Daniel B Miracle

List of Publications by Year
in descending order

128 papers	24,153 citations	30047 54 h-index	18115 120 g-index
131 all docs	131 docs citations	131 times ranked	9526 citing authors

#	Article	IF	Citations
1	A critical review of high entropy alloys and related concepts. Acta Materialia, 2017, 122, 448-511.	3.8	5,208
2	Mechanical properties of Nb25Mo25Ta25W25 and V20Nb20Mo20Ta20W20 refractory high entropy alloys. Intermetallics, 2011, 19, 698-706.	1.8	2,013
3	Refractory high-entropy alloys. Intermetallics, 2010, 18, 1758-1765.	1.8	1,792
4	Metal matrix composites â€“ From science to technological significance. Composites Science and Technology, 2005, 65, 2526-2540.	3.8	1,498
5	Microstructure and room temperature properties of a high-entropy TaNbHfZrTi alloy. Journal of Alloys and Compounds, 2011, 509, 6043-6048.	2.8	1,167
6	A structural model for metallic glasses. Nature Materials, 2004, 3, 697-702.	13.3	1,120
7	Development and exploration of refractory high entropy alloysâ€"A review. Journal of Materials Research, 2018, 33, 3092-3128.	1.2	854
8	Exploration and Development of High Entropy Alloys for Structural Applications. Entropy, 2014, 16, 494-525.	1.1	704
9	Microstructure and elevated temperature properties of a refractory TaNbHfZrTi alloy. Journal of Materials Science, 2012, 47, 4062-4074.	1.7	596
10	Accelerated exploration of multi-principal element alloys with solid solution phases. Nature Communications, 2015, 6, 6529.	5.8	591
11	Low-density, refractory multi-principal element alloys of the Crâ€“Nbâ€“Tiâ€“Vâ€“Zr system: Microstructure and phase analysis. Acta Materialia, 2013, 61, 1545-1557.	3.8	480
12	Effect of the atomic size distribution on glass forming ability of amorphous metallic alloys. Materials Research Bulletin, 2001, 36, 2183-2198.	2.7	478
13	Mechanical properties of low-density, refractory multi-principal element alloys of the Crâ€“Nbâ€“Tiâ€“Vâ€“Zr system. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 565, 51-62.	2.6	452
14	Microstructural effects on the mechanical behavior of B-modified Tiâ€“6Alâ€“4V alloys. Acta Materialia, 2007, 55, 4983-4993.	3.8	380
15	Microstructure and Properties of Aluminum-Containing Refractory High-Entropy Alloys. Jom, 2014, 66, 2030-2042.	0.9	306
16	Mapping the world of complex concentrated alloys. Acta Materialia, 2017, 135, 177-187.	3.8	271
17	High entropy alloys as a bold step forward in alloy development. Nature Communications, 2019, 10, 1805.	5.8	256
18	Part I. The microstructural evolution in Ti-Al-Nb O+Bcc orthorhombic alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1999, 30, 2305-2323.	1.1	252

