Vladimir Baidakov

List of Publications by Year
in descending order

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102	1,348	304743	414414
papers	citations	22 h-index	32 g-index

109	109	109	563
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Curvature dependence of the surface tension of liquid and vapor nuclei. Physical Review E, 1999, 59, 469-475.	2.1	68
2	Singular Point of a System of Lennard-Jones Particles at Negative Pressures. Physical Review Letters, 2005, 95, 015701.	7.8	61
3	Metastable extension of the liquid-vapor phase equilibrium curve and surface tension. Journal of Chemical Physics, 2007, 126, 214505.	3.0	61
4	Spontaneous cavitation in a Lennard-Jones liquid at negative pressures. Journal of Chemical Physics, 2014, 140, 184506.	3.0	59
5	Crystal nucleation and the solidâ€“liquid interfacial free energy. Journal of Chemical Physics, 2012, 136, 074510.	3.0	50
6	Statistical substantiation of the van der Waals theory of inhomogeneous fluids. Physical Review E, 2002, 65, 041601.	2.1	45
7	Crystal nucleation rate isotherms in Lennard-Jones liquids. Journal of Chemical Physics, 2010, 132, 234505.	3.0	38
8	Nucleation in superheated liquid argonâ€“krypton solutions. Journal of Chemical Physics, 1997, 106, 5648-5657.	3.0	36
9	Explosive cavitation in superheated liquid argon. Journal of Chemical Physics, 2008, 128, 234508.	3.0	35
10	Kinetics of boiling in binary liquidâ€“gas solutions: Comparison of different approaches. Journal of Chemical Physics, 2003, 119, 6166-6183.	3.0	34
11	Surface tension of helium-oxygen and helium-ethane solutions. International Journal of Thermophysics, 1995, 16, 909-927.	2.1	33
12	Surface tension of ethaneâ€“methane solutions: 1. Experiment and thermodynamic analysis of the results. Fluid Phase Equilibria, 2013, 356, 90-95.	2.5	31
13	Metastable Lennard-Jones fluids. I. Shear viscosity. Journal of Chemical Physics, 2012, 137, 164507.	3.0	29
14	Spontaneous cavitation in a Lennard-Jones liquid: Molecular dynamics simulation and the van der Waals-Cahn-Hilliard gradient theory. Journal of Chemical Physics, 2016, 144, 074502.	3.0	28
15	Nucleation in superheated gas-saturated solutions. I. Boiling-up kinetics. Journal of Chemical Physics, 1999, 110, 3955-3960.	3.0	27
16	Kinetics of Condensation and Boiling:Â Comparison of Different Approachesâ€. Journal of Physical Chemistry B, 2001, 105, 11595-11604.	2.6	27
17	Extended version of the van der Waals capillarity theory. Journal of Chemical Physics, 2004, 121, 8594.	3.0	27
18	Time of Formation of the First Supercritical Nucleus, Timeâ€lag, and the Steadyâ€State Nucleation Rate. International Journal of Applied Glass Science, 2017, 8, 48-60.	2.0	27

