

Daniel B Miracle

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129
papers

16,944
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50
h-index

130
g-index

131
ext. papers

20,461
ext. citations

4.7
avg. IF

7.69
L-index

#	Paper	IF	Citations
129	A critical review of high entropy alloys and related concepts. <i>Acta Materialia</i> , 2017 , 122, 448-511	8.4	3114
128	Mechanical properties of Nb ₂₅ Mo ₂₅ Ta ₂₅ W ₂₅ and V ₂₀ Nb ₂₀ Mo ₂₀ Ta ₂₀ W ₂₀ refractory high entropy alloys. <i>Intermetallics</i> , 2011 , 19, 698-706	3.5	1349
127	Metal matrix composites IFrom science to technological significance. <i>Composites Science and Technology</i> , 2005 , 65, 2526-2540	8.6	1267
126	Refractory high-entropy alloys. <i>Intermetallics</i> , 2010 , 18, 1758-1765	3.5	1234
125	A structural model for metallic glasses. <i>Nature Materials</i> , 2004 , 3, 697-702	27	991
124	Microstructure and room temperature properties of a high-entropy TaNbHfZrTi alloy. <i>Journal of Alloys and Compounds</i> , 2011 , 509, 6043-6048	5.7	814
123	Exploration and Development of High Entropy Alloys for Structural Applications. <i>Entropy</i> , 2014 , 16, 494-525	5.25	527
122	Accelerated exploration of multi-principal element alloys with solid solution phases. <i>Nature Communications</i> , 2015 , 6, 6529	17.4	440
121	Development and exploration of refractory high entropy alloysA review. <i>Journal of Materials Research</i> , 2018 , 33, 3092-3128	2.5	429
120	Microstructure and elevated temperature properties of a refractory TaNbHfZrTi alloy. <i>Journal of Materials Science</i> , 2012 , 47, 4062-4074	4.3	414
119	Effect of the atomic size distribution on glass forming ability of amorphous metallic alloys. <i>Materials Research Bulletin</i> , 2001 , 36, 2183-2198	5.1	380
118	Low-density, refractory multi-principal element alloys of the CrNbTiVZr system: Microstructure and phase analysis. <i>Acta Materialia</i> , 2013 , 61, 1545-1557	8.4	356
117	Microstructural effects on the mechanical behavior of B-modified TiAlV alloys. <i>Acta Materialia</i> , 2007 , 55, 4983-4993	8.4	300
116	Mechanical properties of low-density, refractory multi-principal element alloys of the CrNbTiVZr system. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2013 , 565, 51-62	5.3	299
115	Microstructure and Properties of Aluminum-Containing Refractory High-Entropy Alloys. <i>Jom</i> , 2014 , 66, 2030-2042	2.1	206
114	Part I. The microstructural evolution in Ti-Al-Nb O+Bcc orthorhombic alloys. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 1999 , 30, 2305-2323	2.3	206
113	Mapping the world of complex concentrated alloys. <i>Acta Materialia</i> , 2017 , 135, 177-187	8.4	187

