Valentin N Ryzhov

List of Publications by Year
in descending order

124	3,128	147801	189892
papers	citations	31 h-index	50 g-index

131	131	131	990
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Two liquid states of matter: A dynamic line on a phase diagram. Physical Review E, 2012, 85, 031203.	2.1	209
2	â€œLiquid-Gasâ€•Transition in the Supercritical Region: Fundamental Changes in the Particle Dynamics. Physical Review Letters, 2013, 111, 145901.	7.8	142
3	Widom Line for the Liquidâ€“Gas Transition in Lennard-Jones System. Journal of Physical Chemistry B, 2011, 115, 14112-14115.	2.6	120
4	Quasibinary amorphous phase in a three-dimensional system of particles with repulsive-shoulder interactions. Journal of Chemical Physics, 2008, 129, 064512.	3.0	116
5	Where is the supercritical fluid on the phase diagram?. Physics-Uspekhi, 2012, 55, 1061-1079.	2.2	111
6	Waterlike thermodynamic anomalies in a repulsive-shoulder potential system. Physical Review E, 2009, 79, 051202.	2.1	99
7	Thermodynamic properties of supercritical carbon dioxide: Widom and Frenkel lines. Physical Review E, 2015, 91, 022111.	2.1	81
8	Complex crystalline structures in a two-dimensional core-softened system. Soft Matter, 2018, 14, 2152-2162.	2.7	80
9	Two-stage melting in two dimensions: First-principles approach. Physical Review B, 1995, 51, 8789-8794.	3.2	78
10	Breakdown of excess entropy scaling for systems with thermodynamic anomalies. Physical Review E, 2010, 81, 061201.	2.1	74
11	Berezinskii â€“ Kosterlitz â€“ Thouless transition and two-dimensional melting. Physics-Uspekhi, 2017, 60, 857-885.	2.2	71
12	Van der Waals supercritical fluid: Exact formulas for special lines. Journal of Chemical Physics, 2011, 135, 084503.	3.0	62
13	Inversion of sequence of diffusion and density anomalies in core-softened systems. Journal of Chemical Physics, 2011, 135, 234502.	3.0	55
14	Superfragile Glassy Dynamics of a One-Component System with Isotropic Potential: Competition of Diffusion and Frustration. Physical Review Letters, 2013, 110, 025701.	7.8	53
15	Solvable model of a quadrupolar glass. Journal of Physics C: Solid State Physics, 1984, 17, L665-L667.	1.5	49
16	How dimensionality changes the anomalous behavior and melting scenario of a core-softened potential system?. Soft Matter, 2014, 10, 4966-4976.	2.7	48
17	Repulsive step potential: A model for a liquid-liquid phase transition. Physical Review E, 2003, 67, 010201.	2.1	47
18	True Widom line for a square-well system. Physical Review E, 2014, 89, 042136.	2.1	46

