-detonation combustor in supersonic flight. *Russian Journal of Physical Chemistry B*, **2016**, 10, 469-482	1.2	24
90	Promotion of the self-ignition of fuel–air mixtures with mechanoactivated Al (Mg)–MoO3 particles. *Russian Journal of Physical Chemistry B*, **2016**, 10, 435-443	1.2	3
89	A detailed kinetic mechanism of multistage oxidation and combustion of isooctane. *Russian Journal of Physical Chemistry B*, **2016**, 10, 801-809	1.2	5
88	Thrust characteristics of an airbreathing pulse detonation engine in flight at mach numbers of 0.4 to 5.0. *Russian Journal of Physical Chemistry B*, **2016**, 10, 272-283	1.2	2
87	Thrust characteristics of a pulse detonation engine operating on a liquid hydrocarbon fuel. *Russian Journal of Physical Chemistry B*, **2016**, 10, 291-297	1.2	6
86	Three-dimensional numerical simulation of a continuously rotating detonation in the annular combustion chamber with a wide gap and separate delivery of fuel and oxidizer **2016**,		10

85	Numerical simulation of momentum transfer from a shock wave to a bubbly medium. *Russian Journal of Physical Chemistry B*, **2015**, 9, 363-374	1.2	7
84	Three-dimensional numerical simulation of the operation process in a continuous detonation combustor with separate feeding of hydrogen and air. *Russian Journal of Physical Chemistry B*, **2015**, 9, 104-119	1.2	26
83	Detailed kinetic mechanism of the multistage oxidation and combustion of isobutane. *Russian Journal of Physical Chemistry B*, **2015**, 9, 268-274	1.2	11
82	Promotion of the high-temperature autoignition of hydrogen-air and methane-air mixtures by normal alkanes. *Russian Journal of Physical Chemistry B*, **2015**, 9, 250-254	1.2	0
81	Experimental proof of Zel'dovich cycle efficiency gain over cycle with constant pressure combustion for hydrogen–oxygen fuel mixture. *International Journal of Hydrogen Energy*, **2015**, 40, 6970-6975	6.7	46
80	Large-scale hydrogen–air continuous detonation combustor. *International Journal of Hydrogen Energy*, **2015**, 40, 1616-1623	6.7	162
79	Momentum transfer from a shock wave to a bubbly liquid. *Russian Journal of Physical Chemistry B*, **2015**, 9, 895-900	1.2	4
78	Chemiionization and acoustic diagnostics of the process in continuous- and pulse-detonation combustors. *Doklady Physical Chemistry*, **2015**, 465, 273-278	0.8	19
77	Detailed kinetic mechanism of the multistep oxidation and combustion of isopentane and isohexane. *Russian Journal of Physical Chemistry B*, **2015**, 9, 933-939	1.2	3
76	Magnetohydrodynamic effects of heterogeneous spray detonation. *Russian Journal of Physical Chemistry B*, **2015**, 9, 637-643	1.2	2
75	Energy efficiency of a continuous-detonation combustion chamber. *Combustion, Explosion and Shock Waves*, **2015**, 51, 232-245	1	19
74	Natural-Gas-Fueled Pulse-Detonation Combustor. *Journal of Propulsion and Power*, **2014**, 30, 41-46	1.8	6
73	Kinetic nature of blue flames in the autoignition of methane. *Russian Journal of Physical Chemistry B* , **2014**, 8, 326-331	1.2	1
72	Transient modes of propagation of the shock wave-reaction zone complex in methane-air mixtures. *Russian Journal of Physical Chemistry B*, **2014**, 8, 158-164	1.2	3
71	Experimental proof of the energy efficiency of the Zel'dovich thermodynamic cycle. *Doklady Physical Chemistry*, **2014**, 459, 207-211	0.8	16
70	3D versus 2D calculation of thrust characteristics of the air-breathing pulse detonation engine under supersonic flight conditions. *Russian Journal of Physical Chemistry B*, **2014**, 8, 859-862	1.2	2
