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List of Publications by Year
in descending order

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116 papers	4,369 citations	126907 33 h-index	114465 63 g-index
119 all docs	119 docs citations	119 times ranked	3293 citing authors

#	Article	IF	Citations
1	The Achilles' heel of iron-based catalysts during oxygen reduction in an acidic medium. Energy and Environmental Science, 2018, 11, 3176-3182.	30.8	332
2	Phase separation and enhancement of plasticity in Cuâ€“Zrâ€“Alâ€“Y bulk metallic glasses. Acta Materialia, 2006, 54, 2597-2604.	7.9	234
3	Phase separation in metallic glasses. Progress in Materials Science, 2013, 58, 1103-1172.	32.8	209
4	Natural-mixing guided design of refractory high-entropy alloys with as-cast tensile ductility. Nature Materials, 2020, 19, 1175-1181.	27.5	209
5	Engineering atomic-level complexity in high-entropy and complex concentrated alloys. Nature Communications, 2019, 10, 2090.	12.8	182
6	Real-time observations of TRIP-induced ultrahigh strain hardening in a dual-phase CrMnFeCoNi high-entropy alloy. Nature Communications, 2020, 11, 826.	12.8	165
7	Lattice Distortions in the FeCoNiCrMn High Entropy Alloy Studied by Theory and Experiment. Entropy, 2016, 18, 321.	2.2	151
8	Design of Bulk metallic glasses with high glass forming ability and enhancement of plasticity in metallic glass matrix composites: A review. Metals and Materials International, 2005, 11, 19-27.	3.4	127
9	The effect of Sn addition on the glass-forming ability of Cuâ€“Tiâ€“Zrâ€“Niâ€“Si metallic glass alloys. Journal of Non-Crystalline Solids, 2002, 298, 15-22.	3.1	111
10	Formation of Caâ€“Mgâ€“Zn bulk glassy alloy by casting into cone-shaped copper mold. Journal of Materials Research, 2004, 19, 685-688.	2.6	109
11	Bioinspired nacre-like alumina with a bulk-metallic glass-forming alloy as a compliant phase. Nature Communications, 2019, 10, 961.	12.8	106
12	Enhancement of glass forming ability and plasticity by addition of Nb in Cuâ€“Tiâ€“Zrâ€“Niâ€“Si bulk metallic glasses. Journal of Non-Crystalline Solids, 2005, 351, 1232-1238.	3.1	101
13	Phase separation and improved plasticity by modulated heterogeneity in Cuâ€“(Zr,Hf)â€“(Gd,Y)â€“Al metallic glasses. Scripta Materialia, 2007, 57, 49-52.	5.2	100
14	The effect of Ag addition on the glass-forming ability of Mgâ€“Cuâ€“Y metallic glass alloys. Journal of Non-Crystalline Solids, 2001, 279, 154-160.	3.1	94
15	Correlation between fragility and glass-forming ability/plasticity in metallic glass-forming alloys. Applied Physics Letters, 2007, 91, .	3.3	94
16	Microstructure and mechanical properties of friction stir welded and laser welded high entropy alloy CrMnFeCoNi. Metals and Materials International, 2018, 24, 73-83.	3.4	84
17	In situ formation of two glassy phases in the Ndâ€“Zrâ€“Alâ€“Co alloy system. Scripta Materialia, 2007, 56, 197-200.	5.2	80
18	Utilization of high entropy alloy characteristics in Er-Gd-Y-Al-Co high entropy bulk metallic glass. Acta Materialia, 2018, 155, 350-361.	7.9	79

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19	Effect of Ag Addition on the Improvement of Glass-forming Ability and Plasticity of Mgâ€“Cuâ€“Gd Bulk Metallic Glass. Journal of Materials Research, 2005, 20, 2379-2385.	2.6	77
20	Fabrication of Bulk Mg–Cu–Ag–Y Glassy Alloy by Squeeze Casting. Materials Transactions, JIM, 2000, 41, 846-849.	0.9	72
21	Synthesis of metallic glass composites using phase separation phenomena. Acta Materialia, 2010, 58, 2483-2491.	7.9	72
22	Atomic structure and growth mechanism of T1 precipitate in Alâ€“Cuâ€“Liâ€“Mgâ€“Ag alloy. Scripta Materialia, 2015, 109, 68-71.	5.2	68
23	Effect of addition of Be on glass-forming ability, plasticity and structural change in Cuâ€“Zr bulk metallic glasses. Acta Materialia, 2008, 56, 3120-3131.	7.9	67
