

# Alain Karma

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/972875/publications.pdf>

Version: 2024-02-01

197  
papers

24,744  
citations

8159

76  
h-index

6979

154  
g-index

206  
all docs

206  
docs citations

206  
times ranked

10856  
citing authors

#	ARTICLE	IF	CITATIONS
1	Evolution of nanoporosity in dealloying. <i>Nature</i> , 2001, 410, 450-453.	13.7	2,417
2	Phase-Field Simulation of Solidification. <i>Annual Review of Materials Research</i> , 2002, 32, 163-194.	4.3	1,431
3	Quantitative phase-field modeling of dendritic growth in two and three dimensions. <i>Physical Review E</i> , 1998, 57, 4323-4349.	0.8	1,250
4	Vortex dynamics in three-dimensional continuous myocardium with fiber rotation: Filament instability and fibrillation. <i>Chaos</i> , 1998, 8, 20-47.	1.0	777
5	Phase-Field Formulation for Quantitative Modeling of Alloy Solidification. <i>Physical Review Letters</i> , 2001, 87, 115701.	2.9	712
6	Phase-field method for computationally efficient modeling of solidification with arbitrary interface kinetics. <i>Physical Review E</i> , 1996, 53, R3017-R3020.	0.8	627
7	Solidification microstructures and solid-state parallels: Recent developments, future directions. <i>Acta Materialia</i> , 2009, 57, 941-971.	3.8	624
8	Quantitative phase-field model of alloy solidification. <i>Physical Review E</i> , 2004, 70, 061604.	0.8	616
9	Modeling Melt Convection in Phase-Field Simulations of Solidification. <i>Journal of Computational Physics</i> , 1999, 154, 468-496.	1.9	545
10	Solidification microstructures: recent developments, future directions. <i>Acta Materialia</i> , 2000, 48, 43-70.	3.8	510
11	Phase-Field Model of Mode III Dynamic Fracture. <i>Physical Review Letters</i> , 2001, 87, 045501.	2.9	482
12	Electrical alternans and spiral wave breakup in cardiac tissue. <i>Chaos</i> , 1994, 4, 461-472.	1.0	436
13	Method for Computing the Anisotropy of the Solid-Liquid Interfacial Free Energy. <i>Physical Review Letters</i> , 2001, 86, 5530-5533.	2.9	431
14	From Pulsus to Pulseless. <i>Circulation Research</i> , 2006, 98, 1244-1253.	2.0	386
15	Atomistic and continuum modeling of dendritic solidification. <i>Materials Science and Engineering Reports</i> , 2003, 41, 121-163.	14.8	381
16	Orientation selection in dendritic evolution. <i>Nature Materials</i> , 2006, 5, 660-664.	13.3	370
17	A Rabbit Ventricular Action Potential Model Replicating Cardiac Dynamics at Rapid Heart Rates. <i>Biophysical Journal</i> , 2008, 94, 392-410.	0.2	370
18	Crystal-melt interfacial free energies in hcp metals: A molecular dynamics study of Mg. <i>Physical Review B</i> , 2006, 73, .	1.1	334

