Alan J Ardell

List of Publications by Year
in descending order

#	Article	IF	Citations
1	The effect of volume fraction on particle coarsening: theoretical considerations. Acta Metallurgica, 1972, 20, 61-71.	2.1	771
2	On the modulated structure of aged Ni-Al alloys. Acta Metallurgica, 1966, 14, 1295-1309.	2.1	615
3	The coarsening of Î³' in Ni-Al alloys. Journal of Physics and Chemistry of Solids, 1966, 27, 1793-1794.	4.0	311
4	On the coarsening of grain boundary precipitates. Acta Metallurgica, 1972, 20, 601-609.	2.1	260
5	Trans-interface diffusion-controlled coarsening. Nature Materials, 2005, 4, 309-316.	27.5	230
6	Three-dimensional phase-field simulations of coarsening kinetics of Î³â€² particles in binary Niâ€"Al alloys. Acta Materialia, 2004, 52, 2837-2845.	7.9	196
7	An application of the theory of particle coarsening: The Î³' precipitate in Niî—¸Al alloys. Acta Metallurgica, 1968, 16, 511-516.	2.1	192
8	Precipitation of Al3Sc in binary Alâ€"Sc alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2001, 318, 144-154.	5.6	188
9	The coarsening of Î³' precipitates at large volume fractions. Acta Metallurgica, 1974, 22, 577-588.	2.1	176
10	The coarsening behavior of the Î³â€² precipitate in nickel-silicon alloys. Acta Metallurgica, 1971, 19, 321-330.	2.1	159
11	Addition rules and the contribution of Î´' precipitates to strengthening of aged Alî—¸Liî—¸Cu alloys. Acta Metallurgica, 1988, 36, 2995-3006.	2.1	112
12	Radiation-induced solute segregation in metallic alloys. Current Opinion in Solid State and Materials Science, 2016, 20, 115-139.	11.5	95
13	The coherent solubilities of Î³â€² in Ni-Al, Ni-Si AND Ni-Ti alloys. Acta Metallurgica, 1969, 17, 595-602.	2.1	92
14	Morphological evolution of coherent misfitting precipitates in anisotropic elastic media. Physical Review Letters, 1993, 70, 2305-2308.	7.8	92
15	Correlation between microstructure and calorimetric behavior of aluminum alloy 7075 and Alî—¸Znî—¸Mg alloys in various tempers. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1989, 114, 197-203.	5.6	75
16	Interfacial free energies and solute diffusivities from data on Ostwald ripening. Journal of Materials Science, 1995, 3, 119.	1.2	74
17	Late-stage two-dimensional coarsening of circular clusters. Physical Review B, 1990, 41, 2554-2556.	3.2	71
18	On the calculation of melting temperatures for low-temperature phases of polymorphic metals. Acta Metallurgica, 1963, 11, 591-594.	2.1	70

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19	Microchemical analysis of precipitate free zones in 7075-A1 in the T6, T7 and RRA tempers. Acta Metallurgica Et Materialia, 1991, 39, 591-598.	1.8	64
20	Precipitate microstructure of peak-aged 7075 Al. Scripta Metallurgica, 1988, 22, 1115-1119.	1.2	61
21	Anomalous coarsening behavior of small volume fractions of Ni3Al precipitates in binary Niî—¸Al alloys. Acta Metallurgica Et Materialia, 1992, 40, 2661-2667.	1.8	57
22	Coarsening of Î³â€² in Niâ€“Al alloys aged under uniaxial compression: II. Diffusion under stress and retardation of coarsening kinetics. Acta Materialia, 2003, 51, 5013-5019.	7.9	57
23	A dislocation network theory of Harper-Dorn creepâ€"I. Steady state creep of monocrystalline Al. Acta Metallurgica, 1986, 34, 2411-2423.	2.1	55
24	A1-L12 interfacial free energies from data on coarsening in five binary Ni alloys, informed by thermodynamic phase diagram assessments. Journal of Materials Science, 2011, 46, 4832-4849.	3.7	55
25	Observations on the effect of volume fraction on the coarsening of Î³â€² precipitates in binary Niî—¸Al alloys. Scripta Metallurgica Et Materialia, 1990, 24, 343-346.	1.0	53
26	Gradient energy, interfacial energy and interface width. Scripta Materialia, 2012, 66, 423-426.	5.2	53
