William L Johnson

List of Publications by Citations

143 papers	12,448 citations	48 h-index	111 g-index
146 ext. papers	13,092 ext. citations	5.7 avg, IF	6.58 L-index

#	Paper	IF	Citations
143	Bulk Glass-Forming Metallic Alloys: Science and Technology. *MRS Bulletin*, **1999**, 24, 42-56	3.2	2037
142	Designing metallic glass matrix composites with high toughness and tensile ductility. *Nature*, **2008**, 451, 1085-9	50.4	1155
141	Ductile bulk metallic glass. *Physical Review Letters*, **2004**, 93, 255506	7.4	885
140	Bulk metallic glass formation in binary Cu-rich alloy series □Cu100⊠Zrx (x=34, 36, 38.2, 40 at.%) and mechanical properties of bulk Cu64Zr36 glass. *Acta Materialia*, **2004**, 52, 2621-2624	8.4	488
139	A damage-tolerant glass. *Nature Materials*, **2011**, 10, 123-8	27	470
138	Unusual glass-forming ability of bulk amorphous alloys based on ordinary metal copper. *Physical Review Letters*, **2004**, 92, 245504	7.4	394
137	Melting and crystallization in Ni nanoclusters: The mesoscale regime. *Journal of Chemical Physics*, **2001**, 115, 385-394	3.9	314
136	Diffusion mechanisms in metallic supercooled liquids and glasses. *Nature*, **1999**, 402, 160-162	50.4	295
135	Development of tough, low-density titanium-based bulk metallic glass matrix composites with tensile ductility. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 20136-40	11.5	278
134	Fundamental Aspects of Bulk Metallic Glass Formation in Multicomponent Alloys. *Materials Science Forum*, **1996**, 225-227, 35-50	0.4	268
133	Strain Rate Induced Amorphization in Metallic Nanowires. *Physical Review Letters*, **1999**, 82, 2900-2903	7.4	246
132	Anelastic to plastic transition in metallic glass-forming liquids. *Physical Review Letters*, **2007**, 99, 135502	7.4	200
131	Gold based bulk metallic glass. *Applied Physics Letters*, **2005**, 87, 061912	3.4	200
130	Molecular dynamics study of the binary Cu46Zr54 metallic glass motivated by experiments: Glass formation and atomic-level structure. *Physical Review B*, **2005**, 71,	3.3	199
129	Rheology and Ultrasonic Properties of Metallic Glass-Forming Liquids: A Potential Energy Landscape Perspective. *MRS Bulletin*, **2007**, 32, 644-650	3.2	191
128	Ni-based bulk metallic glass formation in the Ni□Nb□Sn and Ni□Nb□Sn□X (X=B,Fe,Cu) alloy systems. *Applied Physics Letters*, **2003**, 82, 1030-1032	3.4	190
127	Beating crystallization in glass-forming metals by millisecond heating and processing. *Science*, **2011**, 332, 828-33	33.3	170

126	Formation and properties of new Ni-based amorphous alloys with critical casting thickness up to 5 mm. *Acta Materialia*, **2004**, 52, 3493-3497	8.4	151
125	Highly processable bulk metallic glass-forming alloys in the PtCoNiCuP system. *Applied Physics Letters*, **2004**, 84, 3666-3668	3.4	149
124	Critical cooling rate and thermal stability of ZrTiCuNiBe alloys. *Applied Physics Letters*, **2001**, 78, 1213-1215	3.4	147
123	Deformation and flow in bulk metallic glasses and deeply undercooled glass forming liquids: self consistent dynamic free volume model. *Intermetallics*, **2002**, 10, 1039-1046	3.5	142
122	Pronounced asymmetry in the crystallization behavior during constant heating and cooling of a bulk metallic glass-forming liquid. *Physical Review B*, **1999**, 60, 11855-11858	3.3	127
121	Cooperative shear model for the rheology of glass-forming metallic liquids. *Physical Review Letters*, **2006**, 97, 065502	7.4	109
120	Model for decomposition and nanocrystallization of deeply undercooled Zr41.2Ti13.8Cu12.5Ni10Be22.5. *Applied Physics Letters*, **2000**, 76, 3394-3396	3.4	109
119	Formation and characterization of amorphous erbium-based alloys prepared by near-isothermal cold-rolling of elemental composites. *Journal of Applied Physics*, **1985**, 58, 3865-3870	2.5	102
118	Timescales of crystallization and viscous flow of the bulk glass-forming Zr-Ti-Ni-Cu-Be alloys. *Physical Review B*, **2003**, 67,	3.3	99
117	Amorphous metallic foam. *Applied Physics Letters*, **2003**, 82, 370-372	3.4	99
116	Lightweight Ti-based bulk metallic glasses excluding late transition metals. *Scripta Materialia*, **2008**, 58, 465-468	5.6	90
115	Time-temperature-transformation diagram and microstructures of bulk glass forming Pd40Cu30Ni10P20. *Applied Physics Letters*, **2000**, 77, 681-683	3.4	89
114	Amorphous metals for hard-tissue prosthesis. *Jom*, **2010**, 62, 83-91	2.1	86
113	Merging of the α and β relaxations and aging via the Johari-Goldstein modes in rapidly quenched metallic glasses. *Applied Physics Letters*, **2008**, 92, 131911	3.4	85
112	Isoconfigurational elastic constants and liquid fragility of a bulk metallic glass forming alloy. *Physical Review Letters*, **2006**, 97, 015501	7.4	85
111	Crystallization kinetics of the bulk-glass-forming Pd43Ni10Cu27P20 melt. *Applied Physics Letters*, **2000**, 77, 1158-1160	3.4	80
110	Bulk metallic glasses: a new engineering material. *Current Opinion in Solid State and Materials Science*, **1996**, 1, 383-386	12	76
109	Solution to the problem of the poor cyclic fatigue resistance of bulk metallic glasses. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 4986-91	11.5	74

