Markus Rettenmayr

List of Publications by Year
in descending order

48 papers	604 citations	567281 15 h-index	677142 22 g-index
48 all docs	48 docs citations	48 times ranked	511 citing authors

#	Article	IF	Citations
1	Characterization of precipitate evolution in an artificially aged Alâ€“Znâ€“Mgâ€“Scâ€“Zr alloy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2010, 527, 1068-1073.	5.6	47
2	Advance in Orientation Microscopy: Quantitative Analysis of Nanocrystalline Structures. ACS Nano, 2011, 5, 2580-2586.	14.6	37
3	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
4	A phase-field study on the peritectic phase transition in Fe-C alloys. Acta Materialia, 2017, 132, 565-575.	7.9	31
5	Microstructural evolution during temperature gradient zone melting: Cellular automaton simulation and experiment. Computational Materials Science, 2018, 146, 204-212.	3.0	31
6	Liquid droplet migration under static and dynamic conditions: Analytical model, phase-field simulation and experiment. Acta Materialia, 2015, 86, 229-239.	7.9	29
7	Resolidification of the mushy zone of multiphase and multicomponent alloys in a temperature gradient â€“ Experiments and modeling. Acta Materialia, 2015, 91, 34-40.	7.9	25
8	Evaluation of wettability and surface energy of native Nitinol surfaces in relation to hemocompatibility. Materials Science and Engineering C, 2013, 33, 127-132.	7.3	24
9	The shape of dendritic tips: a test of theory with computations and experiments. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200326.	3.4	22
10	Characterization of grain structure in nanocrystalline gadolinium by high-resolution transmission electron microscopy. Journal of Materials Research, 2009, 24, 342-346.	2.6	21
11	Reactive wetting of alumina by Ti-rich Niâ€“Tiâ€“Zr alloys. Journal of Materials Science, 2016, 51, 3693-3700.	3.7	19
12	Observation of early melting stages of an Al â€“ Cu alloy in a temperature gradient. International Journal of Materials Research, 2011, 102, 1226-1231.	0.3	17
13	Interaction of local solidification and remelting during dendrite coarsening - modeling and comparison with experiments. Scientific Reports, 2017, 7, 17809.	3.3	17
14	Nitinol Surfaces for Implantation. Journal of Materials Engineering and Performance, 2009, 18, 470-474.	2.5	16
15	Alternating-magnetic-field induced enhancement of diffusivity in Ni-Cr alloys. Scientific Reports, 2017, 7, 18085.	3.3	15
16	Theoretical modeling of crystalline symmetry order with dendritic morphology. European Physical Journal: Special Topics, 2020, 229, 275-286.	2.6	15
17	The Liâ€“C phase equilibria. International Journal of Materials Research, 2013, 104, 1066-1078.	0.3	14
18	Nucleation behaviour and microstructure of single Al-Si12 powder particles rapidly solidified in a fast scanning calorimeter. Journal of Materials Science, 2021, 56, 12881-12897.	3.7	14