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19	Effect of a potential softness on the solid-liquid transition in a two-dimensional core-softened potential system. Journal of Chemical Physics, 2014, 141, 18C522.	3.0	45
20	Silicalike sequence of anomalies in core-softened systems. Physical Review E, 2013, 87, 042122.	2.1	43
21	Core-softened system with attraction: Trajectory dependence of anomalous behavior. Journal of Chemical Physics, 2011, 135, 124512.	3.0	42
22	Soliton and 2D Domains in Ultrathin Magnetic Films. Physical Review Letters, 1997, 78, 2224-2227.	7.8	41
23	Complex phase behavior of the system of particles with smooth potential with repulsive shoulder and attractive well. Journal of Chemical Physics, 2011, 134, 044523.	3.0	41
24	Dynamical crossover line in supercritical water. Scientific Reports, 2015, 5, 14234.	3.3	40
25	Melting in two dimensions: first-order versus continuous transition. Physica A: Statistical Mechanics and Its Applications, 2002, 314, 396-404.	2.6	39
26	Evidence for structural crossover in the supercritical state. Journal of Chemical Physics, 2013, 139, 234501.	3.0	39
27	Random pinning changes the melting scenario of a two-dimensional core-softened potential system. Physical Review E, 2015, 92, 032110.	2.1	36
28	Collapse transition in mixtures of bosons and fermions. Physical Review A, 2004, 69, .	2.5	35
29	Towards a statistical theory of freezing. Physics Letters, Section A: General, Atomic and Solid State Physics, 1979, 75, 88-90.	2.1	34
30	How to quantify structural anomalies in fluids?. Journal of Chemical Physics, 2014, 141, 034508.	3.0	33
31	Generalized van der Waals theory of liquid-liquid phase transitions. Physical Review E, 2006, 74, 041201.	2.1	32
32	Statistical theory of crystallization in a system of hard spheres. Theoretical and Mathematical Physics(Russian Federation), 1981, 48, 835-840.	0.9	31
33	The phase diagram and melting scenarios of two-dimensional Hertzian spheres. Molecular Physics, 2018, 116, 3258-3270.	1.7	31
34	Vortex states in a binary mixture of Bose-Einstein condensates. Physical Review A, 2001, 63, .	2.5	28
35	Dynamic transition in supercritical iron. Scientific Reports, 2014, 4, 7194.	3.3	28
36	Dynamics, thermodynamics and structure of liquids and supercritical fluids: crossover at the Frenkel line. Journal of Physics Condensed Matter, 2018, 30, 134003.	1.8	28

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37	Water-like anomalies in the core-softened systems: Dependence on the trajectory in density-temperature plane. Physics Letters, Section A: General, Atomic and Solid State Physics, 2011, 375, 2181-2184.	2.1	26
38	Universal crossover of liquid dynamics in supercritical region. JETP Letters, 2012, 95, 164-169.	1.4	26
39	Melting Scenario of the Two-Dimensional Core-Softened System: First-Order or Continuous Transition?. Journal of Physics: Conference Series, 2014, 510, 012016.	0.4	25
40	Crossover of collective modes and positive sound dispersion in supercritical state. Journal of Physics Condensed Matter, 2016, 28, 43LT01.	1.8	25
41	Title is missing!. Theoretical and Mathematical Physics(Russian Federation), 2002, 130, 101-110.	0.9	24
42	Complex phase diagrams of systems with isotropic potentials: results of computer simulations. Physics-Uspekhi, 2020, 63, 417-439.	2.2	23
43	Results for the phase diagram of the vortex system in two-dimensional superconductors. Physical Review B, 1994, 49, 6162-6173.	3.2	21
44	Low-temperature phase transition in the three-state Potts glass. Physical Review E, 2003, 68, 067103.	2.1	21
45	Inversion of sequence of anomalies in core-softened systems with attraction. European Physical Journal: Special Topics, 2013, 216, 165-173.	2.6	21
46	Phase diagram of the system with the repulsive shoulder potential in two dimensions: Density functional approach. Physica A: Statistical Mechanics and Its Applications, 2015, 432, 279-286.	2.6	21
47	Liquid-like and gas-like features of a simple fluid: An insight from theory and simulation. Physica A: Statistical Mechanics and Its Applications, 2018, 509, 690-702.	2.6	21
48	Local structure and bond orientational order in a Lennard-Jones liquid. Journal of Physics Condensed Matter, 1990, 2, 5855-5865.	1.8	20
49	Phase separation and vortex states in the binary mixture of Bose-Einstein condensates. Journal of Experimental and Theoretical Physics, 2000, 91, 1183-1189.	0.9	20
50	A liquid-liquid phase transition in the â€œcollapsingâ€•hard sphere system. Journal of Experimental and Theoretical Physics, 2002, 95, 710-713.	0.9	20
51	Transport coefficients of soft sphere fluid at high densities. JETP Letters, 2012, 95, 320-325.	1.4	20
52	Statistical mechanics of vortex systems in two-dimensional superconductors. Physical Review B, 1993, 48, 12907-12911.	3.2	19
53	Disclination-mediated melting of two-dimensional lattices. Theoretical and Mathematical Physics(Russian Federation), 1991, 88, 990-997.	0.9	18
54	Statistical theory of crystallization in classical systems. Theoretical and Mathematical Physics(Russian Federation), 1983, 55, 399-405.	0.9	17