108	Criteria for formation of metallic glasses: The role of atomic size ratio. *Journal of Chemical Physics*, **2003**, 119, 9858-9870	3.9	74
107	Slow Atomic Motion in Zr-Ti-Cu-Ni-Be Metallic Glasses Studied by NMR. *Physical Review Letters*, **1998**, 81, 5358-5361	7.4	74
106	High copper content bulk glass formation in bimetallic Cu-Hf system. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2005**, 36, 455-458	2.3	68
105	Synthesis method for amorphous metallic foam. *Journal of Applied Physics*, **2004**, 96, 7723-7730	2.5	65
104	Compositional landscape for glass formation in metal alloys. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 9031-6	11.5	61
103	Spheres of the metallic glass Au55Pb22.5Sb22.5 and their surface characteristics. *Applied Physics Letters*, **1982**, 40, 382-384	3.4	61
102	Microstructures and mechanical properties of tungsten wire/particle reinforced Zr57Nb5Al10Cu15.4Ni12.6 metallic glass matrix composites. *Applied Physics Letters*, **2002**, 80, 1906-1908	3.4	59
101	Bulk Glass-Forming Metallic Alloys: Science and Technology [1998 Mrs Medal Award Lecture, Presented at Symposium Mm]. *Materials Research Society Symposia Proceedings*, **1998**, 554, 311		57
100	Precipitation of bcc nanocrystals in bulk Mg□Cu□ amorphous alloys. *Journal of Materials Research*, **1996**, 11, 2388-2392	2.5	55
99	Crystallization of bulk amorphous Zr□Ti(Nb)□Cu□Ni□Al. *Applied Physics Letters*, **2000**, 77, 525-527	3.4	53
98	Compositional dependence of thermal, elastic, and mechanical properties in Cu□Zr□Ag bulk metallic glasses. *Scripta Materialia*, **2008**, 58, 159-162	5.6	51
97	Thermal expansion of liquid Ti□Al□V measured by electrostatic levitation. *Applied Physics Letters*, **2006**, 89, 111913	3.4	49
96	Correlation between fracture surface morphology and toughness in Zr-based bulk metallic glasses. *Journal of Materials Research*, **2010**, 25, 982-990	2.5	48
95	Precious bulk metallic glasses for jewelry applications. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2007**, 449-451, 235-238	5.3	48
94	Strong configurational dependence of elastic properties for a binary model metallic glass. *Applied Physics Letters*, **2006**, 89, 151901	3.4	48
93	Glassy steel optimized for glass-forming ability and toughness. *Applied Physics Letters*, **2009**, 95, 041907	3.4	47
92	Towards an understanding of tensile deformation in Ti-based bulk metallic glass matrix composites with BCC dendrites. *Scientific Reports*, **2016**, 6, 22563	4.9	43
91	Fracture toughness study of new Zr-based Be-bearing bulk metallic glasses. *Scripta Materialia*, **2009**, 60, 80-83	5.6	42