27	Precipitation hardening of Ni-12.19 at.% Al alloy single crystals. Acta Metallurgica, 1975, 23, 513-520.	2.1	48
28	Elastic interactions and their effect on Î³' precipitate shapes in aged dilute Ni-Al alloys. Scripta Metallurgica Et Materialia, 1992, 26, 347-352.	1.0	48
29	Precipitation at grain boundaries in the commercial alloy Al 7075. Acta Metallurgica, 1986, 34, 2399-2409.	2.1	47
30	Coarsening of Î³ (Niâ€“Al solid solution) precipitates in a Î³â€² (Ni3Al) matrix. Acta Materialia, 2007, 55, 4419-4427.	7.9	46
31	Trans-interface-diffusion-controlled coarsening of Î³â€² precipitates in ternary Niâ€“Alâ€“Cr alloys. Acta Materialia, 2013, 61, 7828-7840.	7.9	45
32	Quantitative predictions of the trans-interface diffusion-controlled theory of particle coarsening. Acta Materialia, 2010, 58, 4325-4331.	7.9	44
33	Temporal behavior of the number density of particles during Ostwald ripening. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1997, 238, 108-120.	5.6	42
34	The effects of elastic interactions on precipitate microstructural evolution in elastically inhomogeneous nickel-base alloys. Philosophical Magazine, 2014, 94, 2101-2130.	1.6	42
35	Dislocation link-length statistics and elevated temperature deformation of crystals. Mechanics of Materials, 1984, 3, 319-332.	3.2	41
36	Effect of heat treatment on precipitation behaviour in a Cu-Ni-Si-P alloy. Journal of Materials Science, 1986, 21, 1357-1362.	3.7	41

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37	Precipitation strengthening of binary Alî—¸Li alloys by Î´â€² precipitates. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1988, 104, 149-156.	5.6	41
38	Scaling characteristics of dislocation link length distributions generated during the creep of crystals. Acta Metallurgica, 1989, 37, 739-748.	2.1	38
39	Coarsening of Ni3Si precipitates at volume fractions from 0.03 to 0.30. Acta Materialia, 1998, 46, 5907-5916.	7.9	38
40	Coarsening of Î³â€² in Ni-Al alloys aged under uniaxial compression: III. Characterization of the morphology. Acta Materialia, 2003, 51, 5021-5036.	7.9	38
41	Role of volume fraction in the coarsening of Ni3Si precipitates in binary Niî—¸Si alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1994, 185, 153-163.	5.6	36
42	Coarsening of Ni3Ge in binary Niâ€“Ge alloys: microstructures and volume fraction dependence of kinetics. Acta Materialia, 2003, 51, 4073-4082.	7.9	36
43	Microstructural stability at elevated temperatures. Journal of the European Ceramic Society, 1999, 19, 2217-2231.	5.7	33
44	Antiphase boundary energies and the transition from shearing to looping in alloys strengthened by ordered precipitates. Philosophical Magazine Letters, 1988, 58, 189-197.	1.2	31
45	Measurement of the fracture toughness of CVD-grown ZnS using a miniaturized disk-bend test. Journal of Materials Research, 1991, 6, 1950-1957.	2.6	31
46	Coarsening of Î³â€² in Niâ€“Al alloys aged under uniaxial compression: I. Early-stage kinetics. Acta Materialia, 2003, 51, 5001-5012.	7.9	30
47	Microstructure and transient creep in an austenitic stainless steel. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1979, 39, 65-73.	0.6	29
48	Coarsening of Ni3Si precipitates in binary Niî—¸Si alloys at intermediate to large volume fractions. Acta Materialia, 1997, 45, 1393-1400.	7.9	27
49	Trans-interface-diffusion-controlled coarsening in ternary alloys. Acta Materialia, 2013, 61, 7749-7754.	7.9	27
50	Structural comparison of amorphous Cu50Zr50 alloys prepared by proton irradiation, melt spinning, and mechanical alloying. Journal of Applied Physics, 1988, 64, 4772-4774.	2.5	26
51	Optimization of Test Parameters for Quantitative Stress Measurements Using the Miniaturized Disk-Bend Test. Journal of Testing and Evaluation, 1993, 21, 263-271.	0.7	26