112	Precipitation of Al ₃ (Sc,Zr) particles in an Al ₇₀ Ni ₁₀ Mg ₁₀ Cu ₅ Sc ₂ Zr alloy during conventional solution heat treatment and its effect on tensile properties. <i>Acta Materialia</i> , 2008 , 56, 3723-3738	8.4	159
111	Oxidation behavior of a refractory NbCrMo _{0.5} Ta _{0.5} TiZr alloy. <i>Journal of Materials Science</i> , 2012 , 47, 6522-6534	15.1	151
110	Structural Aspects of Metallic Glasses. <i>MRS Bulletin</i> , 2007 , 32, 629-634	3.2	147
109	High entropy alloys as a bold step forward in alloy development. <i>Nature Communications</i> , 2019 , 10, 18051	17.4	145
108	Accelerated exploration of multi-principal element alloys for structural applications. <i>Calphad: Computer Coupling of Phase Diagrams and Thermochemistry</i> , 2015 , 50, 32-48	1.9	135
107	A new thermodynamic parameter to predict formation of solid solution or intermetallic phases in high entropy alloys. <i>Journal of Alloys and Compounds</i> , 2016 , 658, 603-607	5.7	128
106	High-entropy functional materials. <i>Journal of Materials Research</i> , 2018 , 33, 3138-3155	2.5	114
105	Critical Assessment 14: High entropy alloys and their development as structural materials. <i>Materials Science and Technology</i> , 2015 , 31, 1142-1147	1.5	104
104	Atomistic simulations of dislocations in a model BCC multicomponent concentrated solid solution alloy. <i>Acta Materialia</i> , 2017 , 125, 311-320	8.4	102
103	Thermal stability of nanostructured Al ₉₃ Fe ₃ Cr ₂ Ti ₂ alloys prepared via mechanical alloying. <i>Acta Materialia</i> , 2003 , 51, 2647-2663	8.4	102
102	Shear band melting and serrated flow in metallic glasses. <i>Applied Physics Letters</i> , 2008 , 93, 031907	3.4	100
101	The influence of trace boron addition on grain growth kinetics of the beta phase in the beta titanium alloy Ti ₅₀ Mo _{2.6} Nb ₃ Al _{0.2} Si. <i>Scripta Materialia</i> , 2009 , 60, 496-499	5.6	99
100	From high-entropy alloys to complex concentrated alloys. <i>Comptes Rendus Physique</i> , 2018 , 19, 721-736	1.4	96
99	A predictive structural model for bulk metallic glasses. <i>Nature Communications</i> , 2015 , 6, 8123	17.4	93
98	Effects of process-control agents on mechanical alloying of nanostructured aluminum alloys. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2003 , 34, 159-170	2.3	91
97	An assessment of binary metallic glasses: correlations between structure, glass forming ability and stability. <i>International Materials Reviews</i> , 2010 , 55, 218-256	16.1	90
96	Database on the mechanical properties of high entropy alloys and complex concentrated alloys. <i>Data in Brief</i> , 2018 , 21, 2664-2678	1.2	88
95	Compaction of amorphous aluminum alloy powder by direct extrusion and equal channel angular extrusion. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2005 , 393, 12-21	5.3	83

94	Part II. The creep behavior of Ti-Al-Nb O+bcc orthorhombic alloys. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 1999 , 30, 2349-2367	2.3	78
93	Microstructural Design for Improving Ductility of An Initially Brittle Refractory High Entropy Alloy. <i>Scientific Reports</i> , 2018 , 8, 8816	4.9	77
92	Topological criterion for metallic glass formation. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2003 , 347, 50-58	5.3	72
91	High-Entropy Alloys: A Current Evaluation of Founding Ideas and Core Effects and Exploring Nonlinear Alloys. <i>Jom</i> , 2017 , 69, 2130-2136	2.1	66
90	Composition range and glass forming ability of ternary CaMgCu bulk metallic glasses. <i>Journal of Alloys and Compounds</i> , 2006 , 424, 394-399	5.7	63
89	New strategies and tests to accelerate discovery and development of multi-principal element structural alloys. <i>Scripta Materialia</i> , 2017 , 127, 195-200	5.6	62
88	Direct rolling of as-cast TiAlV modified with trace additions of boron. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2008 , 487, 541-551	5.3	59
87	A geometric model for atomic configurations in amorphous Al alloys. <i>Journal of Non-Crystalline Solids</i> , 2003 , 319, 174-191	3.9	59
86	Development and characterization of CaMgZnCu bulk metallic glasses. <i>Intermetallics</i> , 2006 , 14, 1055-1060	5.5	58
85	A topological model for metallic glass formation. <i>Journal of Non-Crystalline Solids</i> , 2003 , 317, 34-39	3.9	57
84	Candidate Atomic Cluster Configurations in Metallic Glass Structures. <i>Materials Transactions</i> , 2006 , 47, 1737-1742	1.3	55
83	Comprehensive data compilation on the mechanical properties of refractory high-entropy alloys. <i>Data in Brief</i> , 2018 , 21, 1622-1641	1.2	54
82	Phase inversion in a two-phase, BCC+B2, refractory high entropy alloy. <i>Acta Materialia</i> , 2020 , 185, 89-97	8.4	53
81	Role of matrix microstructure on room-temperature tensile properties and fiber-strength utilization of an orthorhombic ti-alloy-based composite. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 1997 , 28, 309-323	2.3	51
80	Processing, microstructure, and properties of Titanium alloys modified with boron. <i>Journal of Materials Engineering and Performance</i> , 2005 , 14, 741-746	1.6	51
79	Deformation and fracture of a particle-reinforced aluminum alloy composite: Part I. Experiments. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2000 , 31, 921-936	2.3	49
78	Nickel-aluminum-molybdenum phase equilibria. <i>Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science</i> , 1984 , 15, 481-486		49
77	Crucial role of sidewalls in velocity distributions in quasi-two-dimensional granular gases. <i>Physical Review E</i> , 2004 , 70, 040301	2.4	46