90	Strain rate induced crystallization in bulk metallic glass-forming liquid. *Physical Review Letters*, **2006**, 96, 075503	7.4	42
89	Effect of microalloying on the toughness of metallic glasses. *Applied Physics Letters*, **2012**, 101, 241913	3.4	40
88	Stochastic metallic-glass cellular structures exhibiting benchmark strength. *Physical Review Letters*, **2008**, 101, 145702	7.4	40
87	Repeated crystallization in undercooled Zr41Ti14Cu12Ni10Be23 liquids. *Applied Physics Letters*, **2000**, 76, 2343-2345	3.4	40
86	How the toughness in metallic glasses depends on topological and chemical heterogeneity. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 7053-8	11.5	38
85	Injection molding metallic glass. *Scripta Materialia*, **2009**, 60, 160-163	5.6	38
84	Semi-solid induction forging of metallic glass matrix composites. *Jom*, **2009**, 61, 11-17	2.1	38
83	Modeling the transient flow of undercooled glass-forming liquids. *Journal of Applied Physics*, **2004**, 95, 2857-2865	2.5	38
82	History dependent crystallization of Zr41Ti14Cu12Ni10Be23 melts. *Journal of Applied Physics*, **2000**, 88, 44-48	2.5	38
81	Bulk Metallic Glass Formation from Strong Liquids. *Materials Science Forum*, **1998**, 269-272, 547-552	0.4	37
80	Enhanced fatigue endurance of metallic glasses through a staircase-like fracture mechanism. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 18419-24	11.5	36
79	Optimizing Bulk Metallic Glasses for Robust, Highly Wear-Resistant Gears . *Advanced Engineering Materials*, **2017**, 19, 1600541	3.5	36
78	Castable Bulk Metallic Glass Strain Wave Gears: Towards Decreasing the Cost of High-Performance Robotics. *Scientific Reports*, **2016**, 6, 37773	4.9	34
77	Accessing thermoplastic processing windows in metallic glasses using rapid capacitive discharge. *Scientific Reports*, **2014**, 4, 6441	4.9	32
76	Thermophysical properties of NiNb and NiNbSn bulk metallic glass-forming melts by containerless electrostatic levitation processing. *Journal of Non-Crystalline Solids*, **2004**, 337, 21-28	3.9	31
75	TEM study of structural evolution in a copper mold cast Cu46Zr54 bulk metallic glass. *Scripta Materialia*, **2006**, 54, 1117-1122	5.6	30
74	Characterization of the Interface Between the Bulk Glass Forming Alloy Zr41Ti14Cu12Ni10Be23 with Pure Metals and Ceramics. *Journal of Materials Research*, **2000**, 15, 1617-1621	2.5	30
73	Shaping metallic glasses by electromagnetic pulsing. *Nature Communications*, **2016**, 7, 10576	17.4	29

72	Cryogenic Charpy impact testing of metallic glass matrix composites. *Scripta Materialia*, **2012**, 66, 284-287	3.6	29
71	Investigating Amorphous Metal Composite Architectures as Spacecraft Shielding. *Advanced Engineering Materials*, **2013**, 15, 27-33	3.5	29
70	Predicted Optimum Composition for the Glass-Forming Ability of Bulk Amorphous Alloys: Application to Cu-Zr-Al. *Journal of Physical Chemistry Letters*, **2012**, 3, 3143-8	6.4	29
69	Shear flow characteristics and crystallization kinetics during steady non-isothermal flow of Vitreloy-1. *Acta Materialia*, **2004**, 52, 3403-3412	8.4	27
68	Strong Liquid Behavior of Zr-Ti-Cu-Ni-Be Bulk Metallic Glass Forming Alloys. *Materials Research Society Symposia Proceedings*, **1996**, 455, 369		27
67	Thermal and elastic properties of Cu$_2$ZrBe bulk metallic glass forming alloys. *Applied Physics Letters*, **2007**, 90, 211901	3.4	26
66	Origin of embrittlement in metallic glasses. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 10257-62	11.5	25
65	Liquid-like platinum-rich glasses. *Scripta Materialia*, **2011**, 65, 799-802	5.6	25
64	Fragility of iron-based glasses. *Applied Physics Letters*, **2011**, 99, 161902	3.4	25
63	Amorphous Fe-based metal foam. *Scripta Materialia*, **2007**, 57, 9-12	5.6	25
62	Extremely low critical cooling rate measured on dispersed Pd43Ni10Cu27P20. *Applied Physics Letters*, **2002**, 80, 2069-2071	3.4	25
61	Structure and mechanical properties of bulk glass-forming Ni$_{50}$Nb$_{35}$Sn alloys. *Scripta Materialia*, **2006**, 54, 187-190	5.6	23
60	Effect of cooling rate on the volume fraction of B2 phases in a CuZrAlCo metallic glass matrix composite. *Intermetallics*, **2013**, 39, 89-93	3.5	22
59	Rheology and ultrasonic properties of Pt57.5Ni5.3Cu14.7P22.5 liquid. *Applied Physics Letters*, **2007**, 90, 171923	3.4	21
58	Hypervelocity Impact Phenomenon in Bulk Metallic Glasses and Composites**. *Advanced Engineering Materials*, **2014**, 16, 85-93	3.5	20
57	Crystallization kinetics and glass-forming ability of bulk metallic glasses Pd40Cu30Ni10P20 and Zr41.2Ti13.8Cu12.5Ni10Be22.5 from classical theory. *Physical Review B*, **2006**, 74,	3.3	20
56	High porosity metallic glass foam: A powder metallurgy route. *Applied Physics Letters*, **2007**, 91, 161903	3.4	20
55	Crystallization of Mg$_2$Al and Al-based metallic liquids under ultra-high gravity. *Intermetallics*, **2002**, 10, 1167-1175	3.5	20