52	Void ordering in nitrogen-ion irradiated nickelâ€"aluminum solid solutions. Journal of Nuclear Materials, 1978, 75, 177-185.	2.7	24
53	HARPER-DORN CREEPâ€"PREDICTIONS OF THE DISLOCATION NETWORK THEORY OF HIGH TEMPERATURE DEFORMATION. Acta Materialia, 1997, 45, 2971-2981.	7.9	24
54	The (Î³ + Î³â€²)/Î³â€² phase boundary in the Niâ€“Al phase diagram from 600 to 1200Â°C. International Journal of Materials Research, 2003, 94, 972-975.	0.8	24

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55	On the modeling of irradiation-induced homogeneous precipitation in proton-bombarded Ni-Si solid solutions. Journal of Nuclear Materials, 1981, 101, 314-325.	2.7	23
56	Solid-state phase equilibria in the ZnS-CdS system. Materials Research Bulletin, 1988, 23, 1667-1673.	5.2	23
57	Statistics of Jogs on Dislocations at Equilibrium. Journal of Applied Physics, 1965, 36, 1727-1732.	2.5	22
58	Mechanical properties of individual grain boubdaries in Ni3Al using a miniaturized disk-bend test. Acta Metallurgica Et Materialia, 1993, 41, 2601-2610.	1.8	19
59	Microstructure and coarsening kinetics of Ni3Ge precipitates in aged NiGe alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1994, 183, 169-179.	5.6	19
60	Coherent equilibrium in alloys containing spherical precipitates. Acta Metallurgica Et Materialia, 1995, 43, 1825-1835.	1.8	19
61	The Ni-Ni3Al phase diagram: thermodynamic modelling and the requirements of coherent equilibrium. Modelling and Simulation in Materials Science and Engineering, 2000, 8, 277-286.	2.0	18
62	Coarsening behavior of Ni3Ga precipitates in Ni-Ga alloys: Dependence of microstructure and kinetics on volume fraction. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2004, 35, 3063-3069.	2.2	18
63	Measurement of the Fracture Toughness of Ceramic Materials Using a Miniaturized Disk-Bend Test. Journal of the American Ceramic Society, 1993, 76, 1340-1344.	3.8	17
64	Elastic constants of face-centered cubic and L12 Ni-Si alloys: Composition and temperature dependence. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2003, 34, 1863-1868.	2.2	17
65	Two-Dimensional Ostwald Ripening in Symmetric Diblock Copolymer Films. Physical Review Letters, 1995, 74, 4960-4960.	7.8	15
66	Ripening of L12Ni3Ti precipitates in the framework of the trans-interface diffusion-controlled theory of particle coarsening. International Journal of Materials Research, 2006, 97, 295-302.	0.8	15
67	The effect of particle size distributions on the CRSS of aged Niî—¸Al alloys. Acta Metallurgica, 1976, 24, 827-833.	2.1	14
68	On the stability of the ordered Pd8V phase in a proton-irradiated Pd-15at.%V alloy. Journal of the Less Common Metals, 1988, 141, 45-53.	0.8	14
69	Trans-interface-diffusion-controlled coarsening of Î³â€² particles in Niâ€"Al alloys: commentaries and analyses of recent data. Journal of Materials Science, 2020, 55, 14588-14610.	3.7	14
70	On diffraction contrast effects at extrinsic grain boundary dislocations. Physica Status Solidi A, 1973, 18, 407-417.	1.7	13
71	The formation of Pd8Mo in proton-irradiated Pd-Mo solid solutions. Materials Letters, 1987, 6, 67-70.	2.6	13
72	Solid-State Phase Equilibria in the ZnS-Ga2S3 System. Journal of the American Ceramic Society, 1990, 73, 1544-1547.	3.8	13

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73	Coarsening kinetics and microstructure of Ni3Ga precipitates in aged Niî—¸Ga alloys. Journal of Alloys and Compounds, 1994, 205, 215-223.	5.5	13
74	Disorder strengthening of ordered L1 2 alloys by face centered cubic (A1) precipitates. Intermetallics, 2017, 88, 81-90.	3.9	13
75	A phenomenological theory of transient creep. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1979, 39, 75-90.	0.6	12