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19	Temperature dependence of the crystal-liquid interfacial free energy and the endpoint of the melting line. Journal of Chemical Physics, 2013, 139, 224703.	3.0	25
20	Entropy and the Tolman Parameter in Nucleation Theory. Entropy, 2019, 21, 670.	2.2	25
21	Surface tension of an ethaneâ€“nitrogen solution. 1: Experiment and thermodynamic analysis of the results. Fluid Phase Equilibria, 2012, 328, 13-20.	2.5	23
22	Equation of State for Lennard-Jones Fluid. High Temperature, 2003, 41, 270-272.	1.0	22
23	Computer simulation of nucleation in a liquid under tension. Doklady Physics, 2004, 49, 69-72.	0.7	20
24	Heterogeneous Vapor Bubble Nucleation on a Rough Surface. Langmuir, 2013, 29, 3924-3934.	3.5	18
25	Metastable Lennard-Jones fluids. II. Thermal conductivity. Journal of Chemical Physics, 2014, 140, 214506.	3.0	18
26	Experimental Investigations of Nucleation in Heliumâ^'Oxygen Mixtures. Journal of Physical Chemistry B, 2002, 106, 167-175.	2.6	17
27	Metastable extensions of phase equilibrium lines and singular points of simple substance. Journal of Experimental and Theoretical Physics, 2006, 103, 876-886.	0.9	17
28	Capillary constant and surface tension of methaneâ€“helium solution. Fluid Phase Equilibria, 2013, 354, 245-249.	2.5	16
29	Molecular-Dynamics Simulation of Relaxation Processes at Liquidâ€“Gas Interfaces in Single- and Two-Component Lennard-Jones Systems. Colloid Journal, 2019, 81, 491-500.	1.3	16
30	Surface tension at the boundaries of helium-argon and neon-argon solutions at 108â€“140 K. Russian Journal of Physical Chemistry A, 2006, 80, 413-417.	0.6	15
31	Computer simulation of nucleation in a gas-saturated liquid. Journal of Chemical Physics, 2007, 126, 094502.	3.0	15
32	Molecular-Dynamics Investigation of Phase Equilibrium and Surface Tension in Argonâ^'Neon System. Journal of Physical Chemistry C, 2008, 112, 17231-17234.	3.1	15
33	Relaxation processes at liquid-gas interfaces in one- and two-component Lennard-Jones systems: Molecular dynamics simulation. Fluid Phase Equilibria, 2019, 481, 1-14.	2.5	14
34	Cavitation and crystallization in a metastable Lennard-Jones liquid at negative pressures and low temperatures. Journal of Chemical Physics, 2011, 135, 054512.	3.0	13
35	Metastable Lennard-Jones fluids. III. Bulk viscosity. Journal of Chemical Physics, 2014, 141, 114503.	3.0	13
36	Homogeneous nucleation in liquid nitrogen at negative pressures. Journal of Experimental and Theoretical Physics, 2016, 123, 629-637.	0.9	13

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37	Spontaneous Crystallization of a Supercooled Lennard-Jones Liquid: Molecular Dynamics Simulation. Journal of Physical Chemistry B, 2019, 123, 8103-8112.	2.6	13
38	Attainable Superheat of Argonâ^'Helium, Argonâ^'Neon Solutions. Journal of Physical Chemistry B, 2008, 112, 12973-12975.	2.6	11
39	Curvature corrections to surface tension. Physical Review E, 2004, 70, 011603.	2.1	10
40	Metastable extension of the sublimation curve and the critical contact point. Journal of Chemical Physics, 2006, 124, 231101.	3.0	10
41	Shear and bulk viscosity in stable and metastable states of a Lennard-Jones liquid. Chemical Physics Letters, 2011, 517, 166-170.	2.6	10
42	On two approaches to determination of the nucleation rate of a new phase in computer experiments. Thermochimica Acta, 2011, 522, 14-19.	2.7	10
43	Bubble nucleation in a Lennard-Jones binary liquid mixture. Chemical Physics Letters, 2016, 663, 57-60.	2.6	10
44	Nucleation of liquid droplets and voids in a stretched Lennard-Jones fcc crystal. Journal of Chemical Physics, 2015, 143, 124501.	3.0	9
45	Capillary Constant of a Xenonâ€“Helium Solution. Journal of Chemical & Engineering Data, 2011, 56, 4123-4125.	1.9	8
46	Melting line, spinodal and the endpoint of the melting line in the system with a modified Lennardâ€”Jones potential. Thermophysics and Aeromechanics, 2013, 20, 93-104.	0.5	8
47	Surface free energy of the crystal-liquid interface on the metastable extension of the melting curve. JETP Letters, 2014, 98, 801-804.	1.4	8
48	Boiling characteristics of emulsions with a low-boiling dispersed phase and surfactants. Journal of Engineering Physics and Thermophysics, 1997, 70, 179-181.	0.6	7
49	Nucleation in Liquid Ethane with Small Additions of Methane. Journal of Physical Chemistry C, 2012, 116, 20458-20464.	3.1	7
50	Comment on â€œSimple improvements to classical bubble nucleation modelsâ€• Physical Review E, 2016, 94, 026801.	2.1	7
51	On different possibilities of a thermodynamically consistent determination of the work of critical cluster formation in nucleation theory. Journal of Chemical Physics, 2003, 119, 10759-10763.	3.0	6
52	Spinodal and the melting curve of a Lennard-Jones crystal at negative pressure. Doklady Physics, 2005, 50, 303-307.	0.7	6
53	Effect of long-range interactions on the surface tension. Russian Journal of Physical Chemistry A, 2006, 80, 445-448.	0.6	6
54	Capillary constant and surface tension of dimethyl ether and n-butane at temperatures from 214ÂK to those close to the critical point. Fluid Phase Equilibria, 2016, 414, 55-59.	2.5	6

