Efim A Brener

List of Publications by Year
in descending order

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80 papers	2,297 citations	257101 24 h-index	223531 46 g-index
82 all docs	82 docs citations	82 times ranked	1207 citing authors

#	Article	IF	Citations
1	Pattern selection in two-dimensional dendritic growth. Advances in Physics, 1991, 40, 53-97.	35.9	308
2	Theory of pattern selection in three-dimensional nonaxisymmetric dendritic growth. Physical Review Letters, 1993, 71, 589-592.	2.9	143
3	Phase field modeling of crack propagation. Philosophical Magazine, 2011, 91, 75-95.	0.7	139
4	Needle-crystal solution in three-dimensional dendritic growth. Physical Review Letters, 1993, 71, 3653-3656.	2.9	132
5	Kinetic Phase Diagram and Scaling Relations for Stationary Diffusional Growth. Europhysics Letters, 1992, 17, 535-540.	0.7	121
6	Noise-induced sidebranching in the three-dimensional nonaxisymmetric dendritic growth. Physical Review E, 1995, 51, 351-359.	0.8	110
7	Phase Field Modeling of Fast Crack Propagation. Physical Review Letters, 2006, 96, 015502.	2.9	87
8	On the velocityâ€strengthening behavior of dry friction. Journal of Geophysical Research: Solid Earth, 2014, 119, 1738-1748.	1.4	75
9	Slow Cracklike Dynamics at the Onset of Frictional Sliding. Physical Review Letters, 2011, 107, 235501.	2.9	56
10	Effects of surface energy and kinetics on the growth of needle-like dendrites. Journal of Crystal Growth, 1990, 99, 165-170.	0.7	53
11	Mean-field theory for diffusion-limited aggregation in low dimensions. Physical Review Letters, 1991, 66, 1978-1981.	2.9	53
12	Slow rupture of frictional interfaces. Geophysical Research Letters, 2012, 39, .	1.5	52
13	Crystal growth in a channel: Numerical study of the one-sided model. Physical Review E, 1993, 47, 1151-1155.	0.8	44
14	Parity-Broken Dendrites. Physical Review Letters, 1995, 75, 561-564.	2.9	43
15	Instabilities at frictional interfaces: Creep patches, nucleation, and rupture fronts. Physical Review E, 2013, 88, 060403.	0.8	40
16	Nonlinear theory of dislocations in smectic crystals: An exact solution. Physical Review E, 1999, 59, R4752-R4753.	0.8	34
17	Kinetic cross coupling between nonconserved and conserved fields in phase field models. Physical Review E, 2012, 86, 060601.	0.8	34
18	Kinetics of isothermal phase transformations above and below the peritectic temperature: Phase-field simulations. Acta Materialia, 2010, 58, 1750-1760.	3.8	32