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19	Precipitation of Al3(Sc,Zr) particles in an Alâ€"Znâ€"Mgâ€"Cuâ€"Scâ€"Zr alloy during conventional solution heat treatment and its effect on tensile properties. Acta Materialia, 2008, 56, 3723-3738.	3.8	221
20	Oxidation behavior of a refractory NbCrMo0.5Ta0.5TiZr alloy. Journal of Materials Science, 2012, 47, 6522-6534.	1.7	214
21	High-entropy functional materials. Journal of Materials Research, 2018, 33, 3138-3155.	1.2	186
22	Accelerated exploration of multi-principal element alloys for structural applications. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2015, 50, 32-48.	0.7	185
23	Database on the mechanical properties of high entropy alloys and complex concentrated alloys. Data in Brief, 2018, 21, 2664-2678.	0.5	180
24	A new thermodynamic parameter to predict formation of solid solution or intermetallic phases in high entropy alloys. Journal of Alloys and Compounds, 2016, 658, 603-607.	2.8	173
25	Structural Aspects of Metallic Glasses. MRS Bulletin, 2007, 32, 629-634.	1.7	162
26	From high-entropy alloys to complex concentrated alloys. Comptes Rendus Physique, 2018, 19, 721-736.	0.3	154
27	Atomistic simulations of dislocations in a model BCC multicomponent concentrated solid solution alloy. Acta Materialia, 2017, 125, 311-320.	3.8	148
28	Microstructural Design for Improving Ductility of An Initially Brittle Refractory High Entropy Alloy. Scientific Reports, 2018, 8, 8816.	1.6	138
29	Critical Assessment 14: High entropy alloys and their development as structural materials. Materials Science and Technology, 2015, 31, 1142-1147.	0.8	133
30	Phase inversion in a two-phase, BCC+B2, refractory high entropy alloy. Acta Materialia, 2020, 185, 89-97.	3.8	128
31	A predictive structural model for bulk metallic glasses. Nature Communications, 2015, 6, 8123.	5.8	121
32	An assessment of binary metallic glasses: correlations between structure, glass forming ability and stability. International Materials Reviews, 2010, 55, 218-256.	9.4	120
33	The influence of trace boron addition on grain growth kinetics of the beta phase in the beta titanium alloy Tiâ€"15Moâ€"2.6Nbâ€"3Alâ€"0.2Si. Scripta Materialia, 2009, 60, 496-499.	2.6	117
34	Refractory high entropy superalloys (RSAs). Scripta Materialia, 2020, 187, 445-452.	2.6	111
35	Thermal stability of nanostructured Al93Fe3Cr2Ti2 alloys prepared via mechanical alloying. Acta Materialia, 2003, 51, 2647-2663.	3.8	110
36	Shear band melting and serrated flow in metallic glasses. Applied Physics Letters, 2008, 93, .	1.5	109

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37	Comprehensive data compilation on the mechanical properties of refractory high-entropy alloys. Data in Brief, 2018, 21, 1622-1641.	0.5	105
38	Effects of process-control agents on mechanical alloying of nanostructured aluminum alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2003, 34, 159-170.	1.1	103
39	Compaction of amorphous aluminum alloy powder by direct extrusion and equal channel angular extrusion. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2005, 393, 12-21.	2.6	96
40	High-Entropy Alloys: A Current Evaluation of Founding Ideas and Core Effects and Exploring â€œNonlinear Alloysâ€. Jom, 2017, 69, 2130-2136.	0.9	94
41	Part II. The creep behavior of Ti-Al-Nb O+bcc orthorhombic alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1999, 30, 2349-2367.	1.1	85
42	Topological criterion for metallic glass formation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2003, 347, 50-58.	2.6	80
43	Phase stability as a function of temperature in a refractory high-entropy alloy. Journal of Materials Research, 2018, 33, 3235-3246.	1.2	80
44	New strategies and tests to accelerate discovery and development of multi-principal element structural alloys. Scripta Materialia, 2017, 127, 195-200.	2.6	78
45	Composition range and glass forming ability of ternary Caâ€“Mgâ€“Cu bulk metallic glasses. Journal of Alloys and Compounds, 2006, 424, 394-399.	2.8	66
46	Direct rolling of as-cast Tiâ€“6Alâ€“4V modified with trace additions of boron. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 487, 541-551.	2.6	66
47	Development and characterization of Caâ€“Mgâ€“Znâ€“Cu bulk metallic glasses. Intermetallics, 2006, 14, 1055-1060.	1.8	63
48	A topological model for metallic glass formation. Journal of Non-Crystalline Solids, 2003, 317, 34-39.	1.5	62
49	Candidate Atomic Cluster Configurations in Metallic Glass Structures. Materials Transactions, 2006, 47, 1737-1742.	0.4	62
50	A geometric model for atomic configurations in amorphous Al alloys. Journal of Non-Crystalline Solids, 2003, 319, 174-191.	1.5	61
51	Deformation and fracture of a particle-reinforced aluminum alloy composite: Part I. Experiments. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2000, 31, 921-936.	1.1	59
52	Processing, Microstructure, and Properties of Î² Titanium Alloys Modified With Boron. Journal of Materials Engineering and Performance, 2005, 14, 741-746.	1.2	59
53	Nickel-aluminum-molybdenum phase equilibria. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1984, 15, 481-486.	1.4	58
54	Sustainability through alloy design: Challenges and opportunities. Progress in Materials Science, 2021, 117, 100722.	16.0	58