#	ARTICLE	IF	CITATIONS
19	Laws of crack motion and phase-field models of fracture. Journal of the Mechanics and Physics of Solids, 2009, 57, 342-368.	2.3	318
20	Mechanisms for Discordant Alternans. Journal of Cardiovascular Electrophysiology, 2001, 12, 196-206.	0.8	306
21	The Dynamics of Cardiac Fibrillation. Circulation, 2005, 112, 1232-1240.	1.6	285
22	Physical Mechanism of Grain Refinement in Solidification of Undercooled Melts. Physical Review Letters, 1994, 73, 1380-1383.	2.9	270
23	Spiral breakup in model equations of action potential propagation in cardiac tissue. Physical Review Letters, 1993, 71, 1103-1106.	2.9	261
24	Phase-field modeling of binary alloy solidification with coupled heat and solute diffusion. Physical Review E, 2004, 69, 051607.	0.8	231
25	Phase-field crystal study of grain-boundary premelting. Physical Review B, 2008, 78, .	1.1	229
26	Numerical Simulation of Three-Dimensional Dendritic Growth. Physical Review Letters, 1996, 77, 4050-4053.	2.9	211
27	Phase-field simulations of dendritic crystal growth in a forced flow. Physical Review E, 2001, 63, 061601.	0.8	205
28	Occurrence of uveitis in recently diagnosed juvenile chronic arthritis A prospective study. Ophthalmology, 2001, 108, 2071-2075.	2.5	198
29	Phase-field model of dendritic sidebranching with thermal noise. Physical Review E, 1999, 60, 3614-3625.	0.8	197
30	Title is missing!. Journal of Materials Science, 2002, 10, 121-136.	1.2	194
31	Growth competition of columnar dendritic grains: A phase-field study. Acta Materialia, 2015, 82, 64-83.	3.8	191
32	Model of Intracellular Calcium Cycling in Ventricular Myocytes. Biophysical Journal, 2003, 85, 3666-3686.	0.2	189
33	Physical Mechanism of Grain Refinement in Solidification of Undercooled Melts. Physical Review Letters, 1994, 73, 2940-2940.	2.9	156
34	Helical crack-front instability in mixed-mode fracture. Nature, 2010, 464, 85-89.	18.7	156
35	Phase-field study of three-dimensional steady-state growth shapes in directional solidification. Physical Review E, 2010, 81, 011603.	0.8	156
36	Phase-field crystal modeling of equilibrium bcc-liquid interfaces. Physical Review B, 2007, 76, .	1.1	155

#	ARTICLE	IF	CITATIONS
37	Spiral Surface Growth without Desorption. <i>Physical Review Letters</i> , 1998, 81, 4444-4447.	2.9	153
38	Instability and Spatiotemporal Dynamics of Alternans in Paced Cardiac Tissue. <i>Physical Review Letters</i> , 2002, 88, 208101.	2.9	151
39	Phase-field-crystal model for fcc ordering. <i>Physical Review E</i> , 2010, 81, 061601.	0.8	148
40	Spatially Discordant Alternans in Cardiac Tissue. <i>Circulation Research</i> , 2006, 99, 520-527.	2.0	146
41	Calsequestrin-Mediated Mechanism for Cellular Calcium Transient Alternans. <i>Biophysical Journal</i> , 2008, 95, 3767-3789.	0.2	143
42	Phase field modeling of crack propagation. <i>Philosophical Magazine</i> , 2011, 91, 75-95.	0.7	139
43	Onset of sidebranching in directional solidification. <i>Physical Review E</i> , 2010, 81, 021608.	0.8	135
44	Coupled dynamics of voltage and calcium in paced cardiac cells. <i>Physical Review E</i> , 2005, 71, 021903.	0.8	134
45	Unsteady Crack Motion and Branching in a Phase-Field Model of Brittle Fracture. <i>Physical Review Letters</i> , 2004, 92, 245510.	2.9	131
46	Microstructure selection in thin-sample directional solidification of an Al-Cu alloy: In situ X-ray imaging and phase-field simulations. <i>Acta Materialia</i> , 2017, 129, 203-216.	3.8	131
47	Calculation of alloy solid-liquid interfacial free energies from atomic-scale simulations. <i>Physical Review B</i> , 2002, 66, .	1.1	130
48	Topology-generating interfacial pattern formation during liquid metal dealloying. <i>Nature Communications</i> , 2015, 6, 8887.	5.8	127
49	Spatiotemporal Control of Wave Instabilities in Cardiac Tissue. <i>Physical Review Letters</i> , 1999, 83, 456-459.	2.9	126
50	Modeling wave propagation in realistic heart geometries using the phase-field method. <i>Chaos</i> , 2005, 15, 013502.	1.0	125
51	Phase-field model of eutectic growth. <i>Physical Review E</i> , 1994, 49, 2245-2250.	0.8	119
52	Coupled motion of asymmetrical tilt grain boundaries: Molecular dynamics and phase field crystal simulations. <i>Acta Materialia</i> , 2012, 60, 6528-6546.	3.8	118
53	Control of Electrical Alternans in Canine Cardiac Purkinje Fibers. <i>Physical Review Letters</i> , 2006, 96, 104101.	2.9	113
54	Kinetics and morphological evolution of liquid metal dealloying. <i>Acta Materialia</i> , 2016, 115, 10-23.	3.8	110