76	Antiphase domain growth in Cu3Au: Quantitative comparison between theory and experiment. Acta Metallurgica, 1979, 27, 1261-1269.	2.1	12
77	Order hardening: comparison between revised theory and experiment. Metal Science, 1980, 14, 221-224.	0.7	12
78	Fractographic fingerprinting of proton-irradiation-induced disordering and amorphization of intermetallic compounds. Journal of Materials Research, 1989, 4, 565-578.	2.6	12
79	Mechanical behaviour of both sides of an amorphous Fe78B14Si8 alloy ribbon as determined from miniaturized disk-bend tests. Acta Metallurgica Et Materialia, 1992, 40, 3167-3177.	1.8	12
80	Non-integer temporal exponents in trans-interface diffusion-controlled coarsening. Journal of Materials Science, 2016, 51, 6133-6148.	3.7	12
81	Fracture toughness of ceramics and semi-brittle alloys using a miniaturized disk-bend test. Materials Research Innovations, 2000, 3, 250-262.	2.3	11
82	Coarsening of Niâ€"Ge solid-solution precipitates in â€œinverseâ€•Ni3Ge alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2012, 550, 66-75.	5.6	10
83	Temperature Dependence of the Î³/Î³â€² Interfacial Energy in Binary Niâ€"Al Alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2021, 52, 5182-5199.	2.2	10
84	Particle range and energy deposition in materials containing voids. Radiation Effects, 1974, 22, 217-223.	0.4	9
85	The incoherent Î³/Î³â€² solvus in Ni-Al alloys. Journal of Phase Equilibria and Diffusion, 1998, 19, 334-339.	0.3	9
86	The observation of multiple-layer loops in nickel base alloys under ion bombardment. Physica Status Solidi A, 1976, 34, 679-690.	1.7	8
87	The structure of amorphous Ni 50 Ti 50 alloys prepared by proton irradiation and mechanical alloying. Journal of Non-Crystalline Solids, 1988, 106, 81-84.	3.1	8
88	Mechanical behavior of ion-irradiated ordered intermetallic compounds. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1992, 152, 212-226.	5.6	8
89	Chemical diffusion in hypostoichiometric Ni3Al from data on coarsening of Niâ€"Al solid solution precipitates. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 516, 259-262.	5.6	8
90	The Nickel-Rich Region of the Ni-Ge Phase Diagram. Journal of Phase Equilibria and Diffusion, 2012, 33, 4-8.	1.4	8

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91	Harperâ€"Dorn creep â€" The dislocation network theory revisited. Scripta Materialia, 2013, 69, 541-544.	5.2	8
92	The mechanism of overaging in Cu3Au-1.5 at.% Co alloy single crystals. Materials Science and Engineering, 1978, 36, 139-143.	0.1	7
93	Coarsening of Ni3Ge precipitates in Niâ€"Ge alloys aged under uniaxial compression. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2005, 397, 264-270.	5.6	7
94	Observations on the precipitation-hardening of a Cu3Auî—¸Co alloy. Materials Science and Engineering, 1972, 9, 163-174.	0.1	6
95	Hardening mechanisms in underaged ordered and disordered Cu3Au-Co alloy single crystals. Acta Metallurgica, 1977, 25, 1231-1240.	2.1	6
96	Enhanced ordering of Pd8Mo and induced solute segregation in proton-irradiated Pdî—¸Mo alloys. Journal of the Less Common Metals, 1988, 143, 251-263.	0.8	6
97	Solid solution strengthening of ZnS. , 1990, , .		6
98	Dislocation Mobility and the Steadyâ€State Creep of Crystals with Special Reference to Î± Zirconium. Journal of Applied Physics, 1966, 37, 2910-2911.	2.5	5
99	Irradiation damage in proton irradiated palladium-iron solid solutions. Journal of Nuclear Materials, 1983, 114, 66-74.	2.7	5
100	Dynamic recovery during compression testing of monocrystalline NaCl at elevated temperatures. Materials Science and Engineering, 1987, 92, 63-70.	0.1	5
101	Latent hardening behavior of monocrystalline Al-Mg solid solution. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1997, 28, 2353-2360.	2.2	5