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55	Bond orientational order in simple liquids. Journal of Physics C: Solid State Physics, 1988, 21, 819-824.	1.5	17
56	First-order vortex unbinding transition in thin superconducting films. Physical Review B, 1996, 54, 3051-3054.	3.2	17
57	Stability of the Bose system in Bose-Fermi mixture with attraction between bosons and fermions. JETP Letters, 2004, 80, 274-279.	1.4	17
58	Isoviscosity lines and the liquid-glass transition in simple liquids. Physical Review E, 2012, 86, 011503.	2.1	17
59	Properties of liquid iron along the melting line up to Earth-core pressures. Journal of Physics Condensed Matter, 2013, 25, 285104.	1.8	17
60	Comment on â€œBehavior of Supercritical Fluids across the â€˜Frenkel Lineâ€™â€•. Journal of Physical Chemistry B, 2018, 122, 6124-6128.	2.6	17
61	The behavior of cyclohexane confined in slit carbon nanopore. Journal of Chemical Physics, 2015, 143, 184702.	3.0	16
62	Reflection symmetry in mean-field replica-symmetric spin glasses. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 315, 467-473.	2.1	15
63	Vortex-vortex interaction in a superconducting film of finite thickness. Physics Letters, Section A: General, Atomic and Solid State Physics, 1995, 207, 374-378.	2.1	14
64	The behavior of benzene confined in a single wall carbon nanotube. Journal of Computational Chemistry, 2015, 36, 901-906.	3.3	14
65	Microscopic description of bond orientational order in simple liquids. Theoretical and Mathematical Physics(Russian Federation), 1987, 73, 1344-1352.	0.9	13
66	Microscopic approach to calculation of the shear and bulk moduli and the frank constant in two-dimensional melting. Theoretical and Mathematical Physics(Russian Federation), 1992, 92, 922-930.	0.9	13
67	Stable and unstable regimes in Bose-Fermi mixtures with attraction between components. Physical Review A, 2007, 76, .	2.5	13
68	Solitons and edge domains in multilayers. Journal of Magnetism and Magnetic Materials, 1998, 177-181, 1303-1304.	2.3	12
69	Phase separation and vortex states in binary mixture of Bose-Einstein condensates in trapping potentials with displaced centers. JETP Letters, 2002, 75, 233-237.	1.4	12
70	Renormalization group study of the melting of a two-dimensional system of collapsing hard disks. Theoretical and Mathematical Physics(Russian Federation), 2017, 191, 842-855.	0.9	12
71	A Simple Cluster Model for the Liquidâ€“Glass Transition. Theoretical and Mathematical Physics(Russian Federation), 2004, 141, 1443-1451.	0.9	11
72	The Frenkel line and supercritical technologies. Russian Journal of Physical Chemistry B, 2014, 8, 1087-1094.	1.3	11