#	ARTICLE	IF	CITATIONS
55	Multiscale Random-Walk Algorithm for Simulating Interfacial Pattern Formation. <i>Physical Review Letters</i> , 2000, 84, 1740-1743.	2.9	109
56	Crystal-Melt Interfaces and Solidification Morphologies in Metals and Alloys. <i>MRS Bulletin</i> , 2004, 29, 935-939.	1.7	109
57	Interface Mobility from Interface Random Walk. <i>Science</i> , 2006, 314, 632-635.	6.0	107
58	Theory of spiral wave dynamics in weakly excitable media: Asymptotic reduction to a kinematic model and applications. <i>Physical Review E</i> , 1999, 60, 5073-5105.	0.8	106
59	Two-phase microstructure selection in peritectic solidification: from island banding to coupled growth. <i>Acta Materialia</i> , 2003, 51, 599-611.	3.8	103
60	Peritectic coupled growth. <i>Acta Materialia</i> , 2004, 52, 2795-2808.	3.8	101
61	Grain growth competition during thin-sample directional solidification of dendritic microstructures: A phase-field study. <i>Acta Materialia</i> , 2017, 122, 220-235.	3.8	100
62	Phase-field approach for faceted solidification. <i>Physical Review E</i> , 2003, 68, 041604.	0.8	99
63	Crack Path Prediction in Anisotropic Brittle Materials. <i>Physical Review Letters</i> , 2005, 95, 235501.	2.9	99
64	Spatiotemporal control of cardiac alternans. <i>Chaos</i> , 2002, 12, 923-930.	1.0	97
65	"Good Enough Solutions" and the Genetics of Complex Diseases. <i>Circulation Research</i> , 2012, 111, 493-504.	2.0	94
66	Three-dimensional dendrite-tip morphology at low undercooling. <i>Physical Review E</i> , 2000, 61, 3996-4006.	0.8	93
67	Eutectic colony formation: A phase-field study. <i>Physical Review E</i> , 2002, 66, 061608.	0.8	89
68	Turing instability mediated by voltage and calcium diffusion in paced cardiac cells. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2006, 103, 5670-5675.	3.3	89
69	Atomistic to continuum modeling of solidification microstructures. <i>Current Opinion in Solid State and Materials Science</i> , 2016, 20, 25-36.	5.6	89
70	Meandering transition in two-dimensional excitable media. <i>Physical Review Letters</i> , 1990, 65, 2824-2827.	2.9	88
71	Phase-field simulation of three-dimensional dendrites: is microscopic solvability theory correct?. <i>Journal of Crystal Growth</i> , 1997, 174, 54-64.	0.7	88
72	Theoretical analysis of crack front instability in mode I+III. <i>Journal of the Mechanics and Physics of Solids</i> , 2011, 59, 1872-1887.	2.3	86

