Alexander S Abyzov

List of Publications by Year
in descending order

77 papers	1,729 citations	218677 26 h-index	315739 38 g-index
79 all docs	79 docs citations	79 times ranked	995 citing authors

#	Article	IF	Citations
1	Crystallization of glass-forming liquids: Maxima of nucleation, growth, and overall crystallization rates. Journal of Non-Crystalline Solids, 2015, 429, 24-32.	3.1	91
2	Experimental Test of Tammannâ€™s Nuclei Development Approach in Crystallization of Macromolecules. Crystal Growth and Design, 2015, 15, 786-798.	3.0	88
3	Dynamic processes in a silicate liquid from above melting to below the glass transition. Journal of Chemical Physics, 2011, 135, 194703.	3.0	86
4	Nucleation versus spinodal decomposition in phase formation processes in multicomponent solutions. Journal of Chemical Physics, 2004, 121, 6900-6917.	3.0	74
5	Crystal nucleation in glass-forming liquids: Variation of the size of the â€œstructural unitsâ€• with temperature. Journal of Non-Crystalline Solids, 2016, 447, 35-44.	3.1	60
6	The effect of elastic stresses on the thermodynamic barrier for crystal nucleation. Journal of Non-Crystalline Solids, 2016, 432, 325-333.	3.1	57
7	Nucleation versus spinodal decomposition in confined binary solutions. Journal of Chemical Physics, 2007, 127, 114504.	3.0	53
8	Cooling rate dependence of undercooling of pure Sn single drop by fast scanning calorimetry. Applied Physics A: Materials Science and Processing, 2011, 104, 189-196.	2.3	52
9	Crystallization in glass-forming liquids: Effects of decoupling of diffusion and viscosity on crystal growth. Journal of Non-Crystalline Solids, 2015, 429, 45-53.	3.1	51
10	Size and rate dependence of crystal nucleation in single tin drops by fast scanning calorimetry. Journal of Chemical Physics, 2013, 138, 054501.	3.0	47
11	How Do Crystals Form and Grow in Glassâ€Forming Liquids: Ostwald's Rule of Stages and Beyond. International Journal of Applied Glass Science, 2010, 1, 16-26.	2.0	46
12	The effect of heterogeneous structure of glass-forming liquids on crystal nucleation. Journal of Non-Crystalline Solids, 2017, 462, 32-40.	3.1	41
13	Numerical evaluation of the dislocation loop bias. Journal of Nuclear Materials, 2005, 336, 11-21.	2.7	40
14	Crystallization of glass-forming liquids: Thermodynamic driving force. Journal of Non-Crystalline Solids, 2016, 449, 41-49.	3.1	36
15	Thermodynamic analysis of nucleation in confined space: Generalized Gibbs approach. Journal of Chemical Physics, 2011, 134, 054511.	3.0	35
16	Beating Homogeneous Nucleation and Tuning Atomic Ordering in Glass-Forming Metals by Nanocalorimetry. Nano Letters, 2017, 17, 7751-7760.	9.1	34
17	Effect of structural relaxation on crystal nucleation in glasses. Acta Materialia, 2021, 203, 116472.	7.9	33
18	Crystal nucleation and growth kinetics of NaF in photo-thermo-refractive glass. Journal of Non-Crystalline Solids, 2013, 378, 115-120.	3.1	32

