Andrew M Mullis

List of Publications by Year
in descending order

115 papers	1,652 citations	257450 24 h-index	345221 36 g-index
117 all docs	117 docs citations	117 times ranked	778 citing authors

#	Article	IF	Citations
1	Microstructural development and mechanical properties of drop tube atomized Al-2.85 wt% Fe. Journal of Materials Science and Technology, 2022, 104, 41-51.	10.7	6
2	Towards a Physically Consistent Phase-Field Model for Alloy Solidification. Metals, 2022, 12, 272.	2.3	2
3	Partitionless solidification and anomalous triradiate crystal formation in drop-tube processed Al-3.9Âwt%Fe alloys. Materials Today Communications, 2022, 31, 103274.	1.9	1
4	Solidification transformations in liquid phase separated metastable monotectic Cu-50 at. % Co alloy. Canadian Journal of Chemistry, 2021, 99, 831-836.	1.1	1
5	Relationship between cooling rate and SDAS in liquid phase separated metastable Cuâ€“Co alloys. Journal of Alloys and Compounds, 2021, 883, 160823.	5.5	9
6	Presence of Î-and Îµ crystal structures in rapidly solidified intermetallic compound Ni5Ge3. Journal of Alloys and Compounds, 2021, 887, 161465.	5.5	0
7	A Model for the Anomalous Velocity-Undercooling Behaviour of Levitated Al-Ni Alloys On-board the International Space Station. Microgravity Science and Technology, 2021, 33, 1.	1.4	2
8	Evidence for dendritic fragmentation in as-solidified samples of deeply undercooled melts. Journal of Crystal Growth, 2020, 529, 125276.	1.5	4
9	Mechanical behaviour of rapidly solidified copper: Effects of undercooling and strain rate. Materials Science and Technology, 2020, 36, 202-209.	1.6	2
10	Spatially Resolved Velocity Mapping of the Melt Plume During High-Pressure Gas Atomization of Liquid Metals. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2020, 51, 1973-1988.	2.1	2
11	Dynamics of coreâ€“shell particle formation in drop-tube processed metastable monotectic alloys. Acta Materialia, 2020, 188, 591-598.	7.9	28
12	Mechanical Properties of Rapidly Solidified Ni₃Ge and Ni₅Ge₃ Intermetallic Compounds. Journal of Nanoscience and Nanotechnology, 2020, 20, 4591-4596.	0.9	0
13	Effect of cooling rate on the microstructure of rapidly solidified SiGe. Materials Characterization, 2019, 154, 377-385.	4.4	8
14	Microstructure Characterization of Ni-75 at.% Al Raney Type Alloy as a Result of Cooling Rate and Chromium Doping. MRS Advances, 2019, 4, 1441-1447.	0.9	0
15	A novel route to the coupling of molecular dynamics and phase-field simulations of crystal growth. IOP Conference Series: Materials Science and Engineering, 2019, 529, 012032.	0.6	3
16	Orderâ€“Disorder Morphologies in Rapidly Solidified Ni3Ge Intermetallic. Jom, 2019, 71, 2728-2733.	1.9	0
17	Existence of seaweed structures in rapidly solidified Ni3Ge intermetallic. Journal of Alloys and Compounds, 2019, 801, 640-644.	5.5	4
18	THE PHYSICAL MECHANISM FORMELT PULSATION DURING CLOSE-COUPLED ATOMIZATION. Atomization and Sprays, 2019, 29, 143-159.	0.8	2