24	(Icosahedral phase+Î±-Mg) two phase microstructures in the Mgâ€“Znâ€“Y ternary system. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2001, 300, 312-315.	5.6	59
25	Parameter for glass forming ability of ternary alloy systems. Applied Physics Letters, 2005, 86, 061907.	3.3	52
26	Effect of the substitution of Ag and Ni for Cu on the glass forming ability and plasticity of Cu60Zr30Ti10 alloy. Scripta Materialia, 2006, 54, 1569-1573.	5.2	52
27	Formation of Mgâ€“Cuâ€“Niâ€“Agâ€“Znâ€“Yâ€“Gd Bulk Glassy Alloy by Casting into Cone-shaped Copper Mold in Air Atmosphere. Journal of Materials Research, 2005, 20, 1465-1469.	2.6	48
28	Enhanced glass forming ability and plasticity in Mg-based bulk metallic glasses. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2007, 449-451, 225-229.	5.6	47
29	Direct determination of structural heterogeneity in metallic glasses using four-dimensional scanning transmission electron microscopy. Ultramicroscopy, 2018, 195, 189-193.	1.9	44
30	Corrosion behaviour of Mg65Cu7.5Ni7.5Ag5Zn5Gd5Y5 bulk metallic glass in aqueous environments. Electrochimica Acta, 2008, 53, 3403-3411.	5.2	43
31	A strategy of designing high-entropy alloys with high-temperature shape memory effect. Scientific Reports, 2019, 9, 13140.	3.3	38
32	Bulk Glass Formation in Mg-Cu-Ag-Y-Gd Alloy. Materials Transactions, 2004, 45, 2474-2477.	1.2	37
33	Correlation between plasticity and fragility in Mg-based bulk metallic glasses with modulated heterogeneity. Journal of Applied Physics, 2008, 104, 023520.	2.5	37
34	The effect of Zr addition in glass forming ability of Niâ€“Nb alloy system. Journal of Alloys and Compounds, 2007, 434-435, 156-159.	5.5	36
35	Mg-rich Mgâ€“Niâ€“Gd ternary bulk metallic glasses with high compressive specific strength and ductility. Journal of Materials Research, 2007, 22, 334-338.	2.6	35
36	Effect of atomic configuration and liquid stability on the glass-forming ability of Ca-based metallic glasses. Applied Physics Letters, 2005, 86, 201912.	3.3	32

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37	Curie-Weiss behavior of liquid structure and ideal glass state. Scientific Reports, 2019, 9, 18579.	3.3	26
38	Observation of artifact-free amorphous structure in Cuâ€“Zr-based alloy using transmission electron microscopy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2005, 406, 119-124.	5.6	25
39	Abnormal behavior of supercooled liquid region in bulk-forming metallic glasses. Journal of Applied Physics, 2010, 108, 053515.	2.5	25
40	Thermal behavior of newly developed Zr33Hf8Ti6Cu32Ni10Co5Al6 high-entropy bulk metallic glass. Journal of Alloys and Compounds, 2022, 892, 162220.	5.5	25
41	Poissonâ€™s ratio and fragility of bulk metallic glasses. Journal of Materials Research, 2008, 23, 523-528.	2.6	23
42	Effect of Alloy Composition on the Glass Forming Ability in Ca-Mg-Zn Alloy System. Materials Science Forum, 2005, 475-479, 3415-3418.	0.3	22
43	Role of minor addition of metallic alloying elements in formation and properties of Cuâ€“Ti-rich bulk metallic glasses. Journal of Materials Research, 2008, 23, 1995-2002.	2.6	22
44	Correlation between volumetric change and glass-forming ability of metallic glass-forming alloys. Applied Physics Letters, 2008, 92, .	3.3	22
45	A novel parameter to describe the glass-forming ability of alloys. Journal of Applied Physics, 2015, 118, 064902.	2.5	22
46	Abnormal devitrification behavior and mechanical response of cold-rolled Mg-rich Mg-Cu-Gd metallic glasses. Acta Materialia, 2016, 116, 238-249.	7.9	22
47	Grain Boundaries Boost Oxygen Evolution Reaction in NiFe Electrocatalysts. Small Methods, 2021, 5, 2000755.	8.6	22