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55	Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic ti-alloy-based composite. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1997, 28, 309-323.	1.1	56
56	Expanded dataset of mechanical properties and observed phases of multi-principal element alloys. Scientific Data, 2020, 7, 430.	2.4	54
57	Theory of solid solution strengthening of BCC Chemically Complex Alloys. Acta Materialia, 2021, 209, 116758.	3.8	54
58	Elastic properties of the O phase in Ti-Al-Nb alloys. Intermetallics, 1997, 5, 147-156.	1.8	51
59	The influence of Zr alloying on the structure and properties of Al 3 Ti. Intermetallics, 2003, 11, 241-249.	1.8	49
60	Equal channel angular extrusion compaction of semi-amorphous Al85Ni10Y2.5La2.5 alloy powder. Journal of Alloys and Compounds, 2004, 365, 126-133.	2.8	49
61	Crucial role of sidewalls in velocity distributions in quasi-two-dimensional granular gases. Physical Review E, 2004, 70, 040301.	0.8	48
62	Processing, Microstructure, Texture, and Tensile Properties of the Ti-6Al-4V-1.55B Eutectic Alloy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2008, 39, 402-416.	1.1	48
63	Topological criteria for amorphization based on a thermodynamic approach. Journal of Applied Physics, 2005, 97, 103502.	1.1	46
64	Microstructures and mechanical behavior of NiAl-Mo and NiAl-Mo-Ti two-phase alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1994, 25, 2769-2781.	1.1	45
65	Local atomic structure of Ca-Mg-Zn metallic glasses. Physical Review B, 2010, 82, .	1.1	44
66	An assessment of the thermal stability of refractory high entropy superalloys. Journal of Alloys and Compounds, 2021, 857, 157583.	2.8	42
67	Heat-Treatment Effects on the Microstructure and Tensile Properties of Powder Metallurgy Ti-6Al-4V Alloys Modified with Boron. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2010, 41, 1003-1015.	1.1	40
68	Comparative analysis of glass-formation in binary, ternary, and multicomponent alloys. Journal of Applied Physics, 2010, 108, 103511.	1.1	40
69	Icosahedral and dense random cluster packing in metallic glass structures. Journal of Non-Crystalline Solids, 2008, 354, 4049-4055.	1.5	38
70	Interface effects on the micromechanical response of a transversely loaded single fiber SCS-6/Ti-6Al-4V composite. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1996, 27, 2035-2043.	1.1	37
71	Thermodynamic analysis of glass-forming ability in a Ca-Mg-Zn ternary alloy system. Physical Review B, 2006, 73, .	1.1	37
72	Glass forming ranges of Alâ€“rare earth metal alloys: thermodynamic and kinetic analysis. Scripta Materialia, 2004, 50, 987-991.	2.6	35