#	ARTICLE	IF	CITATIONS
73	Multiscale Finite-Difference-Diffusion-Monte-Carlo Method for Simulating Dendritic Solidification. Journal of Computational Physics, 2000, 165, 592-619.	1.9	82
74	Physics of Cardiac Arrhythmogenesis. Annual Review of Condensed Matter Physics, 2013, 4, 313-337.	5.2	82
75	Fiber-Rotation-Induced Vortex Turbulence in Thick Myocardium. Physical Review Letters, 1998, 81, 481-484.	2.9	81
76	Fluctuations in solidification. Physical Review E, 1993, 48, 3441-3458.	0.8	79
77	Phase-field-crystal study of grain boundary premelting and shearing in bcc iron. Physical Review B, 2013, 87, .	1.1	77
78	Grain refinement through fragmentation of dendrites in undercooled melts. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2001, 304-306, 20-25.	2.6	76
79	Velocity and shape selection of dendritic crystals in a forced flow. Physical Review E, 2000, 61, R49-R52.	0.8	74
80	Atomistic Simulation Methods for Computing the Kinetic Coefficient in Solid-Liquid Systems. Journal of Materials Science, 2002, 10, 181-189.	1.2	73
81	Spatiotemporal Dynamics of Oscillatory Cellular Patterns in Three-Dimensional Directional Solidification. Physical Review Letters, 2013, 110, 226102.	2.9	72
82	Beyond steady-state lamellar eutectic growth. Physical Review Letters, 1987, 59, 71-74.	2.9	69
83	Universal limit of spiral wave propagation in excitable media. Physical Review Letters, 1991, 66, 2274-2277.	2.9	69
84	Overstability of lamellar eutectic growth below the minimum-undercooling spacing. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2004, 35, 1815-1828.	1.1	68
85	Model of banding in diffusive and convective regimes during directional solidification of peritectic systems. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1998, 29, 1457-1470.	1.1	65
86	Ginzburg-Landau theory of crystalline anisotropy for bcc-liquid interfaces. Physical Review B, 2006, 73, .	1.1	65
87	Hyperphosphorylation of RyRs Underlies Triggered Activity in Transgenic Rabbit Model of LQT2 Syndrome. Circulation Research, 2014, 115, 919-928.	2.0	64
88	Pattern formation during electrochemical and liquid metal dealloying. MRS Bulletin, 2018, 43, 27-34.	1.7	64
89	Interface dynamics and banding in rapid solidification. Physical Review E, 1993, 47, 513-533.	0.8	63
90	Eutectic colony formation: A stability analysis. Physical Review E, 1999, 60, 6865-6889.	0.8	62

#	ARTICLE	IF	CITATIONS
91	Growth competition between columnar dendritic grains – Cellular automaton versus phase field modeling. Acta Materialia, 2018, 155, 286-301.	3.8	61
92	Noise-Induced Coherence in Neural Networks. Physical Review Letters, 1996, 77, 3256-3259.	2.9	60
93	Dislocation-Pairing Transitions in Hot Grain Boundaries. Physical Review Letters, 2011, 106, 046101.	2.9	60
94	Multiscale dendritic needle network model of alloy solidification. Acta Materialia, 2013, 61, 6474-6491.	3.8	60
95	Nonlinear dynamics of heart rhythm disorders. Physics Today, 2007, 60, 51-57.	0.3	59
96	Phase-field models for fatigue crack growth. Theoretical and Applied Fracture Mechanics, 2019, 103, 102282.	2.1	59
97	Oscillatory instability of deep cells in directional solidification. Physical Review A, 1989, 39, 4162-4169.	1.0	58
98	Spatiotemporal intracellular calcium dynamics during cardiac alternans. Chaos, 2009, 19, 037115.	1.0	57
99	Phase-field modeling of microstructural pattern formation during directional solidification of peritectic alloys without morphological instability. Physical Review E, 2001, 63, 031504.	0.8	56
100	Amplitude equation approach to spatiotemporal dynamics of cardiac alternans. Physical Review E, 2007, 76, 051911.	0.8	56
101	Amplitude equations for polycrystalline materials with interaction between composition and stress. Physical Review B, 2010, 81, .	1.1	55
102	Instability in dynamic fracture and the failure of the classical theory of cracks. Nature Physics, 2017, 13, 1186-1190.	6.5	54
103	Dynamics of banded structure formation in rapid solidification. Physical Review Letters, 1992, 68, 2616-2619.	2.9	53
104	Relationship between Equilibrium Fluctuations and Shear-Coupled Motion of Grain Boundaries. Physical Review Letters, 2012, 109, 095501.	2.9	53
105	Selection of doublet cellular patterns in directional solidification through spatially periodic perturbations. Physical Review E, 1998, 58, 7492-7506.	0.8	52
106	Scaling regime of spiral wave propagation in single-diffusive media. Physical Review Letters, 1992, 68, 397-400.	2.9	50
107	Origin of complex behaviour of spatially discordant alternans in a transgenic rabbit model of type 2 long QT syndrome. Journal of Physiology, 2009, 587, 4661-4680.	1.3	50
108	Structural disjoining potential for grain-boundary premelting and grain coalescence from molecular-dynamics simulations. Physical Review E, 2010, 81, 031601.	0.8	49