102	Fracture toughness of Tiî—¸46.5Alî—¸2.1Crî—¸3.0Nbî—¸0.2W from finite element analysis of miniaturized disk-bend test results. Intermetallics, 1998, 6, 471-477.	3.9	5
103	The elastic constants of FCC Niâ€"Ga and Niâ€"Ge alloys up to 1100K. Scripta Materialia, 2006, 54, 1327-1330.	5.2	5
104	Reply to â€œcomments on â€˜further applications of the theory of particle coarseningâ€™â€. Scripta Metallurgica, 1968, 2, 173-176.	1.2	4
105	Enhanced ordering and stability of Pd8W in proton irradiated Pd-W alloys. Acta Metallurgica, 1989, 37, 1891-1902.	2.1	4
106	Anomalous coarsening of small volume fractions of Ni3Al precipitates: An explanation of inhomogeneous dispersions observed at small undercoolings. Scripta Metallurgica Et Materialia, 1992, 27, 943-946.	1.0	4
107	The effects of heat treatment and purity on the mechanical properties of monocrystalline NiAl. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1995, 192-193, 333-339.	5.6	4
108	Measurement of the fracture toughness of Ni3Ge using small disk-shaped specimens. Intermetallics, 1995, 3, 397-404.	3.9	4

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109	Solute-enriched surface layers and X-ray microanalysis of thin foils of a commercial aluminium alloy. Journal of Microscopy, 1992, 165, 301-309.	1.8	3
110	Long-range order in Cu3Au and dilute Cu3Auâ€“Co alloys. Journal of Applied Crystallography, 1977, 10, 468-472.	4.5	2
111	Crystallization of amorphous Ni35Zr65 and Fe40Ni40P14B6 under proton irradiation. Journal of Non-Crystalline Solids, 1984, 65, 73-86.	3.1	2
112	Coarsening of Î³ (Ni-Al Solid Solution) Precipitates in a Î³' (Ni₃Al) Matrix: Preliminary Results. Materials Science Forum, 2003, 442, 1-6.	0.3	2
113	The roles of auxeticity and volume fraction on Î³â€² precipitate microstructures in nickel-base alloys. Philosophical Magazine Letters, 2017, 97, 35-42.	1.2	2
114	Coarsening of solid<i>Î²</i>-Sn particles in liquid Pb-Sn alloys: Reinterpretation of experimental data in the framework of trans-interface-diffusion-controlled coarsening. Physical Review Materials, 2021, 5, .	2.4	2
115	Coarsening of skeletal microstructures: Re-examination of data on Pseudo-Skeletal Î³â€² precipitate coarsening in binary Ni-Al Alloys. Scripta Materialia, 2022, 215, 114693.	5.2	2
116	Fracture Strengths of Individual Grain Boundaries in Ni3Ai Using a Miniaturized Disk Bend Test. Materials Research Society Symposia Proceedings, 1991, 238, 375.	0.1	1
117	Observation of rod-shaped T1 precipitates in an Al-Li-Cu alloy. Scripta Metallurgica Et Materialia, 1992, 26, 1759-1762.	1.0	1
118	Retardation of the Coarsening Kinetics in Ni-Al and Ni-Ge Alloys Under Uniaxial Elastic Strain. Microscopy and Microanalysis, 2004, 10, 696-697.	0.4	1
119	Mechanical behavior of ion-irradiated ordered intermetallic compounds. , 1992, , 212-226.		1
120	The (Î³ + Î³â€²)/Î³â€² phase boundary in the Niâ€“Al phase diagram from 600 to 1200 Â° C. International Journal of Materials Research, 2022, 94, 972-975.	0.3	1
121	Splitting of Î³â€² Precipitates in the Context of Phase Equilibrium. Journal of Phase Equilibria and Diffusion, 2022, 43, 660-676.	1.4	1
122	Ripening of L1₂ Ni₃Ti precipitates in the framework of the trans-interface diffusion-controlled theory of particle coarsening. International Journal of Materials Research, 2022, 97, 295-303.	0.3	1
123	Mechanical Behavior of Monocrystalline NiAl Using A Miniaturized Disk-Bend Test. Materials Research Society Symposia Proceedings, 1992, 288, 641.	0.1	0
124	Preferential cleavage planes in biaxially stressed, vickers-indented NiAl monocrystals. Scripta Materialia, 1996, 34, 1107-1113.	5.2	0
125	The Effect of Volume Fraction on Î³â€™ (Ni3Si) Precipitate Coarsening In Ni-Si Alloys. NATO ASI Series Series B: Physics, 1994, , 215-218.	0.2	0