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19	Direct observation of dendrite fragmentation in the solidification of undercooled melts. IOP Conference Series: Materials Science and Engineering, 2019, 529, 012020.	0.6	1
20	Effect of cooling rate and chromium doping on the microstructure of Al-25â€‰at.% Ni Raney type alloy. Journal of Alloys and Compounds, 2018, 744, 801-808.	5.5	5
21	CFD Modelling of High Pressure Gas Atomization of Liquid Metals. Minerals, Metals and Materials Series, 2018, , 77-84.	0.4	1
22	Order-disorder morphologies in rapidly solidified Îµ/Îµâ€²-Ni5Ge3 intermetallic. Journal of Alloys and Compounds, 2018, 739, 160-163.	5.5	2
23	On the origin of anomalous eutectic growth from undercooled melts: Why re-melting is not a plausible explanation. Acta Materialia, 2018, 145, 186-195.	7.9	30
24	Development of an Anti-Trapping Current for Phase Field Models Using Arbitrary CALPHAD Thermodynamics. Materials Science Forum, 2018, 941, 2337-2342.	0.3	0
25	Simulation of Intermetallic Solidification Using Phase-Field Techniques. Transactions of the Indian Institute of Metals, 2018, 71, 2617-2622.	1.5	0
26	Metastable monotectic phase separation in Coâ€“Cu alloys. Journal of Materials Science, 2018, 53, 11749-11764.	3.7	26
27	Phase-Field Modelling of Intermetallic Solidification. Minerals, Metals and Materials Series, 2018, , 587-596.	0.4	1
28	Mechanical Properties of Rapidly Solidified Ni5Ge3 Intermetallic. Minerals, Metals and Materials Series, 2018, , 705-711.	0.4	1
29	Disorder-order morphologies in drop-tube processed Ni 3 Ge: Dendritic and seaweed growth. Journal of Alloys and Compounds, 2017, 707, 327-331.	5.5	17
30	Solidification of Undercooled Melts of Al-Based Alloys on Earth and in Space. Jom, 2017, 69, 1303-1310.	1.9	11
31	The Role of Recrystallization in Spontaneous Grain Refinement of Rapidly Solidified Ni3Ge. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2017, 48, 5424-5431.	2.2	12
32	Effect of rapid solidification on the microstructure and microhardness of BS1452 grade 250 hypoeutectic grey cast iron. Journal of Alloys and Compounds, 2017, 707, 347-350.	5.5	27
33	Morphology of Spherulites in Rapidly Solidified Ni3Ge Droplets. Crystals, 2017, 7, 100.	2.2	9
34	Phase Transformation, Microstructural Evolution and Property Modification in Rapidly Solidified Grey Cast Iron. Minerals, Metals and Materials Series, 2017, , 719-727.	0.4	0
35	Morphology of Order-Disorder Structures in Rapidly Solidified L12 Intermetallics. Minerals, Metals and Materials Series, 2017, , 729-736.	0.4	2
36	Rapidly solidified Ag-Cu eutectics: A comparative study using drop-tube and melt fluxing techniques. IOP Conference Series: Materials Science and Engineering, 2016, 117, 012053.	0.6	3