69	Mechanisms of the oxidation and combustion of normal paraffin hydrocarbons: Transition from C1–C10 to C11–C16. *Russian Journal of Physical Chemistry B*, **2013**, 7, 161-169	1.2	22
68	Three-dimensional numerical simulation of the operation of a rotating-detonation chamber with separate supply of fuel and oxidizer. *Russian Journal of Physical Chemistry B*, **2013**, 7, 35-43	1.2	52

67	Thrust characteristics of an airbreathing pulse detonation engine in supersonic flight at various altitudes. *Russian Journal of Physical Chemistry B*, **2013**, 7, 276-289	1.2	6
66	Cyclic deflagration-to-detonation transition in the flow-type combustion chamber of a pulse-detonation burner. *Russian Journal of Physical Chemistry B*, **2013**, 7, 137-141	1.2	5
65	Numerical simulation of flame propagation and localized preflame autoignition in enclosures. *Journal of Loss Prevention in the Process Industries*, **2013**, 26, 302-309	3.5	11
64	Autoignition and combustion of hydrocarbon-hydrogen-air homogeneous and heterogeneous ternary mixtures. *Russian Journal of Physical Chemistry B*, **2013**, 7, 457-462	1.2	4
63	Deflagration-to-detonation transition in a high-velocity flow with separate delivery of fuel and oxidizer. *Doklady Physical Chemistry*, **2013**, 449, 91-93	0.8	2
62	3D simulation of hydrogen ignition in a rapid compression machine. *Journal of Loss Prevention in the Process Industries*, **2013**, 26, 1558-1568	3.5	2
61	Self-ignition of hydrocarbon–hydrogen–air mixtures. *International Journal of Hydrogen Energy*, **2013**, 38, 4177-4184	6.7	33
60	Acceleration of the deflagration-to-detonation transition in gases: From Shchelkin to our days. *Combustion, Explosion and Shock Waves*, **2012**, 48, 258-268	1	7
59	Three-dimensional numerical simulation of the operation of the rotating-detonation chamber. *Russian Journal of Physical Chemistry B*, **2012**, 6, 276-288	1.2	21
58	Detonation initiation in a natural gas-air mixture in a tube with a focusing nozzle. *Doklady Physical Chemistry*, **2011**, 436, 10-14	0.8	8
57	Initiation of detonation in a tube with a profiled central body. *Doklady Physical Chemistry*, **2011**, 438, 114-117	0.8	2
56	Pulse-detonation burner unit operating on natural gas. *Russian Journal of Physical Chemistry B*, **2011**, 5, 625-627	1.2	8
55	Numerical simulation of the operation process and thrust performance of an air-breathing pulse detonation engine in supersonic flight conditions. *Russian Journal of Physical Chemistry B*, **2011**, 5, 597-609	1.2	10
54	Formation of nitrogen oxides in detonation waves. *Russian Journal of Physical Chemistry B*, **2011**, 5, 661-663	1.2	10
53	Experimental demonstration of the operation process of a pulse-detonation liquid rocket engine. *Russian Journal of Physical Chemistry B*, **2011**, 5, 664-667	1.2	3
52	Oxidation and combustion mechanisms of paraffin hydrocarbons: Transfer from C1-C7 to C8H18, C9H20, and C10H22. *Russian Journal of Physical Chemistry B*, **2011**, 5, 974-990	1.2	6
51	Analytical approximation of the thermal and caloric equations of state for real gases over a wide density and temperature range. *Russian Journal of Physical Chemistry B*, **2011**, 5, 1084-1105	1.2	2
50	Numerical and Experimental Investigation of Detonation Initiation in Profiled Tubes. *Combustion Science and Technology*, **2010**, 182, 1735-1746	1.5	4