48	Element-resolved local lattice distortion in complex concentrated alloys: An observable signature of electronic effects. Acta Materialia, 2021, 216, 117135.	7.9	22
49	Modulation of plastic flow in metallic glasses via nanoscale networks of chemical heterogeneities. Acta Materialia, 2017, 140, 116-129.	7.9	21
50	Estimation of critical cooling rates for glass formation in bulk metallic glasses through non-isothermal thermal analysis. Metals and Materials International, 2005, 11, 1-9.	3.4	20
51	Development of fcc-Al nanoparticles during crystallization of amorphous Alâ€“Ni alloys containing mischmetal: Microstructure and hardness evaluation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2014, 604, 92-97.	5.6	20
52	Manipulation of Ïƒy/Î¼ ratio in single phase FCC solid-solutions. Applied Physics Letters, 2016, 109, .	3.3	20
53	Understanding of the Shear Bands in Amorphous Metals. Applied Microscopy, 2015, 45, 63-73.	1.4	20
54	Fracture behavior of bulk metallic glass/metal laminate composites. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2006, 417, 239-242.	5.6	18

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55	Improvement of plasticity by tailoring combination of constituent elements in Ti-rich Tiâ€“Zrâ€“Beâ€“Cuâ€“Ni bulk metallic glasses. Journal of Materials Research, 2007, 22, 3440-3447.	2.6	18
56	Anelastic strain and structural anisotropy in homogeneously deformed Cu64.5Zr35.5 metallic glass. Acta Materialia, 2008, 56, 5575-5583.	7.9	18
57	A large reversible room temperature magneto-caloric effect in Ni-TM-Co-Mn-Sn (TM = Ti, V, Cr) meta-magnetic Heusler alloys. Journal of Applied Physics, 2018, 123, 033903.	2.5	18
58	Formation of amorphous phase in melt-spun and injection-cast Cu60Zr30Ti10 alloys. Scripta Materialia, 2004, 51, 221-224.	5.2	17
59	Fabrication and mechanical properties of WC particulate reinforced Cu47Ti33Zr11Ni6Sn2Si1 bulk metallic glass matrix composites. Journal of Materials Science, 2005, 40, 6127-6130.	3.7	17
60	Manipulation of thermal and mechanical stability by addition of multiple equiatomic rare-earth elements in Al-TM-RE metallic glasses. Intermetallics, 2017, 91, 8-15.	3.9	17
61	Optimization of conflicting properties via engineering compositional complexity in refractory high entropy alloys. Scripta Materialia, 2021, 199, 113839.	5.2	17
62	Quasicrystals and related approximant phases in Mgâ€“Znâ€“Y. Micron, 2002, 33, 565-570.	2.2	16
63	Improvement of glass-forming ability and phase separation in Cuâ€“Ti-rich Cuâ€“Tiâ€“Zrâ€“Niâ€“Si bulk metallic glasses. Journal of Alloys and Compounds, 2010, 504, S27-S30.	5.5	14
64	Enhancement of interface anchoring and densification of Y2O3 coating by metal substrate manipulation in aerosol deposition process. Journal of Applied Physics, 2015, 117, .	2.5	14
65	Effects of alloying elements with positive enthalpy of mixing in Mg65Cu25Gd10 bulk-forming metallic glasses. Intermetallics, 2012, 31, 9-15.	3.9	13
66	Synthesis of bioinspired ice-templated bulk metallic glass-alumina composites with intertwined dendritic structure. Scripta Materialia, 2019, 172, 159-164.	5.2	13
67	Mechanical behavior of Cu54Ni6Zr22Ti18 bulk amorphous alloy during multi-pass warm rolling. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2007, 449-451, 929-933.	5.6	12
68	A simple model for determining alloy composition with large glass forming ability in ternary alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2001, 32, 200-202.	2.2	11
69	The Effect of In Addition on the Glass-Forming Ability in Cu-Ti-Zr-Ni-Si Metallic Glasses. Materials Transactions, 2004, 45, 2693-2696.	1.2	11
70	Development of Moâ€Niâ€Siâ€B metallic glass with high thermal stability and H versus E ratios. Materials and Design, 2016, 98, 31-40.	7.0	11