76	Equal channel angular extrusion compaction of semi-amorphous Al ₈₅ Ni ₁₀ Y _{2.5} La _{2.5} alloy powder. <i>Journal of Alloys and Compounds</i> , 2004 , 365, 126-133	5.7	44
75	Refractory high entropy superalloys (RSAs). <i>Scripta Materialia</i> , 2020 , 187, 445-452	5.6	43
74	Topological criteria for amorphization based on a thermodynamic approach. <i>Journal of Applied Physics</i> , 2005 , 97, 103502	2.5	43
73	Phase stability as a function of temperature in a refractory high-entropy alloy. <i>Journal of Materials Research</i> , 2018 , 33, 3235-3246	2.5	42
72	Elastic properties of the O phase in Ti-Al-Nb alloys. <i>Intermetallics</i> , 1997 , 5, 147-156	3.5	40
71	Processing, Microstructure, Texture, and Tensile Properties of the Ti-6Al-4V-1.55B Eutectic Alloy. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2008 , 39, 402-416	2.3	40
70	Local atomic structure of Ca-Mg-Zn metallic glasses. <i>Physical Review B</i> , 2010 , 82,	3.3	39
69	The influence of Zr alloying on the structure and properties of Al ₃ Ti. <i>Intermetallics</i> , 2003 , 11, 241-249	3.5	39
68	Microstructures and mechanical behavior of NiAl-Mo and NiAl-Mo-Ti two-phase alloys. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 1994 , 25, 2769-2781	2.3	38
67	Comparative analysis of glass-formation in binary, ternary, and multicomponent alloys. <i>Journal of Applied Physics</i> , 2010 , 108, 103511	2.5	36
66	Thermodynamic analysis of glass-forming ability in a Ca-Mg-Zn ternary alloy system. <i>Physical Review B</i> , 2006 , 73,	3.3	35
65	Heat-Treatment Effects on the Microstructure and Tensile Properties of Powder Metallurgy Ti-6Al-4V Alloys Modified with Boron. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2010 , 41, 1003-1015	2.3	34
64	Icosahedral and dense random cluster packing in metallic glass structures. <i>Journal of Non-Crystalline Solids</i> , 2008 , 354, 4049-4055	3.9	34
63	Interface effects on the micromechanical response of a transversely loaded single fiber SCS-6/Ti-6Al-4V composite. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 1996 , 27, 2035-2043	2.3	34
62	Glass forming ranges of Al ₃ rare earth metal alloys: thermodynamic and kinetic analysis. <i>Scripta Materialia</i> , 2004 , 50, 987-991	5.6	32
61	The density and packing fraction of binary metallic glasses. <i>Acta Materialia</i> , 2013 , 61, 3157-3171	8.4	30
60	Rolling of Plates and Sheets from As-Cast Ti-6Al-4V-0.1B. <i>Journal of Materials Engineering and Performance</i> , 2009 , 18, 390-398	1.6	29
59	Electrochemical behavior of Ca-based bulk metallic glasses. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2006 , 37, 1239-1245	2.3	29