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19	Quaternary Al-Cu-Mg-Si Q Phase: Sample Preparation, Heat Capacity Measurement and First-Principles Calculations. Journal of Phase Equilibria and Diffusion, 2016, 37, 119-126.	1.4	12
20	Kinetic transition in the orderâ€“disorder transformation at a solid/liquid interface. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20170207.	3.4	12
21	Solute trapping in non-equilibrium solidification: A comparative model study. Materialia, 2019, 6, 100256.	2.7	12
22	Influence of time-variant temperature gradients on resolidifying mushy zones. Journal of Crystal Growth, 2014, 408, 49-53.	1.5	11
23	Modeling of melting and resolidification of equiaxed microstructures in a temperature gradient. Scripta Materialia, 2018, 151, 28-32.	5.2	11
24	Microstructure and morphology of Si crystals grown in pure Si and Alâ€“Si melts. Journal of Physics Condensed Matter, 2022, 34, 094002.	1.8	11
25	Modeling rapid liquid/solid and solid/liquid phase transformations in Al alloys. International Journal of Materials Research, 2008, 99, 613-617.	0.3	10
26	Local melting/solidification during peritectic solidification in a steep temperature gradient: analysis of a directionally solidified Alâ€“25at%Ni. Applied Physics A: Materials Science and Processing, 2014, 116, 1821-1831.	2.3	9
27	Experimental determination of the nucleation rate of melt in a solid solution. Acta Materialia, 2014, 72, 32-40.	7.9	9
28	Dendrite tips as elliptical paraboloids. Journal of Physics Condensed Matter, 2021, 33, 443002.	1.8	9
29	Joining of SiO2 glass and 316L stainless steel using Biâ€“Ag-based active solders. Journal of Materials Science, 2021, 56, 3444-3454.	3.7	8
30	Diffusion in a temperature gradient â€“ A single cycle method to determine frequency factor and activation energy of solid diffusion coefficients in alloys. Acta Materialia, 2015, 95, 212-215.	7.9	7
31	Amorphization and nanocrystal formation in a Pdâ€“Niâ€“Cuâ€“P alloy after cooling under different conditions. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, 20200321.	3.4	7
32	Effect of Heat Treatment Combined with an Alternating Magnetic Field on Microstructure and Mechanical Properties of a Ni-Based Superalloy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2019, 50, 1837-1850.	2.2	6
33	Phase field analysis of the growth of fast and slow crystallites. European Physical Journal: Special Topics, 2020, 229, 433-437.	2.6	5
34	Nucleation Behavior of a Single Al-20Si Particle Rapidly Solidified in a Fast Scanning Calorimeter. Materials, 2021, 14, 2920.	2.9	5
35	Quantitative Modeling of Fibrinogen Adsorption on Different Biomaterials. Cellular and Molecular Bioengineering, 2013, 6, 210-219.	2.1	4
36	Local supersaturation during melting in a temperature gradient. Philosophical Magazine Letters, 2014, 94, 696-701.	1.2	4

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37	Predicting microsegregation in multicomponent aluminum alloys â€“ progress in thermodynamic consistency. International Journal of Materials Research, 2010, 101, 1398-1404.	0.3	3
38	Simulation of Liquid Film Migration during Melting. Materials Science Forum, 2014, 790-791, 127-132.	0.3	3
39	Resolidification of a mushy-zone and directional solidification: a method for efficient alloy development demonstrated using the example of Cuâ€“Gaâ€“Sn. Scientific Reports, 2020, 10, 21705.	3.3	3
40	Effects of local nonequilibrium in rapid eutectic solidificationâ€”Part 2: Analysis of effects and comparison to experiment. Mathematical Methods in the Applied Sciences, 2021, 44, 12271.	2.3	3
41	Thermodynamic description of metastable fcc/liquid phase equilibria and solidification kinetics in Al-Cu alloys. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, 20200327.	3.4	3
42	On/off directional solidification of near peritectic TRIS-NPG with a planar but tilted solid/liquid interface under microgravity conditions. Scripta Materialia, 2022, 214, 114683.	5.2	3
43	Simultaneous melting and solidification of a columnar dendritic microstructure in a temperature gradient: Numerical modeling and experimentsâ‹†. European Physical Journal E, 2020, 43, 5.	1.6	2
44	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
45	Solidification and melting processes â€” one of the fundamental asymmetries in nature. Transactions of the Indian Institute of Metals, 2009, 62, 265-268.	1.5	1
46	Transient growth of solid nuclei in the liquid â€“ A numerical study on early stages of solidification. Journal of Crystal Growth, 2013, 382, 26-30.	1.5	1
47	Modelling of liquid film migration in Al-Cu alloys. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, 20200328.	3.4	1
48	Simulation of the Peritectic Phase Transition in Fe-C Alloys. Materials, 2022, 15, 537.	2.9	1