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73	The influence of random pinning on the melting scenario of two-dimensional soft-disk systems. Molecular Physics, 2019, 117, 2910-2919.	1.7	11
74	Melting scenarios of two-dimensional Hertzian spheres with a single triangular lattice. Soft Matter, 2020, 16, 3962-3972.	2.7	11
75	180Â° domain walls in ultra-thin magnetic films with fourfold anisotropy. Journal of Magnetism and Magnetic Materials, 1998, 182, 25-30.	2.3	10
76	Vortex state in a Bose-Fermi mixture with attraction between bosons and fermions. Physical Review A, 2006, 73, .	2.5	10
77	Singularity of the â€œswallow-tailâ€•type and the glass-glass transition in a system of collapsing hard spheres. Theoretical and Mathematical Physics(Russian Federation), 2011, 167, 645-653.	0.9	9
78	Dynamical crossover in supercritical core-softened fluids. Fluid Phase Equilibria, 2016, 417, 237-241.	2.5	9
79	Solvable model of quadrupole glass with axial interaction. Theoretical and Mathematical Physics(Russian Federation), 1986, 67, 623-627.	0.9	8
80	Orientational ordering of bonds in simple three-dimensional liquids. Theoretical and Mathematical Physics(Russian Federation), 1989, 80, 745-752.	0.9	8
81	Statistical mechanics of vortex system in a thin-film superconductor in the ring approximation. Theoretical and Mathematical Physics(Russian Federation), 1993, 96, 1062-1068.	0.9	8
82	Statistical mechanics of a vortex system in a thin superconducting film using the cyclic approximation. Theoretical and Mathematical Physics(Russian Federation), 1996, 107, 499-510.	0.9	8
83	Viscosity anomaly in core-softened liquids. Physics Letters, Section A: General, Atomic and Solid State Physics, 2013, 377, 1469-1473.	2.1	8
84	Review of a book on the anniversary of the theory of the Berezinskii â€“ Kosterlitz â€“ Thouless transition â€” a book which proved to be a precursor of the 2016 Nobel Prize in physics. Physics-Uspekhi, 2017, 60, 114-118.	2.2	8
85	Cluster model of glass transition in simple liquids. Physics Letters, Section A: General, Atomic and Solid State Physics, 2004, 329, 244-249.	2.1	7
86	Theoretical studies of condensed matter. Physics-Uspekhi, 2008, 51, .	2.2	7
87	On the 50th anniversary of the L F Vereshchagin Institute for High Pressure Physics, RAS (Scientific) Tj ETQq1 1 0.784314 rgBT /Overl Physics-Uspekhi, 2008, 51, 1055-1083.	2.2	7
88	Anomalous Melting Scenario of the Two-Dimensional Core-Softened System. Physical Review Letters, 2014, 112, 157803.	7.8	7
89	Supercritical fluid of particles with a Yukawa potential: A new approximation for the direct correlation function and the Widom line. Theoretical and Mathematical Physics(Russian Federation), 2016, 189, 1806-1817.	0.9	7
90	Quantum-to-classical crossover near quantum critical point. Scientific Reports, 2016, 5, 18600.	3.3	7

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91	The Frenkel line and isotope effect. Physica A: Statistical Mechanics and Its Applications, 2016, 444, 890-896.	2.6	7
92	Domain structures in ferromagnetic ultrathin films with in-plane magnetization. Physical Review B, 1999, 60, 10271-10279.	3.2	6
93	Supercritical Anomalies and the Widom Line for the Isostructural Phase Transition in Solids. Theoretical and Mathematical Physics(Russian Federation), 2018, 194, 148-156.	0.9	6
94	Experimental study of water thermodynamics up to 1.2 GPa and 473 K. Journal of Chemical Physics, 2020, 152, 154501.	3.0	6
95	Structural transition in two-dimensional Hertzian spheres in the presence of random pinning. Physical Review E, 2021, 103, 062612.	2.1	6
96	Magnetic solitons in a compressible Heisenberg chain. Journal of Physics C: Solid State Physics, 1983, 16, L1125-L1128.	1.5	5
97	Hexatic phase: microscopic approach to the Frank constant. Physics Letters, Section A: General, Atomic and Solid State Physics, 1991, 158, 321-324.	2.1	5
98	Hexatic phase in thin-film superconductors. Physica C: Superconductivity and Its Applications, 1993, 205, 55-62.	1.2	5
99	New exactly solvable model: â€œsphericalâ€•3-state Potts model. Physics Letters, Section A: General, Atomic and Solid State Physics, 2006, 353, 226-229.	2.1	5
100	The role of attraction in the phase diagrams and melting scenarios of generalized 2D Lennard-Jones systems. Journal of Chemical Physics, 2022, 156, 114703.	3.0	5
101	On the liquid phase instability criterion. Physica A: Statistical Mechanics and Its Applications, 1981, 109, 357-363.	2.6	4
102	Amplification of trap centres position difference in mixtures of Bose-Einstein condensates. Journal of Physics Condensed Matter, 2002, 14, L77-L82.	1.8	4
103	High pressure studies of the phase transition in the ferroelectric Sn2P2S6. Solid State Communications, 2016, 236, 23-26.	1.9	4
104	Statistical mechanics of a vortex system in a thin superconducting film in the cyclic approximation. II. Finite thickness and vortex bending. Theoretical and Mathematical Physics(Russian Federation), 1995, 104, 1035-1042.	0.9	3
105	The behaviour of water and sodium chloride solution confined into asbestos nanotube. Molecular Physics, 2016, 114, 2279-2288.	1.7	3
106	Excitation spectra of liquid iron up to superhigh temperatures. Journal of Physics Condensed Matter, 2017, 29, 345401.	1.8	3
107	Possible phase transition in liquid caesium at ambient pressure. Physics and Chemistry of Liquids, 2019, 57, 650-657.	1.2	3
108	Interplay between freezing and density anomaly in a confined core-softened fluid. Molecular Physics, 2020, 118, e1718792.	1.7	3