49	Mechanisms of the amplification of a shock wave passing through a cool flame zone. *Russian Journal of Physical Chemistry B*, **2010**, 4, 101-109	1.2	1
48	Mathematical modeling of the chemical inhibition of the detonation of hydrogen-air mixtures. *Russian Journal of Physical Chemistry B*, **2010**, 4, 308-320	1.2	7
47	Mechanisms of the oxidation and combustion of normal alkanes: Transition from C1□5 to C6H14. *Russian Journal of Physical Chemistry B*, **2010**, 4, 634-640	1.2	7
46	Mechanism of the oxidation and combustion of normal paraffin hydrocarbons: Transition from C1□6 to C7H16. *Russian Journal of Physical Chemistry B*, **2010**, 4, 985-994	1.2	13
45	Simulation of the autoignition and combustion of n-heptane droplets using a detailed kinetic mechanism. *Russian Journal of Physical Chemistry B*, **2010**, 4, 995-1004	1.2	11
44	Initiation of gas detonation in a tube with a shaped obstacle. *Doklady Physical Chemistry*, **2009**, 427, 129-132	0.8	5
43	Combustion science and problems of contemporary power engineering. *Russian Journal of General Chemistry*, **2009**, 79, 2556-2561	0.7	1
42	Correlation between drop vaporization and self-ignition. *Russian Journal of Physical Chemistry B*, **2009**, 3, 333-347	1.2	6
41	Mechanisms of the oxidation and combustion of normal alkanes: Passage from C1-C4 to C2H5. *Russian Journal of Physical Chemistry B*, **2009**, 3, 629-635	1.2	7
40	Real-gas properties of n-alkanes, O2, N2, H2O, CO, CO2, and H2 for diesel engine operation conditions. *Russian Journal of Physical Chemistry B*, **2009**, 3, 1191-1252	1.2	1
39	Shock-to-detonation transition in tube coils **2009**, 365-370		
38	Initiation of gaseous detonation in tubes with sharp U-bends. *Doklady Physical Chemistry*, **2008**, 418, 22-25	0.8	2
37	The calculation of liquid-vapor phase equilibrium in H2O-H2O2 two-component system. *High Temperature*, **2008**, 46, 775-781	0.8	3
36	Fast deflagration-to-detonation transition. *Russian Journal of Physical Chemistry B*, **2008**, 2, 442-455	1.2	30
35	A modified model of the ignition of a magnesium particle. *Russian Journal of Physical Chemistry B*, **2008**, 2, 456-462	1.2	6
34	Propagation of shock and detonation waves in channels with U-shaped bends of limiting curvature. *Russian Journal of Physical Chemistry B*, **2008**, 2, 759-774	1.2	8
33	Reactive shock and detonation propagation in U-bend tubes. *Journal of Loss Prevention in the Process Industries*, **2007**, 20, 501-508	3.5	31
32	Shock wave and detonation propagation through U-bend tubes. *Proceedings of the Combustion Institute*, **2007**, 31, 2421-2428	5.9	47

31	Reduction of the deflagration-to-detonation transition distance and time in a tube with regular shaped obstacles. *Doklady Physical Chemistry*, **2007**, 415, 209-213	0.8	8
30	Deflagration-to-detonation transition in a kerosene-air mixture. *Doklady Physical Chemistry*, **2007**, 416, 261-264	0.8	9
29	The mechanisms of oxidation and combustion of normal alkane hydrocarbons: The transition from C1□3 to C4H10. *Russian Journal of Physical Chemistry B*, **2007**, 2, 477-484	1.2	8
28	A model of laminar flames in droplet suspensions. *Russian Journal of Physical Chemistry B*, **2007**, 2, 493-499	1.2	
27	Kinetics of ?blue' flames in the gas-phase oxidation and combustion of hydrocarbons and their derivatives. *Russian Chemical Reviews*, **2007**, 76, 867-884	6.8	19
26	Liquid-Fueled, Air-Breathing Pulse Detonation Engine Demonstrator: Operation Principles and Performance. *Journal of Propulsion and Power*, **2006**, 22, 1162-1169	1.8	39