71	Deformation behavior of amorphous composites containing crystalline nickel in the supercooled liquid region. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2007, 449-451, 916-919.	5.6	10
72	Manipulation of Microstructure and Mechanical Properties in N-Doped CoCrFeMnNi High-Entropy Alloys. Metals, 2021, 11, 1487.	2.3	10

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73	Electrochemically Activated NiFeO_xH_y for Enhanced Oxygen Evolution. ACS Applied Energy Materials, 2021, 4, 595-601.	5.1	10
74	Structural behaviors of single and multiple amorphous alloys deformed by forced cold rolling. Intermetallics, 2010, 18, 1920-1924.	3.9	9
75	In-situ synthesis and mechanical properties of Zr-based bulk metallic glass matrix composites manipulated by nitrogen additions. Intermetallics, 2017, 91, 70-77.	3.9	9
76	Tuning correlative atomic scale fluctuation and related properties in Niâ€“Nbâ€“Zr metallic glasses. Acta Materialia, 2019, 173, 52-60.	7.9	9
77	A new class of light-weight metastable high entropy alloy with high strength and large ductility. Materialia, 2022, 21, 101284.	2.7	9
78	Alloy design strategy to improve fluidity of Zr-based bulk metallic glass for near-net-shape manufacturing. Journal of Alloys and Compounds, 2022, 896, 162680.	5.5	9
79	Effect of manipulating atomic scale heterogeneity on plasticity in Mg-based bulk metallic glasses. Intermetallics, 2010, 18, 1867-1871.	3.9	8
80	Medium-range ordering, structural heterogeneity, and their influence on properties of Zr-Cu-Co-Al metallic glasses. Physical Review Materials, 2021, 5, .	2.4	8
81	Strengthening by customizing microstructural complexity in nitrogen interstitial CoCrFeMnNi high-entropy alloys. Journal of Alloys and Compounds, 2022, 901, 163483.	5.5	8
82	An in situ ambient and cryogenic transmission electron microscopy study of the effects of temperature on dislocation behavior in CrCoNi-based high-entropy alloys with low stacking-fault energy. Applied Physics Letters, 2021, 119, .	3.3	8
83	Network structure composite in phase separating Gd30Zr25Al25(Co/Cu)20 metallic glassy alloys. Intermetallics, 2010, 18, 1846-1850.	3.9	7
84	Anomalous glass transition behavior in Cuâ€“Zrâ€“Sn alloy system. Journal of Alloys and Compounds, 2011, 509, S52-S55.	5.5	7
85	Non-isothermal kinetic studies of crystallization in amorphous Al86Ni10MM4 alloy. Journal of Non-Crystalline Solids, 2014, 387, 36-40.	3.1	7
86	A hidden variable in shear transformation zone volume versus Poissonâ€™s ratio relation in metallic glasses. APL Materials, 2017, 5, 106105.	5.1	7
87	An experimental case study on corrosion characterization of Cu46Zr40Ti8.5Al5.5 metallic glass. Journal of Non-Crystalline Solids, 2019, 524, 119654.	3.1	7
88	A criterion of ideal thermoplastic forming ability for metallic glasses. Scripta Materialia, 2020, 187, 221-226.	5.2	7
89	In-situ synthesis of Mg-based bulk metallic glass matrix composites with primary Î±-Mg phases. Journal of Alloys and Compounds, 2021, 879, 160417.	5.5	7
90	Finite element method analysis on the stress and strain states in amorphous composites containing crystalline copper during compression. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2007, 449-451, 704-708.	5.6	6

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91	Accurate quantification of glass-forming ability by measuring effective volume relaxation of supercooled melt. APL Materials, 2017, 5, .	5.1	6
92	Anomalous behavior of glass-forming ability and mechanical response in a series of equiatomic binary to denary metallic glasses. Materialia, 2020, 9, 100505.	2.7	6
93	A scalable Alâ€“Ni alloy powder catalyst prepared by metallurgical microstructure control. Journal of Materials Chemistry A, 2020, 8, 11133-11140.	10.3	6