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109	Collapse mechanism of the condensate wavefunction in the Bose-Fermi mixture with attraction between the components. JETP Letters, 2006, 84, 294-299.	1.4	2
110	Bose condensate of ultracold atoms in traps: Bose-bose and bose-fermi mixtures. Theoretical and Mathematical Physics(Russian Federation), 2008, 154, 123-136.	0.9	2
111	On the critical temperature in a Boson-Fermion mixture with attraction between the components. JETP Letters, 2008, 87, 376-380.	1.4	2
112	Effective Hamiltonian study of excitations in a bosonâ€“fermion mixture with attraction between components. Journal of Physics B: Atomic, Molecular and Optical Physics, 2010, 43, 225301.	1.5	2
113	A toy MCT model for multiple glass transitions: Double swallow tail singularity. Physics Letters, Section A: General, Atomic and Solid State Physics, 2014, 378, 3567-3571.	2.1	2
114	The influence of long-range interaction on the structure of a two-dimensional multi scale potential system. Journal of Physics Condensed Matter, 2019, 31, 315103.	1.8	2
115	The Berezinskiiâ€“Kosterlitzâ€“Thouless Transition and Melting Scenarios of Two-Dimensional Systems. Physics of Particles and Nuclei, 2020, 51, 786-790.	0.7	2
116	Simple formula for the switching field of ultrathin small magnetic structures. Journal of Applied Physics, 1999, 85, 1978-1980.	2.5	1
117	Possible Scenarios of a Phase Transition from Isotropic Liquid to a Hexatic Phase in the Theory of Melting in Two-Dimensional Systems. Theoretical and Mathematical Physics(Russian Federation), 2019, 200, 1053-1062.	0.9	1
118	Structural instability in one-dimensional orthohydrogen. Physics Letters, Section A: General, Atomic and Solid State Physics, 1979, 72, 373-375.	2.1	0
119	Orientational ordering in molecular hydrogen. IV. Phase transition of the second kind in the hexagonal lattice. Theoretical and Mathematical Physics(Russian Federation), 1979, 40, 738-742.	0.9	0
120	Strongly correlated electron systems and quantum critical phenomena (11 April 2003, Troitsk,) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 30	2.2	0
121	Strongly correlated electron systems and quantum critical phenomena. Physics-Uspekhi, 2005, 48, 1071-1084.	2.2	0
122	Sergei Mikhailovich Stishov (on his 70th birthday). Physics-Uspekhi, 2007, 50, 1287-1288.	2.2	0
123	Degenerate approach to the mean field Bose-Hubbard Hamiltonian. European Physical Journal B, 2016, 89, 1.	1.5	0
124	Transitions in Simple Liquids: Correlation Function Approach. , 2002, , 527-543.		0