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19	Crystallization of Glass: What We Know, What We Need to Know. International Journal of Applied Glass Science, 2016, 7, 253-261.	2.0	31
20	Growth and dissolution of crystal nuclei in poly(l-lactic acid) (PLLA) in Tammann's development method. Polymer, 2020, 196, 122453.	3.8	31
21	Crystallization in glass-forming liquids: Effects of fragility and glass transition temperature. Journal of Non-Crystalline Solids, 2015, 428, 68-74.	3.1	29
22	Crystallization of glass-forming liquids: Specific surface energy. Journal of Chemical Physics, 2016, 145, .	3.0	29
23	Effects of Glass Transition and Structural Relaxation on Crystal Nucleation: Theoretical Description and Model Analysis. Entropy, 2020, 22, 1098.	2.2	28
24	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
25	Thermodynamic Aspects of Pressureâ€Induced Crystallization: Kauzmann Pressure. International Journal of Applied Glass Science, 2016, 7, 474-485.	2.0	26
26	Kauzmann paradox and the crystallization of glass-forming melts. Journal of Non-Crystalline Solids, 2018, 501, 21-35.	3.1	26
27	Generalized Gibbsâ€™ approach in heterogeneous nucleation. Journal of Chemical Physics, 2013, 138, 164504.	3.0	25
28	Crystallization of glass-forming melts: New answers to old questions. Journal of Non-Crystalline Solids, 2018, 501, 11-20.	3.1	25
29	Entropy and the Tolman Parameter in Nucleation Theory. Entropy, 2019, 21, 670.	2.2	25
30	AlSb single-crystal grown by HPBM. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 458, 448-454.	1.6	23
31	Stress induced pore formation and phase selection in a crystallizing stretched glass. Journal of Non-Crystalline Solids, 2010, 356, 1679-1688.	3.1	23
32	Influence of detector surface processing on detector performance. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2001, 458, 248-253.	1.6	21
33	Curvature dependence of the surface tension and crystal nucleation in liquids. International Journal of Applied Glass Science, 2019, 10, 57-68.	2.0	21
34	Effect of structural relaxation on crystal nucleation in a sodaâ€limeâ€silica glass. Journal of the American Ceramic Society, 2021, 104, 3212-3223.	3.8	21
35	Evolution of cluster size-distributions in nucleation-growth and spinodal decomposition processes in a regular solution. Journal of Non-Crystalline Solids, 2010, 356, 2915-2922.	3.1	20
36	Predicting homogeneous nucleation rates in silicate glass-formers. Journal of Non-Crystalline Solids, 2018, 500, 231-234.	3.1	20

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37	Crystallization of Supercooled Liquids: Self-Consistency Correction of the Steady-State Nucleation Rate. Entropy, 2020, 22, 558.	2.2	19
38	How Do Crystals Nucleate and Grow: Ostwaldâ€™s Rule of Stages and Beyond. Hot Topics in Thermal Analysis and Calorimetry, 2017, , 195-211.	0.5	18
39	Off-stoichiometry effects on crystal nucleation and growth kinetics in soda-lime-silicate glasses. The combeite (Na2Oâ€¢2CaOâ€¢3SiO2) â€“ devitrite (Na2Oâ€¢3CaOâ€¢6SiO2) joint. Acta Materialia, 2020, 196, 191-199.	7.9	18
40	Generalized Gibbsâ€™ approach to the thermodynamics of heterogeneous systems and the kinetics of first-order phase transitions. Journal of Engineering Thermophysics, 2007, 16, 119-129.	1.4	17
41	Temperature of critical clusters in nucleation theory: Generalized Gibbs' approach. Journal of Chemical Physics, 2013, 139, 034702.	3.0	17
42	Nonstoichiometric crystallization of lithium metasilicateâ€“calcium metasilicate glasses. Part 1 â€” Crystal nucleation and growth rates. Journal of Non-Crystalline Solids, 2013, 362, 56-64.	3.1	17
43	Heterogeneous nucleation on rough surfaces: Generalized Gibbsâ€™ approach. Journal of Chemical Physics, 2017, 147, 214705.	3.0	16
44	Theory of pore formation in glass under tensile stress: Generalized Gibbs approach. Journal of Non-Crystalline Solids, 2011, 357, 3474-3479.	3.1	15
45	Rapid solidification behavior of nano-sized Sn droplets embedded in the Al matrix by nanocalorimetry. Materials Research Express, 2014, 1, 045012.	1.6	15
46	Effect of non-stoichiometry on the crystal nucleation and growth in oxide glasses. Acta Materialia, 2019, 180, 317-328.	7.9	15
47	Non-stoichiometric crystallization of lithium metasilicateâ€“calcium metasilicate glasses. Part 2 â€” Effect of the residual liquid. Journal of Non-Crystalline Solids, 2013, 379, 131-144.	3.1	14
48	Comments on the thermodynamic analysis of nucleation in confined space. Journal of Non-Crystalline Solids, 2014, 384, 2-7.	3.1	14
49	Relaxation effect on crystal nucleation in a glass unveiled by experimental, numerical, and analytical approaches. Acta Materialia, 2022, 223, 117458.	7.9	14
50	Distinct crystal growth on the surface and in the interior of Na2OÂ·2CaOÂ·3SiO2 glass. Journal of Non-Crystalline Solids, 2018, 498, 42-48.	3.1	12
51	Pressureâ€induced crystallization of liquids: Maxima of nucleation, growth, and overall crystallization rates. International Journal of Applied Glass Science, 2018, 9, 198-207.	2.0	11
52	The Nucleation of Gas-Filled Bubbles in Low-Viscosity Liquids. Colloid Journal, 2004, 66, 575-583.	1.3	10
53	Heterogeneous nucleation in solutions: Generalized Gibbsâ€™ approach. Journal of Chemical Physics, 2014, 140, 244706.	3.0	10
54	Kinetics of segregation processes in solutions: Saddle point versus ridge crossing of the thermodynamic potential barrier. Journal of Non-Crystalline Solids, 2014, 384, 8-14.	3.1	10

