

# Boris I Loukhovitski

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/9140680/publications.pdf>

Version: 2024-02-01

53  
papers

657  
citations

516215

16  
h-index

676716

22  
g-index

57  
all docs

57  
docs citations

57  
times ranked

331  
citing authors

#	ARTICLE	IF	CITATIONS
1	Physics and chemistry of the influence of excited molecules on combustion enhancement. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2015, 373, 20140341.	1.6	42
2	Intensification of shock-induced combustion by electric-discharge-excited oxygen molecules: numerical study. Combustion Theory and Modelling, 2010, 14, 653-679.	1.0	37
3	Theoretical evaluation of diffusion coefficients of (Al <sub>2</sub> O <sub>3</sub> ) <sub>n</sub> clusters in different bath gases. European Physical Journal D, 2014, 68, 1.	0.6	31
4	Application of state-to-state approach in estimation of thermally nonequilibrium reaction rate constants in mode approximation. Chemical Physics, 2012, 398, 73-80.	0.9	29
5	Physical and Thermodynamic Properties of Al <sub>n</sub> C <sub>m</sub> Clusters: Quantum-Chemical Study. Journal of Physical Chemistry A, 2015, 119, 1369-1380.	1.1	29
6	Quantum chemical study of small BnCm cluster structures and their physical properties. European Physical Journal D, 2015, 69, 1.	0.6	24
7	The influence of vibrations of polyatomic molecules on dipole moment and static dipole polarizability: theoretical study. Journal of Physics B: Atomic, Molecular and Optical Physics, 2017, 50, 165101.	0.6	22
8	Modeling of vibrationâ€“electronicâ€“chemistry coupling in the atomicâ€“molecular oxygen system. Chemical Physics, 2009, 360, 18-26.	0.9	21
9	Mechanism of the initiation of combustion in CH <sub>4</sub> (C <sub>2</sub> H <sub>2</sub> )/Air/O <sub>3</sub> mixtures by laser excitation of the O <sub>3</sub> molecules. Kinetics and Catalysis, 2007, 48, 348-366.	0.3	20
10	Theoretical study of structure and physical properties of (Al <sub>2</sub> O <sub>3</sub> ) <sub>n</sub> clusters. Physica Scripta, 2013, 88, 058307.	1.2	20
11	Influence of vibrations and rotations of diatomic molecules on their physical properties: I. Dipole moment and static dipole polarizability. Journal of Physics B: Atomic, Molecular and Optical Physics, 2016, 49, 125102.	0.6	20
12	Influence of vibrations and rotations of diatomic molecules on their physical properties: II. Refractive index, reactivity and diffusion coefficients. Journal of Physics B: Atomic, Molecular and Optical Physics, 2016, 49, 125103.	0.6	20
13	Small atomic clusters: quantum chemical research of isomeric composition and physical properties. Structural Chemistry, 2019, 30, 2057-2084.	1.0	20
14	Comprehensive analysis of combustion enhancement mechanisms in a supersonic flow of CH <sub>4</sub> â€“O <sub>2</sub> mixture with electric-discharge-activated oxygen molecules. Plasma Sources Science and Technology, 2012, 21, 035015.	1.3	18
15	Thermally nonequilibrium effects in shock-induced nitrogen plasma: modelling study. Plasma Sources Science and Technology, 2013, 22, 035013.	1.3	18
16	Initiation of combustion of a CH <sub>4</sub> -O <sub>2</sub> mixture in a supersonic flow with excitation of O <sub>2</sub> molecules by an electric discharge. Combustion, Explosion and Shock Waves, 2008, 44, 249-261.	0.3	17
17	Activation of Chain Processes in Combustible Mixtures by Laser Excitation of Molecular Vibrations of Reactants. Combustion, Explosion and Shock Waves, 2005, 41, 386-394.	0.3	16
18	Reaction of H <sub>2</sub> with O <sub>2</sub> in Excited Electronic States: Reaction Pathways and Rate Constants. Journal of Physical Chemistry A, 2017, 121, 9599-9611.	1.1	15