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37	The origins of spontaneous grain refinement in deeply undercooled metallic melts. IOP Conference Series: Materials Science and Engineering, 2016, 117, 012054.	0.6	0
38	Rapid solidification morphologies in Ni 3 Ge: Spherulites, dendrites and dense-branched fractal structures. Intermetallics, 2016, 76, 70-77.	3.9	26
39	Microstructure evolution and mechanical properties of drop-tube processed, rapidly solidified grey cast iron. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 654, 143-150.	5.6	39
40	An adaptive mesh method for phase-field simulation of alloy solidification in three dimensions. IOP Conference Series: Materials Science and Engineering, 2015, 84, 012068.	0.6	2
41	Effect of Cooling Rate on Drop-Tube Processed Commercial Grey Cast Iron. , 2015, , .		0
42	Deterministic side-branching during thermal dendritic growth. IOP Conference Series: Materials Science and Engineering, 2015, 84, 012071.	0.6	3
43	Structure and phase-composition of Ti-doped gas atomized Raney-type Ni catalyst precursor alloys. Intermetallics, 2015, 67, 63-68.	3.9	5
44	Solidification morphology and phase selection in drop-tube processed Niâ€“Feâ€“Si intermetallics. Intermetallics, 2015, 60, 33-44.	3.9	15
45	Numerical and Experimental Investigations of the Effect of Melt Delivery Nozzle Design on the Open- to Closed-Wake Transition in Closed-Coupled Gas Atomization. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2015, 46, 1990-2004.	2.1	24
46	Spontaneous deterministic side-branching behavior in phase-field simulations of equiaxed dendritic growth. Journal of Applied Physics, 2015, 117, 114305.	2.5	13
47	Microstructural Evolution and Phase Formation in Rapidly Solidified Ni-25.3ÂAt.ÂPct Si Alloy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2015, 46, 4705-4715.	2.2	14
48	Simulations of three-dimensional dendritic growth using a coupled thermo-solutal phase-field model. Applied Physics Letters, 2015, 107, 053108.	3.3	13
49	The Origins of Spontaneous Grain Refinement in Deeply Undercooled Metallic Melts. Metals, 2014, 4, 155-167.	2.3	6
50	Mechanism selection for spontaneous grain refinement in undercooled metallic melts. Acta Materialia, 2014, 77, 76-84.	7.9	57
51	Determination of the Origin of Anomalous Eutectic Structures from <i>In Situ</i> Observation of Recalescence Behaviour. Materials Science Forum, 2014, 790-791, 349-354.	0.3	5
52	Evidence for an extended transition in growth orientation and novel dendritic seaweed structures in undercooled Cuâ€“8.9wt%Ni. Journal of Alloys and Compounds, 2014, 615, S612-S615.	5.5	10
53	Evidence for an extensive, undercooling-mediated transition in growth orientation, and novel dendritic seaweed microstructures in Cuâ€“8.9wt.% Ni. Acta Materialia, 2014, 66, 378-387.	7.9	60
54	A Phase-Field Model for the Diffusive Melting of Isolated Dendritic Fragments. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2014, 45, 3097-3102.	2.2	2

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55	Lamella structure formation in drop-tube processed Niâ€“25.3at.% Si alloy. Journal of Alloys and Compounds, 2014, 615, S599-S601.	5.5	11
56	Non-Equilibrium Processing of Ni-Si Alloys at High Undercooling and High Cooling Rates. Materials Science Forum, 2014, 790-791, 22-27.	0.3	3
57	Numerical and experimental modelling of back stream flow during close-coupled gas atomization. Computers and Fluids, 2013, 88, 1-10.	2.5	23
58	Log-Normal Melt Pulsation in Close-Coupled Gas Atomization. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2013, 44, 789-793.	2.1	5
59	Estimation of Cooling Rates During Close-Coupled Gas Atomization Using Secondary Dendrite Arm Spacing Measurement. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2013, 44, 992-999.	2.1	84
60	Spasmodic growth during the rapid solidification of undercooled Ag-Cu eutectic melts. Applied Physics Letters, 2013, 102, .	3.3	31
61	Operating point selection for dendritic growth during rapid solidification. IOP Conference Series: Materials Science and Engineering, 2012, 27, 012076.	0.6	0
62	A new approach to multi-phase field for the solidification of alloys. IOP Conference Series: Materials Science and Engineering, 2012, 33, 012099.	0.6	1
63	Phase-field modelling of rapid solidification in alloy systems: Spontaneous grain refinement effects. IOP Conference Series: Materials Science and Engineering, 2012, 33, 012109.	0.6	3
64	Towards a Three-Dimensional Phase-Field Model of Dendritic Solidification with Physically Realistic Interface Width. Transactions of the Indian Institute of Metals, 2012, 65, 617-621.	1.5	3
65	The formation of regular Î±Ni-Î³(Ni31Si12) eutectic structures from undercooled Niâ€“25 at.% Si melts. Intermetallics, 2012, 22, 55-61.	3.9	33
66	Disorder trapping during the solidification of Î²Ni3Ge from its deeply undercooled melt. Journal of Materials Science, 2012, 47, 2411-2420.	3.7	35
67	On the Fully Implicit Solution of a Phase-Field Model for Binary Alloy Solidification in Three Dimensions. Advances in Applied Mathematics and Mechanics, 2012, 4, 665-684.	1.2	8
68	Prediction of the operating point of dendrites growing under coupled thermosolutal control at high growth velocity. Physical Review E, 2011, 83, 061601.	2.1	22
69	Solute trapping and the effects of anti-trapping currents on phase-field models of coupled thermo-solutal solidification. Journal of Crystal Growth, 2010, 312, 1891-1897.	1.5	34
70	Quantitative phase-field modeling of solidification at high Lewis number. Physical Review E, 2009, 79, 030601.	2.1	32
71	High speed imaging and Fourier analysis of the melt plume during close coupled gas atomisation. Powder Metallurgy, 2009, 52, 205-212.	1.7	5
72	The prediction of tip radius during rapid dendritic growth under coupled thermo-solutal control: What value Ïƒ. Transactions of the Indian Institute of Metals, 2009, 62, 309-313.	1.5	0