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73	The density and packing fraction of binary metallic glasses. Acta Materialia, 2013, 61, 3157-3171.	3.8	35
74	The influence of reinforcement morphology on the tensile response of 6061/SiC/25p discontinuously-reinforced aluminum. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2003, 357, 111-123.	2.6	33
75	The melting diagram of the Ti-corner of the Tiâ€“Zrâ€“Si system and mechanical properties of as-cast compositions. Journal of Alloys and Compounds, 2004, 384, 106-114.	2.8	33
76	Mechanical and Fatigue Behavior of Ca₆₅Mg₁₅Zn₂₀ Bulkâ€Metallic Glass. Advanced Engineering Materials, 2009, 11, 27-34.	1.6	33
77	Compressive behavior of an extruded nanocrystalline Alâ€“Feâ€“Crâ€“Ti alloy. Scripta Materialia, 2004, 50, 921-925.	2.6	32
78	Cryogenic and elevated temperature strengths of an Alâˆ’Znâˆ’Mgâˆ’Cu alloy modified with Sc and Zr. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2006, 37, 3569-3575.	1.1	32
79	Electrochemical behavior of Ca-based bulk metallic glasses. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2006, 37, 1239-1245.	1.1	31
80	Rolling of Plates and Sheets from As-Cast Ti-6Al-4V-0.1B. Journal of Materials Engineering and Performance, 2009, 18, 390-398.	1.2	31
81	Atomic structure of Ca40+XMg25Cu35âˆ’X metallic glasses. Journal of Applied Physics, 2012, 111, .	1.1	30
82	On tension/compression asymmetry of an extruded nanocrystalline Alâ€“Feâ€“Crâ€“Ti alloy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2005, 409, 249-256.	2.6	29
83	A Physical Model for Metallic Glass Structures: An Introduction and Update. Jom, 2012, 64, 846-855.	0.9	29
84	Corrosion Properties of Ca Based Bulk Metallic Glasses. Materials Transactions, 2007, 48, 1850-1854.	0.4	28
85	Effects of thickness and precracking on the fracture toughness of particle-reinforced al-alloy composites. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1998, 29, 1237-1243.	1.1	27
86	Localized Einstein modes in Ca-based bulk metallic glasses. Philosophical Magazine, 2007, 87, 503-508.	0.7	25
87	Correlation of Measured Load-Displacement Curves in Small Punch Tests with Tensile Stress-Strain Curves. Acta Materialia, 2021, 204, 116501.	3.8	25
88	Powder metallurgy Ti-6Al-4V-xB alloys: Processing, microstructure, and properties. Jom, 2004, 56, 60-63.	0.9	24
89	Emerging Capabilities for the High-Throughput Characterization of Structural Materials. Annual Review of Materials Research, 2021, 51, 131-164.	4.3	24
90	Microstructure engineering of titanium alloys via small boron additions. International Journal of Advances in Engineering Sciences and Applied Mathematics, 2010, 2, 168-180.	0.7	23

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91	Effects of internal strains on hardness of nanocrystalline Alâ€"Feâ€"Crâ€"Ti alloys. Scripta Materialia, 2004, 51, 449-453.	2.6	22
92	Development of Low Density Ca-Mg-Al-Based Bulk Metallic Glasses. Materials Transactions, 2007, 48, 1610-1616.	0.4	21
93	Title is missing!. Applied Composite Materials, 1998, 5, 95-108.	1.3	20
94	Microstructure and mechanical behavior of Cr-Cr2Hfin situ intermetallic composites. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1996, 27, 2583-2592.	1.1	19
95	Elastic properties of Ca-based bulk metallic glasses studied by resonant ultrasound spectroscopy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2007, 471, 151-154.	2.6	19
96	Beta Phase Superplasticity in Titanium Alloys by Boron Modification. Journal of Materials Engineering and Performance, 2004, 13, 653-659.	1.2	17
97	Description of the fragile behavior of glass-forming liquids with the use of experimentally accessible parameters. Journal of Non-Crystalline Solids, 2009, 355, 2596-2603.	1.5	17
98	Crystallization kinetics of an amorphous Al85Ni10Y2.5La2.5 alloy. Journal of Alloys and Compounds, 2002, 337, 83-88.	2.8	16
99	A topological basis for bulk glass formation. Acta Materialia, 2007, 55, 4507-4515.	3.8	16
100	A neutron and X-ray diffraction study of Caâ€"Mgâ€"Cu metallic glasses. Intermetallics, 2011, 19, 860-870.	1.8	15
101	Partial Coordination Numbers in Binary Metallic Glasses. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2012, 43, 2649-2661.	1.1	15
102	Transverse creep of SiC/Ti-6Al-4V fiber-reinforced metal matrix composites. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1999, 30, 301-306.	1.1	14
103	Oxidation Behavior of Ca-Based Bulk Amorphous Materials. Materials Transactions, 2007, 48, 1870-1878.	0.4	13
104	Relaxation Behavior of Ca-Based Bulk Metallic Glasses. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2010, 41, 1677-1684.	1.1	13
105	The Duality of Fracture Behavior in a Ca-based Bulk-Metallic Glass. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2011, 42, 1499-1503.	1.1	12
106	A Structural Model for Metallic Glasses. Microscopy and Microanalysis, 2004, 10, 786-787.	0.2	9
107	The microstructural characterization and simulation of titanium alloys modified with boron. Jom, 2007, 59, 59-63.	0.9	9
108	Correlation between thermodynamic and kinetic fragilities in nonpolymeric glass-forming liquids. Journal of Chemical Physics, 2008, 128, 124508.	1.2	9