#	ARTICLE	IF	CITATIONS
109	Sustained Drug Release from Non-Eroding Nanoporous Templates. <i>Small</i> , 2010, 6, 213-216.	5.2	48
110	Three-dimensional dendritic needle network model for alloy solidification. <i>Acta Materialia</i> , 2016, 120, 240-254.	3.8	48
111	Structure of the Resonance Attractor for Spiral Waves in Excitable Media. <i>Physical Review Letters</i> , 1999, 83, 2453-2456.	2.9	47
112	Oscillatory lamellar microstructure in off-eutectic Al-Cu alloys. <i>Physical Review B</i> , 1990, 42, 833-837.	1.1	46
113	Critical Role of Crystalline Anisotropy in the Stability of Cellular Array Structures in Directional Solidification. <i>Physical Review Letters</i> , 1996, 77, 3387-3390.	2.9	46
114	A model of convection-induced oscillatory structure formation in peritectic alloys. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2000, 31, 1233-1246.	1.1	44
115	Wavelength Selection in Directional Solidification. <i>Physical Review Letters</i> , 1986, 57, 858-861.	2.9	42
116	New insights into the morphological stability of eutectic and peritectic coupled growth. <i>Jom</i> , 2004, 56, 28-32.	0.9	42
117	Method for computing short-range forces between solid-liquid interfaces driving grain boundary premelting. <i>Physical Review E</i> , 2009, 79, 020601.	0.8	42
118	Competition between noise and determinism in step flow growth. <i>Physical Review Letters</i> , 1993, 71, 3810-3813.	2.9	39
119	Crack Front Segmentation and Facet Coarsening in Mixed-Mode Fracture. <i>Physical Review Letters</i> , 2015, 115, 265503.	2.9	39
120	Oscillatory cellular patterns in three-dimensional directional solidification. <i>Physical Review E</i> , 2015, 92, 042401.	0.8	39
121	Systems Genetics Approach Identifies Gene Pathways and Adamts2 as Drivers of Isoproterenol-Induced Cardiac Hypertrophy and Cardiomyopathy in Mice. <i>Cell Systems</i> , 2017, 4, 121-128.e4.	2.9	39
122	Spiral Wave Meander in Excitable Media: The Large Core Limit. <i>Physical Review Letters</i> , 1997, 79, 665-668.	2.9	37
123	Unified Theoretical Framework for Polycrystalline Pattern Evolution. <i>Physical Review Letters</i> , 2013, 110, 265504.	2.9	36
124	Grain shape, grain boundary mobility and the Herring relation. <i>Acta Materialia</i> , 2004, 52, 285-292.	3.8	34
125	New paradigm for drug therapies of cardiac fibrillation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2000, 97, 5687-5689.	3.3	34
126	Theory of pulse instabilities in electrophysiological models of excitable tissues. <i>Physica D: Nonlinear Phenomena</i> , 1994, 73, 113-127.	1.3	32