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73	A fully implicit, fully adaptive time and space discretisation method for phase-field simulation of binary alloy solidification. Journal of Computational Physics, 2007, 225, 1271-1287.	3.8	78
74	Phase Field Analysis of Eutectic Breakdown. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2007, 38, 1426-1432.	2.2	5
75	Quantification of mesh induced anisotropy effects in the phase-field method. Computational Materials Science, 2006, 36, 345-353.	3.0	25
76	An analytical geometrical model for secondary dendrite arm detachment. Scripta Materialia, 2006, 54, 795-799.	5.2	3
77	Mechanically Deformed Primary Dendritic Structures Observed During the Solidification of Undercooled Melts. , 2005, , 175-184.		2
78	An extension to the Wheeler phase-field model to allow decoupling of the capillary and kinetic anisotropies. European Physical Journal B, 2004, 41, 377-382.	1.5	2
79	The mechanism for spontaneous grain refinement in undercooled pure Cu melts. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2004, 375-377, 479-484.	5.6	39
80	The effect of experimental variables on the levels of melt undercooling. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2004, 375-377, 485-487.	5.6	33
81	The solidification of undercooled melts via twinned dendritic growth. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2004, 35, 3211-3220.	2.2	18
82	The effects of fluid flow on secondary arm coarsening during dendritic solidification. Journal of Materials Science, 2003, 38, 2517-2523.	3.7	12
83	A study of kinetically limited dendritic growth at high undercooling using phase-field techniques. Acta Materialia, 2003, 51, 1959-1969.	7.9	18
84	Effect of the ratio of solid to liquid conductivity on the stability parameter of dendrites within a phase-field model of solidification. Physical Review E, 2003, 68, 011602.	2.1	10
85	Experimental Evidence for Dendrite Tip Splitting in Deeply Undercooled, Ultrahigh Purity Cu. Physical Review Letters, 2002, 89, 215502.	7.8	45
86	Mechanical deformation of dendrites by fluid flow during the solidification of undercooled melts. Acta Materialia, 2002, 50, 3743-3755.	7.9	68
87	A Phase Field Model for Grain Refinement in Deeply Undercooled Metallic Melts. Materials Research Society Symposia Proceedings, 2001, 677, 7151.	0.1	0
88	Particle Dynamic Simulation of Semi-Solid Metal Rheology. Materials Research Society Symposia Proceedings, 2001, 677, 7181.	0.1	0
89	Deformation of dendrites by fluid flow during rapid solidification. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2001, 304-306, 245-249.	5.6	32
90	Spontaneous grain refinement in alloy systems at low undercooling. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2001, 304-306, 267-271.	5.6	9