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55	Spontaneous nucleation frequency in superheated liquid xenon and krypton. Journal of Engineering Physics, 1980, 38, 408-411.	0.0	5
56	Superheating of liquid xenon in metal tubes. Journal of Chemical Physics, 2009, 131, 064708.	3.0	5
57	First correction to surface tension for the curvature of an interface. Colloid Journal, 2009, 71, 437-445.	1.3	5
58	Limiting tensile strength of liquid nitrogen. Physics of Fluids, 2016, 28, .	4.0	5
59	Ideal and Ultimate Tensile Strength of a Solid Body. High Temperature, 2018, 56, 184-192.	1.0	5
60	Attainable Superheating of Liquid Heliumâ€“Oxygen Solutions. High Temperature, 2000, 38, 852-859.	1.0	4
61	Attainable superheating of liquefied gases and their solutions (Review Article). Low Temperature Physics, 2013, 39, 643-664.	0.6	4
62	Mechanical instability and nucleation in a Lennardâ€“Jones fcc crystal at limiting stretching. Chemical Physics Letters, 2016, 643, 6-9.	2.6	4
63	Phase equilibria, metastable states, and critical points in a simple one-component system. Journal of Engineering Thermophysics, 2016, 25, 327-336.	1.4	4
64	Spontaneous Nucleation in Superheated Helium Solutions in Methane. Colloid Journal, 2019, 81, 211-218.	1.3	4
65	The van der Waals Theory of Capillarity and Computer Simulation. Colloid Journal, 2002, 64, 661-670.	1.3	3
66	Is Gibbs' Thermodynamic Theory of Heterogeneous Systems Really Perfect?. , 2005, , 418-446.		3
67	Thermodynamic approach to calculating the surface tension of single-component liquids by computer simulations. Russian Journal of Physical Chemistry A, 2006, 80, 1519-1520.	0.6	3
68	Properties of argon liquid-vapor interface. Colloid Journal, 2006, 68, 26-31.	1.3	3
69	Transport coefficients and the spinodal of a fluid. Physical Review E, 2012, 86, 021201.	2.1	3
70	Vitrification of Liquid Inclusions in hcp 3He-4He Crystal: the Role of an Intermediate bcc Phase. Journal of Low Temperature Physics, 2014, 175, 154-159.	1.4	3
71	Nucleation and relaxation processes in weak solutions: molecular dynamics simulation. Molecular Simulation, 0, , 1-11.	2.0	3
72	Stability of Metastable Phases and Kinetics of Nucleation in a Simple Single-Component System (Molecular Dynamics Simulation) (A Review). Russian Journal of General Chemistry, 2022, 92, 611-628.	0.8	3