#	ARTICLE	IF	CITATIONS
19	On combustion enhancement mechanisms in the case of electrical-discharge-excited oxygen molecules. <i>Technical Physics</i> , 2007, 52, 1281-1290.	0.2	14
20	Theoretical study of partial oxidation of methane by non-equilibrium oxygen plasma to produce hydrogen rich syngas. <i>International Journal of Hydrogen Energy</i> , 2015, 40, 9872-9884.	3.8	14
21	DFT study of small aluminum and boron hydrides: isomeric composition and physical properties. <i>Structural Chemistry</i> , 2018, 29, 49-68.	1.0	14
22	Polarizability of electronically excited molecular oxygen: theory and experiment. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2019, 52, 045101.	0.6	14
23	Theoretical Study of the Reactions of Methane and Ethane with Electronically Excited $N_2(A^3\Sigma_u^+)$ . <i>Journal of Physical Chemistry A</i> , 2016, 120, 4349-4359.	1.1	13
24	Structure and properties of $(AlB_2)_n$ and $(MgB_2)_n$ ( $n = 1, \dots, 10$ ) clusters. <i>European Physical Journal D</i> , 2019, 73, 1.	0.6	13
25	Experimental study of high temperature oxidation of dimethyl ether, n-butanol and methane. <i>Combustion and Flame</i> , 2020, 218, 121-133.	2.8	13
26	Numerical study of the enhancement of combustion performance in a scramjet combustor due to injection of electric-discharge-activated oxygen molecules. <i>Plasma Sources Science and Technology</i> , 2013, 22, 065007.	1.3	11
27	A modified model of mode approximation for nitrogen plasma based on the state-to-state approach. <i>Plasma Sources Science and Technology</i> , 2015, 24, 055008.	1.3	11
28	Theoretical study of physical and thermodynamic properties of $Al_nM$ clusters*. <i>European Physical Journal D</i> , 2016, 70, 1.	0.6	11
29	Theoretical study of thermochemical properties of $Al_nC_m$ clusters. <i>Physica Scripta</i> , 2016, 91, 013004.	1.2	11
30	Quantum chemical study of small $Al_nB_m$ clusters: Structure and physical properties. <i>Chemical Physics</i> , 2017, 493, 61-76.	0.9	11
31	Kinetics of low-temperature initiation of $H_2/O_2/H_2O$ mixture combustion upon the excitation of molecular vibrations in $H_2O$ molecules by laser radiation. <i>Technical Physics</i> , 2004, 49, 76-82.	0.2	10
32	Kinetics of plasmachemical processes in the expanding flow of nitrogen plasma. <i>Physica Scripta</i> , 2013, 88, 058306.	1.2	10
33	Thermodynamic Analysis of Prospects for Using Aluminum- and Boron-Containing Clusters in Combined High-Energy Fuels. <i>Journal of Engineering Physics and Thermophysics</i> , 2018, 91, 766-773.	0.2	9
34	Mechanisms of the IR laser initiation of combustion in a supersonic $H_2/O_3/O_2$ flow. <i>Kinetics and Catalysis</i> , 2006, 47, 333-340.	0.3	7
35	On mechanisms of intensifying combustion due to the simultaneous excitation of vibrational and electronic states of reacting molecules. <i>Doklady Physics</i> , 2005, 50, 252-257.	0.2	6
36	Molecular Collision Diameters and Electronic Polarizabilities: Inherent Relationship and Fast Evaluation. <i>Journal of Physical Chemistry A</i> , 2021, 125, 5117-5123.	1.1	6

#	ARTICLE	IF	CITATIONS
37	On the initiation of combustion of O <sub>2</sub> -O <sub>3</sub> mixtures in the course of laser-induced asymmetrical ozone vibrations. <i>Kinetics and Catalysis</i> , 2004, 45, 847-853.	0.3	5
38	Initiation of combustion by laser-induced excitation of molecular vibrations of reactants. <i>Journal of Russian Laser Research</i> , 2006, 27, 533-551.	0.3	5
39	On the Kinetic Mechanism of Ignition of Diborane Mixtures with Air. <i>Combustion, Explosion and Shock Waves</i> , 2020, 56, 249-266.	0.3	5
40	Thermally nonequilibrium processes occurring during the ignition of hydrocarbon-air mixtures behind shock waves. <i>Russian Journal of Physical Chemistry B</i> , 2008, 2, 722-731.	0.2	4
41	Small ternary Al <sub>n</sub> B <sub>m</sub> H <sub>l</sub> clusters: DFT analysis of structure and properties. <i>Structural Chemistry</i> , 2018, 29, 1573-1588.	1.0	4
42	Direct measurements of C <sub>3</sub> F <sub>7</sub> I dissociation rate constants using a shock tube ARAS technique. <i>International Journal of Chemical Kinetics</i> , 2019, 51, 206-214.	1.0	4
43	On the Refractive Index of a Gas under High-Thermal-Nonequilibrium Conditions. <i>Journal of Engineering Physics and Thermophysics</i> , 2020, 93, 850-857.	0.2	4
44	Energy disposal into the vibrational degrees of freedom of bimolecular reaction products: Key factors and simple model. <i>Chemical Physics</i> , 2021, 544, 111098.	0.9	4
45	Reaction of the N Atom with Electronically Excited O <sub>2</sub> Revisited: A Theoretical Study. <i>Journal of Physical Chemistry A</i> , 2021, 125, 8294-8312.	1.1	2
46	Initiation of Combustion in a Supersonic Hydrogen-Air Mixture Flow by CO <sub>2</sub> -Laser Radiation. <i>Fluid Dynamics</i> , 2005, 40, 305-314.	0.2	1
47	DFT study of small aluminum and boron hydrides: isomeric composition and physical properties. , 2018, 29, 49.		1
48	Toward size-dependent thermodynamics of nanoparticles from quantum chemical calculations of small atomic clusters: a case study of (B <sub>2</sub> O <sub>3</sub> ) <sub>n</sub> . <i>Physical Chemistry Chemical Physics</i> , 2022, , .	1.3	1
49	Control of combustion and detonation by means of resonance laser radiation: analysis and potentialities. , 2003, , .		0
50	<title>Laser-induced excitation of target molecules as an efficient approach to control the combustion and technological chemical processes</title>. , 2006, 6053, 245.		0
51	Energy Levels and State-Specific Electric Properties. <i>Springer Briefs in Molecular Science</i> , 2022, , 23-56.	0.1	0
52	Polarizability of Electronically Excited States. <i>Springer Briefs in Molecular Science</i> , 2022, , 67-74.	0.1	0
53	Dependences of Potential Energy and Electric Properties of Molecule on Nuclear Displacements. <i>Springer Briefs in Molecular Science</i> , 2022, , 5-22.	0.1	0