#	ARTICLE	IF	CITATIONS
127	Phase field modeling of chemomechanical fracture of intercalation electrodes: Role of charging rate and dimensionality. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 132, 103696.	2.3	31
128	Inferring the Cellular Origin of Voltage and Calcium Alternans from the Spatial Scales of Phase Reversal during Discordant Alternans. <i>Biophysical Journal</i> , 2007, 92, L33-L35.	0.2	30
129	Thermal-field effects on interface dynamics and microstructure selection during alloy directional solidification. <i>Acta Materialia</i> , 2018, 150, 139-152.	3.8	30
130	Three-Dimensional Multiscale Modeling of Dendritic Spacing Selection During Al-Si Directional Solidification. <i>Jom</i> , 2015, 67, 1776-1785.	0.9	29
131	Langevin formalism for solidification. <i>Physical Review Letters</i> , 1993, 70, 3439-3442.	2.9	27
132	Surface Modes of Coherent Spinodal Decomposition. <i>Physical Review Letters</i> , 2012, 108, 265701.	2.9	27
133	Ginzburg-Landau theory of the bcc-liquid interface kinetic coefficient. <i>Physical Review B</i> , 2015, 91, .	1.1	27
134	Stochastic initiation and termination of calcium-mediated triggered activity in cardiac myocytes. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, E270-E279.	3.3	26
135	New experimental evidence for mechanism of arrhythmogenic membrane potential alternans based on balance of electrogenic INCX/ICa currents. <i>Heart Rhythm</i> , 2012, 9, 1698-1705.	0.3	25
136	Long-Lasting Sparks: Multi-Metastability and Release Competition in the Calcium Release Unit Network. <i>PLoS Computational Biology</i> , 2016, 12, e1004671.	1.5	25
137	Phase-field modeling of grain-boundary premelting using obstacle potentials. <i>Physical Review E</i> , 2014, 90, 012401.	0.8	24
138	Configurational stability of a crack propagating in a material with mode-dependent fracture energy - Part I: Mixed-mode I+III. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 126, 187-203.	2.3	23
139	Solidification cells at low velocity: The moving symmetric model. <i>Physical Review A</i> , 1986, 34, 4353-4362.	1.0	22
140	Necessity of investigating microstructure formation during directional solidification of transparent alloys in 3D. <i>Advances in Space Research</i> , 2005, 36, 80-85.	1.2	22
141	Mechanisms for initiation of cardiac discordant alternans. <i>European Physical Journal: Special Topics</i> , 2007, 146, 217-231.	1.2	22
142	Multiscale cohesive zone model for propagation of segmented crack fronts in mode I+III fracture. <i>International Journal of Fracture</i> , 2015, 191, 167-189.	1.1	22
143	A personalized, multiomics approach identifies genes involved in cardiac hypertrophy and heart failure. <i>Npj Systems Biology and Applications</i> , 2018, 4, 12.	1.4	22
144	Influence of morphological instability on grain boundary trajectory during directional solidification. <i>Acta Materialia</i> , 2019, 175, 214-221.	3.8	22

