Dmitri V. Alexandrov

List of Publications by Year
in descending order

88	1,617	279798	330143
papers	citations	23 h-index	37 g-index

90	90	90	172
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Dendritic growth velocities in an undercooled melt of pure nickel under static magnetic fields: A test of theory with convection. Acta Materialia, 2016, 103, 184-191.	7.9	78
2	Selection criterion of stable dendritic growth at arbitrary PÃ©clet numbers with convection. Physical Review E, 2013, 87, 062403.	2.1	73
3	Dynamics of particulate assemblages in metastable liquids: a test of theory with nucleation and growth kinetics. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190245.	3.4	68
4	A complete analytical solution of the Fokkerâ€“Planck and balance equations for nucleation and growth of crystals. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20170327.	3.4	66
5	The boundary integral theory for slow and rapid curved solid/liquid interfaces propagating into binary systems. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20170218.	3.4	65
6	On the theory of crystal growth in metastable systems with biomedical applications: protein and insulin crystallization. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20180214.	3.4	65
7	Thermo-solutal and kinetic regimes of an anisotropic dendrite growing under forced convective flow. Physical Chemistry Chemical Physics, 2015, 17, 19149-19161.	2.8	64
8	Thermo-solutal and kinetic modes of stable dendritic growth with different symmetries of crystalline anisotropy in the presence of convection. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20170215.	3.4	60
9	Analytical solutions of mushy layer equations describing directional solidification in the presence of nucleation. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20170217.	3.4	60
10	Phase transformations in metastable liquids combined with polymerization. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20180215.	3.4	60
11	Effects of nonlinear growth rates of spherical crystals and their withdrawal rate from a crystallizer on the particle-size distribution function. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20180210.	3.4	54
12	The shape of dendritic tips. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190243.	3.4	53
13	Nonlinear dynamics of mushy layers induced by external stochastic fluctuations. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20170216.	3.4	52
14	A review on the theory of stable dendritic growth. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200325.	3.4	48
15	On the theory of the unsteady-state growth of spherical crystals in metastable liquids. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20180209.	3.4	47
16	Heterogeneous materials: metastable and non-ergodic internal structures. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20180353.	3.4	44
17	The effect of density changes on crystallization with a mushy layer. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190248.	3.4	43
18	Modeling of convection, temperature distribution and dendritic growth in glass-fluxed nickel melts. Journal of Crystal Growth, 2017, 471, 66-72.	1.5	42

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19	Nonlinear dynamics of polydisperse assemblages of particles evolving in metastable media. European Physical Journal: Special Topics, 2020, 229, 383-404.	2.6	41
20	From nucleation and coarsening to coalescence in metastable liquids. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190247.	3.4	37
21	Patterns in soft and biological matters. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20200002.	3.4	37
22	Diffusionless (chemically partitionless) crystallization and subsequent decomposition of supersaturated solid solutions in Snâ€“Bi eutectic alloy. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20180204.	3.4	32
23	Sea Ice Dynamics Induced by External Stochastic Fluctuations. Pure and Applied Geophysics, 2013, 170, 2273-2282.	1.9	28
24	Ostwald ripening in the presence of simultaneous occurrence of various mass transfer mechanisms: an extension of the Lifshitzâ€“Slyozov theory. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200308.	3.4	24
25	Nucleation and growth dynamics of ellipsoidal crystals in metastable liquids. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200306.	3.4	24
26	On the theory of evolution of particulate systems. IOP Conference Series: Materials Science and Engineering, 2017, 192, 012001.	0.6	22
27	On the theory of phase transformation process in a binary supercooled melt. European Physical Journal: Special Topics, 2020, 229, 375-382.	2.6	19
28	Stochastically driven transitions between climate attractors. Tellus, Series A: Dynamic Meteorology and Oceanography, 2014, 66, 23454.	1.7	17
29	Theoretical modeling of crystalline symmetry order with dendritic morphology. European Physical Journal: Special Topics, 2020, 229, 275-286.	2.6	15
30	Solidification from a Cooled Boundary with a Mushy Layer Under Conditions of Nonturbulent and Turbulent Heat and Mass Transfer in the Ocean. International Journal of Fluid Mechanics Research, 2010, 37, 1-14.	0.4	15
31	Effects of external heat/mass sources and withdrawal rates of crystals from a metastable liquid on the evolution of particulate assemblages. European Physical Journal: Special Topics, 2019, 228, 25-34.	2.6	14
32	How the intermediate stage of a phase transition process transforms to the concluding stage of Ostwald ripening. Journal of Crystal Growth, 2020, 532, 125456.	1.5	14
33	Dissolution of polydisperse ensembles of crystals in channels with a forced flow. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190246.	3.4	14
34	Towards the theory of phase transformations in metastable liquids. Analytical solutions and stability analysis. European Physical Journal: Special Topics, 2020, 229, 365-373.	2.6	14
35	The influence of non-stationarity and interphase curvature on the growth dynamics of spherical crystals in a metastable liquid. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200307.	3.4	14
36	Dynamical law of the phase interface motion in the presence of crystals nucleation. Scientific Reports, 2022, 12, .	3.3	14