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73	Attainable superheating of solutions of cryogenic liquids. Journal of Engineering Thermophysics, 2007, 16, 109-118.	1.4	2
74	Boiling-up of superheated liquid argon in an acoustic field. Journal of Physics Condensed Matter, 2009, 21, 465103.	1.8	2
75	The attainable superheating of nitrogen-helium solutions. Russian Journal of Physical Chemistry A, 2009, 83, 1751-1756.	0.6	2
76	Boiling-up of liquid argon at high superheatings under the impact of weak ultrasonic fields. Thermophysics and Aeromechanics, 2011, 18, 31-36.	0.5	2
77	Transfer coefficients near the boundary of thermodynamic stability. High Temperature, 2013, 51, 621-625.	1.0	2
78	Surface tension of dimethyl ether in the temperature range 120â€“214 K. Russian Journal of Physical Chemistry A, 2015, 89, 782-785.	0.6	2
79	Surface tension of cavitation pockets according to data of computer simulation of nucleation in a stretched fluid. Colloid Journal, 2015, 77, 119-124.	1.3	2
80	Attainable superheating of liquid n-butane. Physics of Fluids, 2018, 30, .	4.0	2
81	Cavitation strength of oxygen-nitrogen solutions under pulse stretching. Physics of Fluids, 0, , .	4.0	2
82	On the mechanism of formation of incipient-phase nuclei in the strong-metastability region. Doklady Physics, 2004, 49, 15-18.	0.7	1
83	Boiling-Up Kinetics of Solutions of Cryogenic Liquids. , 2005, , 126-177.		1
84	The thermodynamic properties of nitrogen, argon, oxygen, and their mixtures in the region of the liquid-gas phase transition. Russian Journal of Physical Chemistry A, 2006, 80, 501-504.	0.6	1
85	Metastable phase equilibria in a Lennard-Jones system. Journal of Engineering Thermophysics, 2007, 16, 249-258.	1.4	1
86	Temperature dependence of the surface free energy of a crystal-liquid interface. Russian Journal of Physical Chemistry A, 2012, 86, 1763-1765.	0.6	1
87	The Kinetics of the Liquid Phase Nucleation in a Stretched FCC Crystal: A Molecular Dynamics Simulation. Physics of the Solid State, 2018, 60, 1853-1860.	0.6	1
88	Effective Surface Free Energy of Crystalline Phase Nuclei. Colloid Journal, 2019, 81, 634-641.	1.3	1
89	Ideal and limiting strength of a Lennard-Jones crystal at temperatures lower than the melting line endpoint temperature: molecular dynamics simulation. Molecular Simulation, 2020, 46, 1417-1425.	2.0	1
90	Metadynamics Study of the Crystallization of Supercooled Lennard-Jones Liquids. Russian Journal of Physical Chemistry A, 2021, 95, 403-405.	0.6	1

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91	Study of the Activation Barrier of Crystallization of a Metastable Liquid Using Metadynamics. Physics of the Solid State, 2022, 64, 22-25.	0.6	1
92	Nucleation in Solutions of Liquefied Gases. , 0, , 159-217.		0
93	Equilibrium, Stability, and Metastability. , 0, , 7-59.		0
94	Explosive Boiling-Up of Cryogenic Liquids. , 0, , 309-319.		0
95	Attainable Superheating of One-Component Liquids. , 0, , 61-158.		0
96	Nucleation in Highly Correlated Systems. , 0, , 219-272.		0
97	Attainable superheat of ethane-methane solutions. Thermophysics and Aeromechanics, 2013, 20, 399-406.	0.5	0
98	Kinetics of nucleation during the bcc-hcp structural transition in solid helium. Low Temperature Physics, 2013, 39, 487-492.	0.6	0
99	Attainable superheating of the oxygen-nitrogen-helium solutions. Thermophysics and Aeromechanics, 2015, 22, 85-94.	0.5	0
100	Mechanical stability of solids at negative pressures. Journal of Physics: Conference Series, 2016, 774, 012004.	0.4	0
101	Stability of a Crystal at Temperatures below the Temperature of the End Point of the Melting Line: Molecular Dynamics Simulation. High Temperature, 2021, 59, 62-65.	1.0	0
102	Nucleation Kinetics Near the Absolute Zero of Temperature. , 0, , 273-308.		0