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109	Application of the cruciform specimen geometry to obtain transverse interface-property data in a high-fiber-volume-fraction SiC/Titanium alloy composite. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2001, 32, 3143-3155.	1.1	8
110	Concomitant Clustering and Ordering Leading to B2â€‰+â€‰BCC Microstructures in Refractory High Entropy Alloys. Transactions of the Indian Institute of Metals, 2022, 75, 907-916.	0.7	7
111	On the relationship between microstructure and acoustic emission in Ti-6Al-4V. Journal of Materials Science, 1995, 30, 4286-4298.	1.7	6
112	Thermomechanical response of a powder metallurgy Tiâˆ’6Alâˆ’4V alloy modified with 2.9 Pct Boron. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2005, 36, 845-857.	1.1	6
113	Noncrystalline compact packings of hard spheres of two sizes: Bipyramids and the geometry of common neighbors. Journal of Chemical Physics, 2009, 130, 114505.	1.2	6
114	Effect of Re on the Microstructure and Mechanical Properties of NbTiZr and TaTiZr Equiatomic Alloys. Metals, 2021, 11, 1819.	1.0	6
115	Deformation and fracture of a particle-reinforced aluminum alloy composite: Part I. Experiments. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2000, 31, 921-936.	1.1	5
116	Intermetallic Matrix Composites. , 2000, , 741-778.		5
117	Fatigue and Fracture Behavior of a Ca-Based Bulk-Metallic Glass. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2010, 41, 1775-1779.	1.1	5
118	Microstructural and mechanical characterization of carbon coatings on SiC fibers. Journal of Materials Research, 2001, 16, 3366-3377.	1.2	4
119	<i>A call to action: High entropy alloy manufacturing</i>. Journal of Materials Research, 2018, 33, 2855-2856.	1.2	4
120	The environmental stability of boron-containing titanium alloys for biomedical applications. Jom, 2011, 63, 42-47.	0.9	3
121	Opportunities and Approaches for Doubling the Structural Efficiency of Metallic Materials. , 2004, , 3-20.		2
122	MICROSTRUCTURE-PROPERTY RELATIONSHIPS OF NANOSTRUCTURED Al-Fe-Cr-Ti ALLOYS. , 2003, , 191-198.		1
123	4.21 Intermetallic Matrix Composites. , 2018, , 482-524.		1
124	Solidification Microstructure and Texture in Grain-Refined Titanium Alloys. , 2009, , 475-482.		1
125	Interface Effects on the Tensile and Fatigue Crack Growth Behavior of Fiber-Reinforced Metal Matrix Composites. Materials Research Society Symposia Proceedings, 1996, 458, 185.	0.1	0
126	Observation of Shear Thickening during Compressive Flow of Mg54Y11Ag7Cu28 in the Supercooled Liquid Region. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2009, 40, 1-3.	1.1	0

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127	Response to â€œComment on â€˜Comparative analysis of glass-formation in binary, ternary, and multicomponent alloys'â€•[J. Appl. Phys. 114, 166101 (2013)]. Journal of Applied Physics, 2013, 114, 166102.	1.1	0
128	Dataset of bond enthalpies (ÎµAA, ÎµAB, ÎµBB) in 975 binary intermetallic compounds. Data in Brief, 2021, 39, 107652.	0.5	0