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19	The emergence of crack-like behavior of frictional rupture: Edge singularity and energy balance. Earth and Planetary Science Letters, 2020, 531, 115978.	1.8	31
20	Elastic Effects on the Kinetics of a Phase Transition. Physical Review Letters, 1999, 82, 1506-1509.	2.9	30
21	Fast crack propagation by surface diffusion. Physical Review E, 2003, 67, 016112.	0.8	26
22	Velocity-strengthening friction significantly affects interfacial dynamics, strength and dissipation. Scientific Reports, 2015, 5, 7841.	1.6	26
23	Selection of the Viscous Finger in the 90Â° Geometry. Europhysics Letters, 1990, 13, 161-166.	0.7	25
24	Unstable Slip Pulses and Earthquake Nucleation as a Nonequilibrium First-Order Phase Transition. Physical Review Letters, 2018, 121, 234302.	2.9	25
25	Advanced Fluid Information. Growth-Morphologies in Solidification and Hydrodynamics.. JSME International Journal Series B, 2002, 45, 129-132.	0.3	22
26	Scaling Theory of Two-Phase Dendritic Growth in Undercooled Ternary Melts. Physical Review Letters, 2014, 112, 105502.	2.9	20
27	Dynamic instabilities of frictional sliding at a bimaterial interface. Journal of the Mechanics and Physics of Solids, 2016, 89, 149-173.	2.3	20
28	Influence of strain on the kinetics of phase transitions in solids. Physical Review E, 2007, 75, 041604.	0.8	19
29	Theory of discontinuous precipitation: importance of the elastic strain. Acta Materialia, 2003, 51, 797-803.	3.8	18
30	Velocity-Selection Problem for Combined Motion of Melting and Solidification Fronts. Physical Review Letters, 2005, 94, 184501.	2.9	18
31	Achieving realistic interface kinetics in phase-field models with a diffusional contrast. Physical Review E, 2014, 89, 060402.	0.8	18
32	Nonsymmetric Saffmanâ€“Taylor fingers. Physics of Fluids A, Fluid Dynamics, 1991, 3, 529-534.	1.6	17
33	Interface kinetics in phase-field models: Isothermal transformations in binary alloys and step dynamics in molecular-beam epitaxy. Physical Review E, 2013, 88, 022406.	0.8	17
34	Fluctuation effects on dendritic growth morphology. Physica A: Statistical Mechanics and Its Applications, 1994, 204, 96-110.	1.2	16
35	Laplacian and diffusional growth: A unified theoretical description for symmetrical and parity-broken patterns. Physica D: Nonlinear Phenomena, 1996, 98, 128-138.	1.3	16
36	Growth of non-reflection-symmetric dendrites. Physical Review A, 1991, 43, 883-887.	1.0	15

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37	Surface Instabilities in Cracks. Physical Review Letters, 1998, 81, 5141-5144.	2.9	15
38	Theory of diffusional growth in cellular precipitation. Acta Materialia, 1999, 47, 3759-3765.	3.8	15
39	Structure formation in diffusional growth and dewetting. Solid State Ionics, 2000, 131, 23-33.	1.3	15
40	Coarsening of Cracks in a Uniaxially Strained Solid. Physical Review Letters, 2001, 86, 1291-1294.	2.9	15
41	Coarsening Kinetics with Elastic Effects. Physical Review Letters, 2000, 84, 4914-4917.	2.9	14
42	Velocity Selection Problem in the Presence of the Triple Junction. Physical Review Letters, 2007, 99, 105701.	2.9	14
43	Emergence of Cracklike Behavior of Frictional Rupture: The Origin of Stress Drops. Physical Review X, 2019, 9, .	2.8	14
44	Melting of alloys along the inter-phase boundaries in eutectic and peritectic systems. Acta Materialia, 2007, 55, 2785-2789.	3.8	13
45	Frictional Sliding without Geometrical Reflection Symmetry. Physical Review X, 2016, 6, .	2.8	13
46	Critical Nucleation Length for Accelerating Frictional Slip. Geophysical Research Letters, 2017, 44, 11,390.	1.5	13
47	Isothermal solidification in peritectic systems. Acta Materialia, 2014, 75, 212-218.	3.8	12
48	Phase field modeling of rapid crystallization in the phase-change material AIST. Journal of Applied Physics, 2017, 122, .	1.1	12
49	Modeling of dendritic growth using a quantitative nondiagonal phase field model. Physical Review Materials, 2020, 4, .	0.9	12
50	Viscoelastic fracture of biological composites. Journal of the Mechanics and Physics of Solids, 2011, 59, 2279-2293.	2.3	11
51	Onsager approach to the one-dimensional solidification problem and its relation to the phase-field description. Physical Review E, 2012, 85, 031601.	0.8	11
52	Spatiotemporal Dynamics of Frictional Systems: The Interplay of Interfacial Friction and Bulk Elasticity. Lubricants, 2019, 7, 91.	1.2	11
53	Unconventional singularities and energy balance in frictional rupture. Nature Communications, 2021, 12, 2585.	5.8	11
54	Effect of gravity on stable Saffman-Taylor fingers. Physical Review E, 1993, 48, 1066-1072.	0.8	10