#	ARTICLE	IF	CITATIONS
145	The Ca <sup>2+</sup> transient as a feedback sensor controlling cardiomyocyte ionic conductances in mouse populations. <i>ELife</i> , 2018, 7, .	2.8	22
146	Grain Refinement in Solidification of Undercooled Ni-Cu Melts. <i>Materials Science Forum</i> , 1996, 215-216, 45-50.	0.3	20
147	Three-dimensional Dendritic Needle Network model with application to Al-Cu directional solidification experiments. <i>IOP Conference Series: Materials Science and Engineering</i> , 2015, 84, 012082.	0.3	20
148	Nonlinear Dynamics of Paced Cardiac Cells. <i>Annals of the New York Academy of Sciences</i> , 2006, 1080, 376-394.	1.8	19
149	Multi-phase-field analysis of short-range forces between diffuse interfaces. <i>Physical Review E</i> , 2010, 81, 051601.	0.8	19
150	Structural short-range forces between solid-melt interfaces. <i>Physical Review B</i> , 2013, 87, .	1.1	19
151	Off-site control of repolarization alternans in cardiac fibers. <i>Physical Review E</i> , 2010, 81, 011915.	0.8	18
152	Experimental observation of oscillatory cellular patterns in three-dimensional directional solidification. <i>Physical Review E</i> , 2017, 95, 012803.	0.8	18
153	Columnar and Equiaxed Solidification of Al-7Åwt.% Si Alloys in Reduced Gravity in the Framework of the CETSOL Project. <i>Jom</i> , 2017, 69, 1269-1279.	0.9	17
154	NCX-Mediated Subcellular Ca <sup>2+</sup> Dynamics Underlying Early Afterdepolarizations in LQT2 Cardiomyocytes. <i>Biophysical Journal</i> , 2018, 115, 1019-1032.	0.2	17
155	Universality and Stability Phase Diagram of Two-Dimensional Brittle Fracture. <i>Physical Review Letters</i> , 2018, 121, 134301.	2.9	16
156	Phase-field model of vapor-liquid-solid nanowire growth. <i>Physical Review Materials</i> , 2018, 2, .	0.9	16
157	Cellular multiplets in directional solidification. <i>Physical Review E</i> , 1997, 55, R1282-R1285.	0.8	15
158	From atoms to dendrites. <i>Jom</i> , 2004, 56, 49-54.	0.9	15
159	Transient Outward K <sup>+</sup> Current (I <sub>K<sup>+</sup></sub> ) Underlies the Right Ventricular Initiation of Polymorphic Ventricular Tachycardia in a Transgenic Rabbit Model of Long-QT Syndrome Type 1. <i>Circulation: Arrhythmia and Electrophysiology</i> , 2018, 11, e005414.	2.1	15
160	Propagative selection of tilted array patterns in directional solidification. <i>Physical Review Materials</i> , 2018, 2, .	0.9	15
161	Dendritic needle network modeling of the Columnar-to-Equiaxed transition. Part I: two dimensional formulation and comparison with theory. <i>Acta Materialia</i> , 2021, 202, 42-54.	3.8	14
162	Line-defect patterns of unstable spiral waves in cardiac tissue. <i>Physical Review E</i> , 2009, 79, 030906.	0.8	12

#	ARTICLE	IF	CITATIONS
163	Feedback control of unstable cellular solidification fronts. <i>Physical Review E</i> , 2007, 75, 021602.	0.8	11
164	Morphological Instability of Grain Boundaries in Two-Phase Coherent Solids. <i>Physical Review Letters</i> , 2015, 114, 105501.	2.9	11
165	Two-mode Ginzburg-Landau theory of crystalline anisotropy for fcc-liquid interfaces. <i>Physical Review B</i> , 2016, 93, .	1.1	11
166	Topological control of liquid-metal-dealloyed structures. <i>Nature Communications</i> , 2022, 13, .	5.8	11
167	Unidirectional Pinning and Hysteresis of Spatially Discordant Alternans in Cardiac Tissue. <i>Physical Review Letters</i> , 2012, 108, 108103.	2.9	10
168	Initial dynamics of a solid-liquid interface within a thermal gradient. <i>Scripta Materialia</i> , 2014, 88, 29-32.	2.6	10
169	Phase-field modeling of continuous fatigue via toughness degradation. <i>Engineering Fracture Mechanics</i> , 2022, 264, 108255.	2.0	10
170	Low-temperature dynamics of kinks on Ising interfaces. <i>Physical Review E</i> , 2005, 71, 036114.	0.8	9
171	LITAF (Lipopolysaccharide-Induced Tumor Necrosis Factor) Regulates Cardiac L-Type Calcium Channels by Modulating NEDD (Neural Precursor Cell Expressed Developmentally Downregulated Protein) 4-1 Ubiquitin Ligase. <i>Circulation Genomic and Precision Medicine</i> , 2019, 12, 407-420.	1.6	9
172	Configurational stability of a crack propagating in a material with mode-dependent fracture energy Part II: Drift of fracture facets in mixed-mode I+II+III. <i>Journal of the Mechanics and Physics of Solids</i> , 2020, 137, 103894.	2.3	9
173	Dynamical microstructure formation in 3D directional solidification of transparent model alloys: in situ characterization in DECLIC Directional Solidification Insert under diffusion transport in microgravity. <i>IOP Conference Series: Materials Science and Engineering</i> , 2015, 84, 012077.	0.3	8
174	Multi-scale needle-network model of complex dendritic microstructure formation. <i>IOP Conference Series: Materials Science and Engineering</i> , 2012, 33, 012095.	0.3	7
175	Spatiotemporal dynamics of calcium-driven cardiac alternans. <i>Physical Review E</i> , 2014, 89, 052707.	0.8	7
176	Elastically mediated interactions between grain boundaries and precipitates in two-phase coherent solids. <i>Physical Review B</i> , 2016, 94, .	1.1	7
177	Quantitative determination of the solidus line in the dilute limit of succinonitrile-camphor alloys. <i>Journal of Crystal Growth</i> , 2016, 447, 31-35.	0.7	7
178	Convection Effects During Bulk Transparent Alloy Solidification in DECLIC-DSI and Phase-Field Simulations in Diffusive Conditions. <i>Jom</i> , 2017, 69, 1280-1288.	0.9	7
179	Dendritic needle network modeling of the Columnar-to-Equiaxed Transition. Part II: three dimensional formulation, implementation and comparison with experiments. <i>Acta Materialia</i> , 2021, 202, 463-477.	3.8	7
180	On the formation of the banded structure in rapid solidification. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 1994, 178, 153-157.	2.6	6