25	Initiation of strong reactive shocks and detonation by traveling ignition pulses. *Journal of Loss Prevention in the Process Industries*, **2006**, 19, 238-244	3.5	8
24	Extension of the combustion limits for a porous burner by external heating. *Doklady Physical Chemistry*, **2006**, 406, 43-48	0.8	
23	Detonation initiation by shock wave interaction with the prechamber jet ignition zone. *Doklady Physical Chemistry*, **2006**, 410, 255-259	0.8	7
22	The pressure□emperature□oncentration correlation for aqueous solutions of hydroperoxide. *High Temperature*, **2006**, 44, 47-56	0.8	1
21	Initiation of heterogeneous detonation in tubes with coils and Shchelkin spiral. *High Temperature*, **2006**, 44, 283-290	0.8	3
20	Simple model of transient drop vaporization. *Journal of Russian Laser Research*, **2006**, 27, 562-574	0.7	5
19	Optimization study of spray detonation initiation by electric discharges. *Shock Waves*, **2005**, 14, 175-186	1.6	19
18	Decreasing the predetonation distance in a drop explosive mixture by combined means. *Doklady Physical Chemistry*, **2005**, 401, 28-31	0.8	7
17	Air-Breathing Liquid-Fueled Pulse Detonation Engine Demonstrator. *Doklady Physical Chemistry*, **2005**, 402, 93-95	0.8	4
16	Spray Detonation Initiation by Controlled Triggering of Electric Dischargers. *Journal of Propulsion and Power*, **2005**, 21, 54-64	1.8	20
15	Initiation of Gaseous Detonation by a Traveling Forced Ignition Pulse. *Doklady Physical Chemistry*, **2004**, 394, 16-18	0.8	5
14	Detonation Initiation in Liquid Fuel Sprays by Successive Electric Discharges. *Doklady Physical Chemistry*, **2004**, 394, 39-41	0.8	5

13	Pulse detonation propulsion: challenges, current status, and future perspective. *Progress in Energy and Combustion Science*, **2004**, 30, 545-672	33.6	532
12	Detonation Initiation by Controlled Triggering of Electric Discharges. *Journal of Propulsion and Power*, **2003**, 19, 573-580	1.8	36
11	Stability of 2D two-phase reactive flows. *European Physical Journal Special Topics*, **2002**, 12, 437-444		2
10	Modelling of a turbulent reacting gas/particle flow. *Acta Mechanica*, **2000**, 145, 45-63	2.1	1
9	Modelling of Turbulent Gas/Particle Combustion by a Lagrangian PDF Method. *Combustion Science and Technology*, **1999**, 149, 95-113	1.5	7
8	Gaseous detonations: A selective review. *Progress in Energy and Combustion Science*, **1991**, 17, 327-371	33.6	58
7	Measurement and computation of shock wave attenuation in a rough pipe. *Combustion, Explosion and Shock Waves*, **1990**, 26, 335-338	1	8
6	Interaction of a liquid film with a high-velocity gas flow behind a shock wave. *Combustion, Explosion and Shock Waves*, **1985**, 20, 573-579	1	4
5	Simple model of detonation in a gas-film system with consideration of mechanical fuel removal. *Combustion, Explosion and Shock Waves*, **1985**, 21, 104-110	1	4
4	Pulsed combustion of fuel–air mixture in a cavity above water surface: modeling and experiments. *Shock Waves*,1	1.6	1
3	Pulsed combustion of fuel–air mixture in a cavity under the boat bottom: modeling and experiments. *Shock Waves*,1	1.6	1
2	Pressure measurements in detonation engines. *Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering*,095441002199307	0.9	2
1	Deflagration-to-detonation Transition in Stratified Oxygen–Liquid Fuel Film Systems. *Combustion Science and Technology*,1-35	1.5	