Rainer Backofen

List of Publications by Year
in descending order

Version: 2024-02-01

39 papers	1,015 citations	430442 18 h-index	414034 32 g-index
39 all docs	39 docs citations	39 times ranked	776 citing authors

#	Article	IF	Citations
1	Derivation of the phase-field-crystal model for colloidal solidification. Physical Review E, 2009, 79, 051404.	0.8	178
2	Nucleation and growth by a phase field crystal (PFC) model. Philosophical Magazine Letters, 2007, 87, 813-820.	0.5	84
3	Complex dewetting scenarios of ultrathin silicon films for large-scale nanoarchitectures. Science Advances, 2017, 3, eaao1472.	4.7	74
4	Faceting of Equilibrium and Metastable Nanostructures: A Phase-Field Model of Surface Diffusion Tackling Realistic Shapes. Crystal Growth and Design, 2015, 15, 2787-2794.	1.4	69
5	Capturing the complex physics behind universal grain size distributions in thin metallic films. Acta Materialia, 2014, 64, 72-77.	3.8	55
6	Three-dimensional phase-field crystal modeling of fcc and bcc dendritic crystal growth. Journal of Crystal Growth, 2011, 334, 146-152.	0.7	39
7	Process modeling of the industrial VGF growth process using the software package CrysVUN++. Journal of Crystal Growth, 2000, 211, 202-206.	0.7	32
8	Study of oxygen transport in Czochralski growth of silicon. Microelectronic Engineering, 1999, 45, 135-147.	1.1	31
9	Particles on curved surfaces: A dynamic approach by a phase-field-crystal model. Physical Review E, 2010, 81, 025701.	0.8	31
10	The influence of membrane bound proteins on phase separation and coarsening in cell membranes. Physical Chemistry Chemical Physics, 2012, 14, 14509.	1.3	31
11	Morphological Evolution of Pit-Patterned Si(001) Substrates Driven by Surface-Energy Reduction. Nanoscale Research Letters, 2017, 12, 554.	3.1	30
12	SPN-approximations of internal radiation in crystal growth of optical materials. Journal of Crystal Growth, 2004, 266, 264-270.	0.7	29
13	Controlling the energy of defects and interfaces in the amplitude expansion of the phase-field crystal model. Physical Review E, 2017, 96, 023301.	0.8	27
14	Stress Induced Branching of Growing Crystals on Curved Surfaces. Physical Review Letters, 2016, 116, 135502.	2.9	26
15	A phase-field-crystal approach to critical nuclei. Journal of Physics Condensed Matter, 2010, 22, 364104.	0.7	25
16	Engineered Coalescence by Annealing 3D Ge Microstructures into High-Quality Suspended Layers on Si. ACS Applied Materials & Interfaces, 2015, 7, 19219-19225.	4.0	24
17	Morphological instability of heteroepitaxial growth on vicinal substrates: A phase-field crystal study. Journal of Crystal Growth, 2011, 318, 18-22.	0.7	22
18	A Continuous Approach to Discrete Ordering on $mathbb{S}^2$. Multiscale Modeling and Simulation, 2011, 9, 314-334.	0.6	20

#	Article	IF	Citations
19	Defects at grain boundaries: A coarse-grained, three-dimensional description by the amplitude expansion of the phase-field crystal model. Physical Review Materials, 2018, 2, .	0.9	20
20	Phase-field simulations of faceted Ge/Si-crystal arrays, merging into a suspended film. Applied Surface Science, 2017, 391, 33-38.	3.1	18
21	Controlling Grain Boundaries by Magnetic Fields. Physical Review Letters, 2019, 122, 126103.	2.9	18
22	Thin-film growth dynamics with shadowing effects by a phase-field approach. Physical Review B, 2016, 94, .	1.1	16
23	Continuum modelling of semiconductor heteroepitaxy: an applied perspective. Advances in Physics: X, 2016, 1, 331-367.	1.5	14
24	Optimal temperature profiles for annealing of GaAs-crystals. Journal of Crystal Growth, 2000, 220, 6-15.	0.7	12
25	Solidâ€“liquid interfacial energies and equilibrium shapes of nanocrystals. Journal of Physics Condensed Matter, 2009, 21, 464109.	0.7	12
26	Solid-state dewetting of single-crystal silicon on insulator: effect of annealing temperature and patch size. Microelectronic Engineering, 2018, 190, 1-6.	1.1	12
27	The interplay of morphological and compositional evolution in crystal growth: a phase-field model. Philosophical Magazine, 2014, 94, 2162-2169.	0.7	10
28	A phase field crystal study of heterogeneous nucleation â€“ application of the string method. European Physical Journal: Special Topics, 2014, 223, 497-509.	1.2	10
29	Phase-field simulation of stripe arrays on metal bcc(110) surfaces. Physical Review E, 2008, 77, 051605.	0.8	9
30	Relaxation of curvature-induced elastic stress by the Asaro-Tiller-Grinfeld instability. Europhysics Letters, 2015, 111, 48006.	0.7	9
31	Magnetically induced/enhanced coarsening in thin films. Physical Review Materials, 2020, 4, .	0.9	6
32	A cellular automata algorithm for step dynamics in continuum modeling of epitaxial growth. Journal of Crystal Growth, 2007, 303, 100-104.	0.7	4
33	Elastic interactions in phase-field crystal models: numerics and postprocessing. International Journal of Materials Research, 2010, 101, 467-472.	0.1	4
34	Magnetic APFC modeling and the inï¬‚uence of magneto-structural interactions on grain shrinkage. Modelling and Simulation in Materials Science and Engineering, 0, , .	0.8	4
35	A framework for optimization of crystal growth processes applied to VGF growth of fluorides. Journal of Crystal Growth, 2005, 275, e349-e353.	0.7	3
36	A comparison of different approaches to enforce lattice symmetry in twoâ€dimensional crystals. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000192.	0.2	3

#	Article	IF	Citations
37	Numerical simulation of formation of grain structure and global heat transport during solidification of technical alloys in MSL inserts. Advances in Space Research, 2002, 29, 549-552.	1.2	2
38	<mml:math altimg="si3.gif" overflow="scroll" xmlns:xocs="http://www.elsevier.com/xml/xocs/dtd" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.elsevier.com/xml/ja/dtd" xmlns:ja="http://www.elsevier.com/xml/ja/dtd" xmlns:mml="http://www.w3.org/1998/Math/MathML" xmlns:tb="http://www.elsevier.com/xml/common/table/dtd" xmlns:sb="http://www.elsevier.com/xml/common/struct-bib/dtd" xmlns:ce="http://www.elsevier.com/x	1.1	1
39	Two-dimensional liquid crystalline growth within a phase-field-crystal model. Physical Review E, 2015, 92, 012504.	0.8	1