58	Compressive behavior of an extruded nanocrystalline AlBeCrTi alloy. <i>Scripta Materialia</i> , 2004 , 50, 921-925.	5.6	29
57	Atomic structure of Ca ₄₀ +X ₂₅ Mg ₂₅ Cu ₃₅ metallic glasses. <i>Journal of Applied Physics</i> , 2012 , 111, 123515.	2.5	28
56	Corrosion Properties of Ca Based Bulk Metallic Glasses. <i>Materials Transactions</i> , 2007 , 48, 1850-1854.	1.3	27
55	The influence of reinforcement morphology on the tensile response of 6061/SiC/25p discontinuously-reinforced aluminum. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2003 , 357, 111-123.	5.3	27
54	Mechanical and Fatigue Behavior of Ca ₆₅ Mg ₁₅ Zn ₂₀ Bulk-Metallic Glass. <i>Advanced Engineering Materials</i> , 2009 , 11, 27-34.	3.5	26
53	Effects of thickness and precracking on the fracture toughness of particle-reinforced al-alloy composites. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 1998 , 29, 1237-1243.	2.3	25
52	Localized Einstein modes in Ca-based bulk metallic glasses. <i>Philosophical Magazine</i> , 2007 , 87, 503-508.	1.6	25
51	A Physical Model for Metallic Glass Structures: An Introduction and Update. <i>Jom</i> , 2012 , 64, 846-855.	2.1	24
50	The melting diagram of the Ti-corner of the TiZrSi system and mechanical properties of as-cast compositions. <i>Journal of Alloys and Compounds</i> , 2004 , 384, 106-114.	5.7	24
49	On tension/compression asymmetry of an extruded nanocrystalline AlBeCrTi alloy. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2005 , 409, 249-256.	5.3	24
48	Cryogenic and elevated temperature strengths of an Al ₇₀ Ni ₁₀ Mg ₁₀ Cu alloy modified with Sc and Zr. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2006 , 37, 3569-3575.	2.3	23
47	Development of Low Density Ca-Mg-Al-Based Bulk Metallic Glasses. <i>Materials Transactions</i> , 2007 , 48, 1610-1616.	1.3	20
46	Effects of internal strains on hardness of nanocrystalline AlBeCrTi alloys. <i>Scripta Materialia</i> , 2004 , 51, 449-453.	5.6	20
45	Powder metallurgy Ti-6Al-4V-xB alloys: Processing, microstructure, and properties. <i>Jom</i> , 2004 , 56, 60-63.	2.1	20
44	The Influence of Interface Structure and Composition on the Response of Single-Fiber SiC/Ti-6Al-4V Composites to Transverse Tension. <i>Applied Composite Materials</i> , 1998 , 5, 95-108.	2	18
43	Elastic properties of Ca-based bulk metallic glasses studied by resonant ultrasound spectroscopy. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2007 , 471, 151-154.	5.3	17
42	Description of the fragile behavior of glass-forming liquids with the use of experimentally accessible parameters. <i>Journal of Non-Crystalline Solids</i> , 2009 , 355, 2596-2603.	3.9	16
41	Crystallization kinetics of an amorphous Al ₈₅ Ni ₁₀ Y _{2.5} La _{2.5} alloy. <i>Journal of Alloys and Compounds</i> , 2002 , 337, 83-88.	5.7	16

40	Microstructure engineering of titanium alloys via small boron additions. <i>International Journal of Advances in Engineering Sciences and Applied Mathematics</i> , 2010 , 2, 168-180	0.6	15
39	Beta phase superplasticity in titanium alloys by boron modification. <i>Journal of Materials Engineering and Performance</i> , 2004 , 13, 653-659	1.6	15
38	Theory of solid solution strengthening of BCC Chemically Complex Alloys. <i>Acta Materialia</i> , 2021 , 209, 116758	8.4	15
37	Sustainability through alloy design: Challenges and opportunities. <i>Progress in Materials Science</i> , 2021 , 117, 100722	42.2	15
36	A neutron and X-ray diffraction study of CaMgCu metallic glasses. <i>Intermetallics</i> , 2011 , 19, 860-870	3.5	14
35	A topological basis for bulk glass formation. <i>Acta Materialia</i> , 2007 , 55, 4507-4515	8.4	14
34	Transverse creep of SiC/Ti-6Al-4V fiber-reinforced metal matrix composites. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 1999 , 30, 301-306	2.3	14
33	Microstructure and mechanical behavior of Cr-Cr ₂ Hf in situ intermetallic composites. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 1996 , 27, 2583-2592	2.3	14
32	Partial Coordination Numbers in Binary Metallic Glasses. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2012 , 43, 2649-2661	2.3	13
31	Relaxation Behavior of Ca-Based Bulk Metallic Glasses. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2010 , 41, 1677-1684	2.3	13
30	An assessment of the thermal stability of refractory high entropy superalloys. <i>Journal of Alloys and Compounds</i> , 2021 , 857, 157583	5.7	13
29	The Duality of Fracture Behavior in a Ca-based Bulk-Metallic Glass. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2011 , 42, 1499-1503	2.3	12
28	Expanded dataset of mechanical properties and observed phases of multi-principal element alloys. <i>Scientific Data</i> , 2020 , 7, 430	8.2	11
27	Oxidation Behavior of Ca-Based Bulk Amorphous Materials. <i>Materials Transactions</i> , 2007 , 48, 1870-1878	1.3	11
26	Correlation of Measured Load-Displacement Curves in Small Punch Tests with Tensile Stress-Strain Curves. <i>Acta Materialia</i> , 2021 , 204, 116501	8.4	10
25	Application of the cruciform specimen geometry to obtain transverse interface-property data in a high-fiber-volume-fraction SiC/Titanium alloy composite. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2001 , 32, 3143-3155	2.3	8
24	Correlation between thermodynamic and kinetic fragilities in nonpolymeric glass-forming liquids. <i>Journal of Chemical Physics</i> , 2008 , 128, 124508	3.9	7
23	The microstructural characterization and simulation of titanium alloys modified with boron. <i>Jom</i> , 2007 , 59, 59-63	2.1	7