#	ARTICLE	IF	CITATIONS
181	Spiralling to destruction at the edge of chaos. Nature, 1996, 379, 118-119.	13.7	6
182	Mechanisms of Layer Structure Formation in Peritectic Alloys. Materials Research Society Symposia Proceedings, 1997, 481, 39.	0.1	5
183	Crack path selection in orientationally ordered composites. Physical Review E, 2020, 102, 013004.	0.8	5
184	Oscillatory and tip-splitting instabilities in 2D dynamic fracture: The roles of intrinsic material length and time scales. Journal of the Mechanics and Physics of Solids, 2021, 151, 104372.	2.3	5
185	Spiral waves over metal catalysts. Physical Review A, 1992, 46, 3083-3091.	1.0	3
186	Comment on "Spatial Subharmonics, Irrational Patterns, and Disorder in Eutectic Growth". Physical Review Letters, 1995, 75, 2444-2444.	2.9	3
187	Editorial: Microstructural Evolution Based on Fundamental Interfacial Properties. Journal of Materials Science, 2002, 10, 119-119.	1.2	3
188	In situ characterization of interface-microstructure dynamics in 3D-Directional Solidification of model transparent alloys. Microgravity Science and Technology, 2005, 16, 133-137.	0.7	3
189	Voltage and Calcium Coupling in the Genesis of Cardiac Afterdepolarizations. Biophysical Journal, 2014, 106, 631a.	0.2	2
190	Configurational Stability of a Crack Propagating in Mixed-Mode I+II+III. Structural Integrity, 2019, 101-105.	0.8	1
191	Velocity and Shape Selection of Dendritic Crystals in a Forced Flow. , 2001, , 47-56.		1
192	An Inverse Spectral Method to Localize Discordant Alternans Regions on the Heart from Body Surface Measurements. Lecture Notes in Computer Science, 2013, , 241-248.	1.0	1
193	Dynamics of Banded Structure Formation in Rapid Solidification. Physical Review Letters, 1992, 68, 3368-3368.	2.9	0
194	Numerical Simulation of Three-Dimensional Dendritic Growth[Phys. Rev. Lett. 77, 4050 (1996)]. Physical Review Letters, 1997, 78, 753-753.	2.9	0
195	Calcium Mediated Mechanism of Early Afterdepolarizations in LQT2 Ventricular Myocytes. Biophysical Journal, 2015, 108, 264a.	0.2	0
196	Transient Outward K+ Current Underlies Heterogeneity of Action Potential Duration and Early Afterdepolarization from Right Ventricle in Transgenic Rabbit Model of Long QT Type 1. Biophysical Journal, 2015, 108, 113a.	0.2	0
197	Title is missing!. , 2003, , .		0