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37	How the shift in the phase transition temperature influences the evolution of crystals during the intermediate stage of phase transformations. European Physical Journal: Special Topics, 2020, 229, 2923-2935.	2.6	12
38	Growth of spherical and ellipsoidal crystals in a metastable liquid. European Physical Journal: Special Topics, 2022, 231, 1089-1100.	2.6	11
39	Kinetics of the intermediate stage of phase transition with elliptical crystals. European Physical Journal: Special Topics, 2020, 229, 2937-2949.	2.6	10
40	Emergence of a Mushy Region in Processes of Binary Melt Solidification. International Journal of Fluid Mechanics Research, 1999, 26, 248-264.	0.4	10
41	Noise-induced transitions and shifts in a climateâ€“vegetation feedback model. Royal Society Open Science, 2018, 5, 171531.	2.4	9
42	Mathematical modeling of the growth of ellipsoidal crystals in metastable melts and solutions. Mathematical Methods in the Applied Sciences, 2021, 44, 12252-12259.	2.3	9
43	Analysis of noise-induced eruptions in a geyser model. European Physical Journal B, 2016, 89, 1.	1.5	8
44	Transport phenomena in complex systems (part 1). Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200301.	3.4	8
45	Evaporation kinetics of a polydisperse ensemble of drops. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200309.	3.4	6
46	A complete analytical solution of unsteady coagulation equations and transition between the intermediate and concluding stages of a phase transformation. European Physical Journal: Special Topics, 2022, 231, 1115-1121.	2.6	6
47	Nucleation and Growth of an Ensemble of Crystals during the Intermediate Stage of a Phase Transition in Metastable Liquids. Crystals, 2022, 12, 895.	2.2	6
48	A Nonlinear Instability Analysis of Crystallization Processes with a Two-Phase Zone. Journal of Metastable and Nanocrystalline Materials, 2004, 20-21, 468-475.	0.1	5
49	How a small noise generates large-amplitude oscillations of volcanic plug and provides high seismicity. European Physical Journal B, 2015, 88, 1.	1.5	5
50	Phase field analysis of the growth of fast and slow crystallites. European Physical Journal: Special Topics, 2020, 229, 433-437.	2.6	5
51	Transient dynamics of solute bands in dilute binary alloys. European Physical Journal: Special Topics, 2020, 229, 253-263.	2.6	5
52	The bulk crystal growth in binary supercooled melts with allowance for heat removal. European Physical Journal: Special Topics, 2022, 231, 1101-1106.	2.6	5
53	A Stable Mode of Dendritic Growth in Cases of Conductive and Convective Heat and Mass Transfer. Crystals, 2022, 12, 965.	2.2	5
54	Influence of initial seed distribution on the pattern formation of the phase field crystals. AIP Conference Proceedings, 2017, , .	0.4	4