94	High Pressure Quenched Glasses: unique structures and properties. Scientific Reports, 2020, 10, 9497.	3.3	6
95	Rapid assessment of solid solution hardening via atomic size misfit parameter in refractory concentrated alloys. Journal of Alloys and Compounds, 2021, 886, 161320.	5.5	6
96	Thermomechanical Analysis on the Phase Stability of Nitrogen-Doped Amorphous Ge2Sb2Te5Films. Japanese Journal of Applied Physics, 2011, 50, 061201.	1.5	5
97	In situ synthesis of cold-rollable aluminumâ€“aluminum nitride composites via arc plasma-induced accelerated volume nitridation. Journal of Materials Research, 2017, 32, 217-226.	2.6	5
98	In-situ synthesis of co-continuous aluminum-aluminum nitride composites by arc plasma induced accelerated displacement reaction. Journal of Alloys and Compounds, 2017, 729, 171-179.	5.5	5
99	Improvement of Mechanical Properties of Zr-Based Bulk Amorphous Alloys by High Temperature Heat Treatment. Metals and Materials International, 2020, 26, 1144-1151.	3.4	5
100	Effects of transformation-induced plasticity on the small-scale deformation behavior of single crystalline complex concentrated alloys. Scripta Materialia, 2020, 176, 122-125.	5.2	5
101	Suppressed radiation-induced dynamic recrystallization in CrFeCoNiCu high-entropy alloy. Scripta Materialia, 2021, 190, 158-162.	5.2	5
102	Composition Design and Nanoindentation Studies on Mg-Ca-Zn Metallic Glass. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2022, 53, 1419-1429.	2.2	5
103	Structural signature and size-dependent mechanical response of frozen-in icosahedral phase in bulk metallic glasses. Materials and Design, 2018, 138, 129-139.	7.0	3
104	Microstructure Evolution and Related Magnetic Properties of Cu-Zr-Al-Gd Phase-Separating Metallic Glasses. Jom, 2018, 70, 988-992.	1.9	3
105	Synthesis of high-entropy alloy thin films via grain boundary diffusionâ€“assisted solid-state alloying. Scripta Materialia, 2022, 207, 114302.	5.2	3
106	Pushing the Boundaries of Multicomponent Alloy Nanostructures: Hybrid Approach of Liquid Phase Separation and Selective Leaching Processes. Accounts of Chemical Research, 2022, 55, 1821-1831.	15.6	3
107	The Effect of Ag on the Glass Forming Ability and Crystallization in Mg-Cu-Ag-Y Alloys. Materials Science Forum, 2001, 360-362, 95-100.	0.3	2
108	Probing structural changes during ductile fracture in metallic glasses via in situ straining inside a MeV transmission electron microscope. Intermetallics, 2018, 102, 94-100.	3.9	2

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109	Development of Al-Based Metallic Glass Composites Containing Pb-Rich Crystalline 2nd Phase. Journal of Korean Institute of Metals and Materials, 2020, 58, 77-86.	1.0	2
110	Nano-scale Shell in Phase Separating Gd-Ti-Al-Co Metallic Glass. Applied Microscopy, 2013, 43, 98-101.	1.4	2
111	Probing Nanoscale Structural Heterogeneity in Metallic Glasses Using 4-D STEM. Microscopy and Microanalysis, 2018, 24, 202-203.	0.4	1
112	Biocorrosion Evaluation on a Zr-Cu-Ag-Ti Metallic Glass. IOP Conference Series: Materials Science and Engineering, 2018, 346, 012009.	0.6	1
113	Development of Light-Weight TRIP/TWIP FCC High Entropy Alloy with High Specific Strength and Large Ductility. Journal of Korean Institute of Metals and Materials, 2021, 59, 857-869.	1.0	1
114	Ca-Mg-Zn Bulk Metallic Glasses with Strong Glass-Forming Ability Synthesized under Air Atmosphere. Journal of Metastable and Nanocrystalline Materials, 2005, 24-25, 687-690.	0.1	0
115	Nano-crystal formation of Mg-Cu-Gd amorphous ribbon deformed by forced cold rolling. IOP Conference Series: Materials Science and Engineering, 2014, 63, 012165.	0.6	0
116	Determining Medium Range Atomic Ordering in Metallic Glasses Using 4D-STEM. Microscopy and Microanalysis, 2020, 26, 230-232.	0.4	0