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91	A mechanism for the equalisation of primary spacing during cellular and dendritic growth. Journal of Materials Science, 2001, 36, 865-869.	3.7	9
92	The mechanisms for spontaneous grain refinement in undercooled Cuâ€“O and Cuâ€“Sn melts. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2001, 304-306, 262-266.	5.6	21
93	The Effects of Fluid Flow During Rapid Dendritic Solidification. Advanced Engineering Materials, 2000, 2, 597-600.	3.5	2
94	Title is missing!. Journal of Materials Science, 2000, 35, 1365-1373.	3.7	53
95	Semi-solid processing of the analogue casting system NH4Cl-H2O. Scripta Materialia, 1998, 39, 147-152.	5.2	7
96	Grain refinement and growth instability in undercooled alloys at low undercooling. Journal of Applied Physics, 1998, 84, 4905-4910.	2.5	21
97	Grain refinement and the stability of dendrites growing into undercooled pure metals and alloys. Journal of Applied Physics, 1997, 82, 3783-3790.	2.5	130
98	Rapid solidification and a finite velocity for the propagation of heat. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1997, 226-228, 28-32.	5.6	10
99	A model for spontaneous grain refinement in alloy systems at low undercooling. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1997, 226-228, 804-808.	5.6	5
100	Rapid solidification within the framework of a hyperbolic conduction model. International Journal of Heat and Mass Transfer, 1997, 40, 4085-4094.	4.8	29
101	A free boundary model for shape preserving dendritic growth at high undercooling. Journal of Applied Physics, 1996, 80, 4129-4136.	2.5	6
102	A numerical model for the calculation of the growth velocity of nonisothermal parabolic dendrites. Journal of Applied Physics, 1995, 78, 4137-4143.	2.5	8
103	Natural convection in porous, permeable media: sheets, wedges and lenses. Marine and Petroleum Geology, 1995, 12, 17-25.	3.3	12
104	A Mechanism For the Generation of the Lunar-Mare Basalts. Geophysical Journal International, 1993, 114, 196-208.	2.4	2
105	Determination of the rate-limiting mechanism for quartz pressure dissolution. Geochimica Et Cosmochimica Acta, 1993, 57, 1499-1503.	3.9	24
106	A numerical model for porosity modification at a sandstone-mudstone boundary by quartz pressure dissolution and diffusive mass transfer. Sedimentology, 1992, 39, 99-107.	3.1	24
107	An investigation of the depth of excavation and thickness of basalt fill for the lunar mascon basins. Geophysical Journal International, 1992, 109, 233-239.	2.4	3
108	The role of silica precipitation kinetics in determining the rate of quartz pressure solution. Journal of Geophysical Research, 1991, 96, 10007-10013.	3.3	35

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109	Depth of basalt fill and transient crater geometry for the Imbrium mascon basin. Geophysical Journal International, 1991, 105, 777-781.	2.4	2
110	A Numerical Model for Porosity Modification at a Sandstoneâ€“Mudstone Boundary by Quartz Pressure Dissolution and Diffusive Mass Transfer. , 0, , 365-373.		0
111	Towards a 3-Dimensional Phase-Field Model of Non-Isothermal Alloy Solidification. Materials Science Forum, 0, 783-786, 2166-2171.	0.3	1
112	Thermo-Solutal Modelling of Microstructure Formation during Multiphase Alloy Solidification - a New Approach. Materials Science Forum, 0, 790-791, 103-108.	0.3	0
113	Dendritic Growth of Rapid-Solidified Eutectic High-Entropy Alloy. Materials Science Forum, 0, 1035, 46-50.	0.3	0
114	The Development of Plate and Lath Morphology in Ni5Ge3. Physics of Metals and Metallography, 0, , 1.	1.0	0
115	Thermal transitions in metastable Cu â€“ 68.5 at. % Co alloy.. Canadian Journal of Chemistry, 0, , .	1.1	0