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55	Heterogeneous Nucleation in Solutions on Rough Solid Surfaces: Generalized Gibbs Approach. Entropy, 2019, 21, 782.	2.2	8
56	PRESSURE DEPENDENCE OF VISCOSITY: A NEW GENERAL RELATION. Interfacial Phenomena and Heat Transfer, 2017, 5, 107-112.	0.8	7
57	On the theoretical description of nucleation in confined space. AIP Advances, 2011, 1, .	1.3	6
58	Elastic stresses in crystallization processes in finite domains. Journal of Non-Crystalline Solids, 2010, 356, 1670-1678.	3.1	4
59	Phase competition in late stages of diffusive decomposition. Physics of the Solid State, 1998, 40, 601-603.	0.6	3
60	A New Method of Determination of the Coefficients of Emission in Nucleation Theory. , 2005, , 39-73.		3
61	8. Stress-induced Pore Formation and Phase Selection in a Crystallizing Stretched Glass. , 2014, , 441-480.		3
62	The cahnâ€"hilliard equation with â€œfrozen-inâ€•fluctuations of mobility. Phase Transitions, 2000, 70, 289-311.	1.3	2
63	Kinetics of the phase separation of a low-viscosity liquid supersaturated with gas at the intermediate and later stages. Colloid Journal, 2005, 67, 85-96.	1.3	2
64	Nucleation and growth of sodium colloids in NaCl under irradiation: theory and experiment. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 438-443.	0.8	2
65	PHYSICAL INTERPRETATION OF ICE CONTACT ANGLES, FITTED TO EXPERIMENTAL DATA ON IMMERSION FREEZING OF KAOLINITE PARTICLES. Interfacial Phenomena and Heat Transfer, 2018, 6, 37-74.	0.8	2
66	Growth and shrinkage of precipitates under irradiation. Radiation Effects and Defects in Solids, 1994, 129, 257-264.	1.2	1
67	Characterization of CdTe, CdxZn1â^'xTe and GaAs detectors. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 610, 298-301.	1.6	1
68	Homogeneous bubble nucleation limit of mercury under the normal working conditions of the planned European spallation neutron source. European Physical Journal B, 2011, 79, 107-113.	1.5	1
69	Stabilization of Nano-Dimensional Structures in the Single-Crystal Silicon Volume. Telecommunications and Radio Engineering (English Translation of Elektrosvyaz and Radiotekhnika), 2009, 68, 627-648.	0.4	1
70	Annealing effects on the glass transition: Experiment and theory. Journal of Non-Crystalline Solids, 2022, 590, 121669.	3.1	1
71	Diffusional evolution of gas-filled pores during the sintering of a ceramic. Powder Metallurgy and Metal Ceramics, 1996, 34, 534-538.	0.8	0
72	Allowance for gas solubility and the finite strength of vacancy sinks in the sintering of a ceramic. Powder Metallurgy and Metal Ceramics, 1998, 37, 258-264.	0.8	0

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73	Spinodal decomposition in systems with initially quenched fluctuations of the order parameter. Physica A: Statistical Mechanics and Its Applications, 1999, 272, 459-480.	2.6	0
74	Nucleation Versus Spinodal Decomposition in Confined Binary Solutions. , 2007, , 278-281.		0
75	Comment on â€œMinimum free-energy pathway of nucleationâ€•[J. Chem. Phys. 135, 134508 (2011)]. Journal of Chemical Physics, 2012, 136, 107101.	3.0	0
76	<title>Adaptive photodetectors for vibration monitoring</title>. , 2007, , .		0
77	NANO-DIMENSIONAL CONDUCTING FILAMENTS FOR SILICON PHOTO CELLS. Telecommunications and Radio Engineering (English Translation of Elektrosvyaz and Radiotekhnika), 2012, 71, 349-364.	0.4	0