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55	Formation of the microstructure of rapidly solidified hypoeutectic Al-Si alloy. European Physical Journal: Special Topics, 2020, 229, 417-425.	2.6	4
56	Approximate analytical solution of the integroâ€differential model of bulk crystallization in a metastable liquid with mass supply (heat dissipation) and crystal withdrawal mechanism. Mathematical Methods in the Applied Sciences, 2022, 45, 8170-8178.	2.3	4
57	An Influence of a Fractal-Like Mushy Region on Solidification Process. International Journal of Fluid Mechanics Research, 1999, 26, 224-231.	0.4	3
58	Absolute Morphological Stability of the Self-Similar Solidification with a Planar Front. Journal of Metastable and Nanocrystalline Materials, 2004, 20-21, 476-481.	0.1	3
59	Noise-induced generation of saw-tooth type transitions between climate attractors and stochastic excitability of paleoclimate. European Physical Journal B, 2015, 88, 1.	1.5	3
60	Unsteady-state particle-size distributions at the coagulation stage of phase transformations. European Physical Journal: Special Topics, 2019, 228, 161-167.	2.6	3
61	Variability in the noise-induced modes of climate dynamics. Physics Letters, Section A: General, Atomic and Solid State Physics, 2020, 384, 126411.	2.1	3
62	Dissolution kinetics of particulate assemblages in channels. European Physical Journal: Special Topics, 2020, 229, 3021-3032.	2.6	3
63	Analytical solutions to the boundary integral equation: A case of angled dendrites and paraboloids. Mathematical Methods in the Applied Sciences, 2020, 44, 12058.	2.3	2
64	Mathematical modeling of vaporization process for a polydisperse ensemble of liquid drops. Mathematical Methods in the Applied Sciences, 2021, 44, 12101-12107.	2.3	2
65	Modeling and simulation of heat/mass transport, nucleation and growth kinetics in phase transformations. European Physical Journal: Special Topics, 2020, 229, 141-143.	2.6	2
66	Effect of tiny amount of impurity and convective transport on dendrite growth kinetics. European Physical Journal: Special Topics, 2020, 229, 239-251.	2.6	2
67	Analytical solution of integroâ€differential equations describing the process of intense boiling of a superheated liquid. Mathematical Methods in the Applied Sciences, 0, , .	2.3	2
68	On the theory of directional crystallization with a two-phase region with vigorous convection. European Physical Journal: Special Topics, 2020, 229, 2951-2959.	2.6	2
69	Transport phenomena in complex systems (part 2). Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, 20210366.	3.4	2
70	Approximate analytical solutions of the kinetic and balance equations for intense boiling. European Physical Journal: Special Topics, 0, , 1.	2.6	2
71	Exact analytical solutions of a steady-state mushy layer model containing heat exchange with the environment. European Physical Journal: Special Topics, 0, , 1.	2.6	2
72	Desupersaturation dynamics in metastable solutions with ellipsoidal crystals. European Physical Journal: Special Topics, 2022, 231, 1107-1113.	2.6	2

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73	Mathematical modeling of dendrite growth in an Alâ€“Ge alloy with convective flow. Mathematical Methods in the Applied Sciences, 2022, 45, 8069-8081.	2.3	2
74	Mathematical modeling of the combustion process for a polydispersed fuel. Mathematical Methods in the Applied Sciences, 2020, 44, 12040.	2.3	1
75	Methodical Notes on the Strong Solution of Some Well-Known Problems of Hydrodynamics. International Journal of Fluid Mechanics Research, 1999, 26, 232-247.	0.4	1
76	A complete analytical solution to the integroâ€differential model describing the nucleation and evolution of ellipsoidal particles. Mathematical Methods in the Applied Sciences, 0, , .	2.3	1
77	Analytical description of directional crystallization with two-phase regions. AIP Conference Proceedings, 2018, , .	0.4	0
78	Nonstationary growth of spherical particles in a supercooled melt. AIP Conference Proceedings, 2018, , .	0.4	0
79	Nonlinear dynamics of unsteady-state crystallization of a binary system. AIP Conference Proceedings, 2018, , .	0.4	0
80	How the convective heat transport at the solid/liquid phase interface influences the stable mode of dendritic growth. AIP Conference Proceedings, 2018, , .	0.4	0
81	Analytical solution to the equations of a two-phase layer with allowance for the convective heat and mass transfer in a binary liquid. AIP Conference Proceedings, 2019, , .	0.4	0
82	A complete analytical solution to the integro-differential model for nucleation and evolution of crystals in a metastable system. AIP Conference Proceedings, 2019, , .	0.4	0
83	Towards the theory of phase transformations in metastable melts: The phase transition temperature shift. AIP Conference Proceedings, 2020, , .	0.4	0
84	Towards a theory of directional solidification in the presence of a two-phase zone with intense convection in a liquid layer. AIP Conference Proceedings, 2020, , .	0.4	0
85	On the theory of directional solidification of a binary melt with convection in the presence of a phase transition region. AIP Conference Proceedings, 2020, , .	0.4	0
86	Mathematical modeling of the growth of an ellipsoidal particle in a supersaturated solution. AIP Conference Proceedings, 2021, , .	0.4	0
87	Concerning the Theory of the Incipience of the Two-Phase Mushy Zone in Solidification of Binary Melts. Heat Transfer Research, 2003, 34, 8.	1.6	0
88	Analytical solutions describing the oblique flow of a viscous incompressible fluid around a dendritic crystal. Mathematical Methods in the Applied Sciences, 0, , .	2.3	0