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55	Crack Growth by Surface Diffusion in Viscoelastic Media. Physical Review Letters, 2008, 101, 205501.	2.9	10
56	Elastic and plastic effects on solid-state transformations: A phase field study. International Journal of Materials Research, 2010, 101, 462-466.	0.1	10
57	Velocity-driven frictional sliding: Coarsening and steady-state pulses. Journal of the Mechanics and Physics of Solids, 2022, 158, 104607.	2.3	10
58	Automation of the verneuil technique on the basis of a stability analysis. Journal of Crystal Growth, 1981, 52, 505-508.	0.7	9
59	Grinfeld instability on crack surfaces. Physical Review E, 2001, 64, 046120.	0.8	9
60	Effective elastic moduli in solids with high density of cracks. Physical Review B, 2009, 80, .	1.1	9
61	Continuum description of noiseless diffusion-limited aggregation. Physical Review E, 1994, 50, 2161-2165.	0.8	8
62	Theory of diffusion induced grain boundary migration: is mass transport along free surfaces important?. Acta Materialia, 2002, 50, 1707-1716.	3.8	8
63	Pattern formation during diffusional transformations in the presence of triple junctions and elastic effects. Journal of Physics Condensed Matter, 2009, 21, 464106.	0.7	8
64	Testing singularities in the complex plane: Suggestions for dendritic-growth experiments. Physical Review E, 1993, 47, 534-544.	0.8	7
65	Inhibition of Rayleigh-Plateau instability on a unidirectionally patterned substrate. Physical Review E, 2015, 92, 032408.	0.8	6
66	Elimination of surface diffusion in the non-diagonal phase field model. Continuum Mechanics and Thermodynamics, 2017, 29, 969-976.	1.4	6
67	Nonmonotonicity of the Frictional Bimaterial Effect. Journal of Geophysical Research: Solid Earth, 2017, 122, 8270-8284.	1.4	6
68	Quantitative nondiagonal phase field modeling of eutectic and eutectoid transformations. Physical Review B, 2021, 103, .	1.1	4
69	Theory of unconventional singularities of frictional shear cracks. Journal of the Mechanics and Physics of Solids, 2021, 153, 104466.	2.3	4
70	Some aspects of the macroscopic theory of oriented crystallization from the melt. Acta Physica Academiae Scientiarum Hungaricae, 1979, 47, 139-149.	0.1	3
71	Comment on â€œSolidification of a Supercooled Liquid in a Narrow Channelâ€• Physical Review Letters, 2002, 88, 149601.	2.9	3
72	Elastic Domains in Antiferromagnets on Substrates. Physical Review Letters, 2006, 97, 067204.	2.9	3

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73	Steady-state migration of the liquid film along a grain boundary during melting of alloys. Acta Materialia, 2008, 56, 2290-2295.	3.8	3
74	Nonaxisymmetric patterns in the Saffman-Taylor problem and in three-dimensional directional solidification at low velocity. Physical Review E, 1993, 48, 4437-4443.	0.8	2
75	Theory of dendritic growth in three dimensions. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1994, 178, 147-152.	2.6	1
76	Fracture and the Grinfeld instability. Journal of Crystal Growth, 2005, 275, e307-e311.	0.7	1
77	Publisher's Note: Instabilities at frictional interfaces: Creep patches, nucleation, and rupture fronts [Phys. Rev. E 88, 060403(R) (2013)]. Physical Review E, 2013, 88, .	0.8	1
78	Crack Propagation as a Free Boundary Problem. Key Engineering Materials, 2007, 345-346, 429-432.	0.4	0
79	Kinetics of Isothermal Phase Transformations by Phase-Field Simulations: An Analogy between the Peritectic and Monotectic Systems. Defect and Diffusion Forum, 2010, 297-301, 1152-1159.	0.4	0
80	Growth of Non-Reflection Symmetric Patterns. NATO ASI Series Series B: Physics, 1991, , 31-41.	0.2	0