22	Thermomechanical response of a powder metallurgy Ti6Al4V alloy modified with 2.9 Pct Boron. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2005 , 36, 845-857	2.3	6
21	Noncrystalline compact packings of hard spheres of two sizes: Bipyrramids and the geometry of common neighbors. <i>Journal of Chemical Physics</i> , 2009 , 130, 114505	3.9	5
20	Fatigue and Fracture Behavior of a Ca-Based Bulk-Metallic Glass. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2010 , 41, 1775-1779	2.3	5
19	A Structural Model for Metallic Glasses. <i>Microscopy and Microanalysis</i> , 2004 , 10, 786-787	0.5	5
18	On the relationship between microstructure and acoustic emission in Ti-6Al-4V. <i>Journal of Materials Science</i> , 1995 , 30, 4286-4298	4.3	5
17	Emerging Capabilities for the High-Throughput Characterization of Structural Materials. <i>Annual Review of Materials Research</i> , 2021 , 51, 131-164	12.8	4
16	The environmental stability of boron-containing titanium alloys for biomedical applications. <i>Jom</i> , 2011 , 63, 42-47	2.1	3
15	Microstructural and mechanical characterization of carbon coatings on SiC fibers. <i>Journal of Materials Research</i> , 2001 , 16, 3366-3377	2.5	3
14	Deformation and fracture of a particle-reinforced aluminum alloy composite: Part I. Experiments. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2000 , 31, 921-936	2.3	3
13	Intermetallic Matrix Composites 2000 , 741-778		3
12	A call to action: High entropy alloy manufacturing. <i>Journal of Materials Research</i> , 2018 , 33, 2855-2856	2.5	3
11	Opportunities and Approaches for Doubling the Structural Efficiency of Metallic Materials 2004 , 3-20		2
10	MICROSTRUCTURE-PROPERTY RELATIONSHIPS OF NANOSTRUCTURED Al-Fe-Cr-Ti ALLOYS 2003 , 191-198		1
9	Effect of Re on the Microstructure and Mechanical Properties of NbTiZr and TaTiZr Equiatomic Alloys. <i>Metals</i> , 2021 , 11, 1819	2.3	1
8	4.21 Intermetallic Matrix Composites 2018 , 482-524		0
7	Concomitant Clustering and Ordering Leading to B2 + BCC Microstructures in Refractory High Entropy Alloys. <i>Transactions of the Indian Institute of Metals</i> , 1	1.2	0
6	Response to Comment on 'Comparative analysis of glass-formation in binary, ternary, and multicomponent alloys' [J. Appl. Phys. 114, 166101 (2013)]. <i>Journal of Applied Physics</i> , 2013 , 114, 166102	2.5	
5	Observation of Shear Thickening during Compressive Flow of Mg54Y11Ag7Cu28 in the Supercooled Liquid Region. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2009 , 40, 1-3	2.3	

- 4 Interface Effects on the Tensile and Fatigue Crack Growth Behavior of Fiber-Reinforced Metal Matrix Composites. *Materials Research Society Symposia Proceedings*, **1996**, 458, 185
- 3 Dataset of bond enthalpies (kJ/mol) in 975 binary intermetallic compounds.. *Data in Brief*, **2021**, 39, 107652 1.2
- 2 Lightweighting and the Future of Aerospace Metals. *Indian Institute of Metals Series*, **2019**, 27-38 0.3
- 1 Solidification Microstructure and Texture in Grain-Refined Titanium Alloys **2009**, 475-482