54	Deformation of glass forming metallic liquids: Configurational changes and their relation to elastic softening. *Applied Physics Letters*, **2007**, 90, 131912	3.4	19
53	Coarse-grained description of localized inelastic deformation in amorphous metals. *Applied Physics Letters*, **2009**, 94, 191905	3.4	18
52	Crystallization pathways of deeply undercooled Zr-Ti-Cu-Ni-Be melts. *Scripta Materialia*, **2001**, 44, 1251-1255	5.6	18
51	Crystallization of Zr41Ti14Cu12Ni10Be23. *Materials Transactions, JIM*, **2000**, 41, 1530-1537		18
50	Synthesis of single-component metallic glasses by thermal spray of nanodroplets on amorphous substrates. *Applied Physics Letters*, **2012**, 100, 041909	3.4	17
49	Rheometry and Crystallization of Bulk Metallic Glass Forming Alloys at High Temperatures. *Materials Science Forum*, **1998**, 269-272, 779-784	0.4	17
48	In situ composite formation in the Ni(Cu)TiZrSi system. *Scripta Materialia*, **2005**, 53, 1467-1470	5.6	16
47	First-Order Phase Transition in Liquid Ag to the Heterogeneous G-Phase. *Journal of Physical Chemistry Letters*, **2020**, 11, 632-645	6.4	15
46	Metallic-glass-matrix composite structures with benchmark mechanical performance. *Applied Physics Letters*, **2010**, 97, 241910	3.4	14
45	Near-threshold fatigue crack growth in bulk metallic glass composites. *Journal of Materials Research*, **2009**, 24, 3611-3619	2.5	14
44	Effect of processing on Charpy impact toughness of metallic glass matrix composites. *Journal of Materials Research*, **2011**, 26, 1260-1268	2.5	13
43	Expansion evolution during foaming of amorphous metals. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2007**, 449-451, 863-867	5.3	13
42	Thermo-plastic expansion of amorphous metallic foam. *Journal of Alloys and Compounds*, **2007**, 434-435, 92-96	5.7	13
41	Dynamic Failure Mechanisms in Beryllium-Bearing Bulk Metallic Glasses. *Materials Research Society Symposia Proceedings*, **1998**, 554, 419		13
40	Description of millisecond Ohmic heating and forming of metallic glasses. *Acta Materialia*, **2013**, 61, 3060-3067	8.4	12
39	A two-dimensional phase separation on the spherical surface of the metallic glass Au55Pb22.5Sb22.5. *Applied Physics Letters*, **1982**, 41, 1054-1056	3.4	11
38	Calculating glass-forming ability in absence of key kinetic and thermodynamic parameters. *Applied Physics Letters*, **2010**, 97, 024102	3.4	10
37	Novel thermoplastic bonding using a bulk metallic glass solder. *Scripta Materialia*, **2008**, 59, 905-908	5.6	10

36	Enhanced temperature uniformity by tetrahedral laser heating. *Review of Scientific Instruments*, **2004**, 75, 4523-4527	1.7	10
35	Structural influence on atomic hopping and electronic states of Pd-based bulk metallic glasses. *Applied Physics Letters*, **2005**, 86, 072104	3.4	10
34	Designing color in metallic glass. *Scientific Reports*, **2019**, 9, 3269	4.9	9
33	Compression-compression fatigue of Pd43Ni10Cu27P20 metallic glass foam. *Journal of Applied Physics*, **2010**, 108, 023505	2.5	9
32	Improving Ductility in Nanostructured Materials and Metallic Glasses: Three Laws *Materials Science Forum*, **2009**, 633-634, 657-663	0.4	8
31	Heterogeneous influences on the crystallization of Pd43Ni10Cu27P20. *Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties*, **2002**, 82, 1207-1217		8
30	Superconductivity in metastable simple cubic alloys. *Journal of Applied Physics*, **1974**, 45, 3683-3684	2.5	8
29	Heterogeneous influences on the crystallization of Pd 43 Ni 10 Cu 27 P 20. *Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties*, **2002**, 82, 1207-1217		8
28	Observation of an apparent first-order glass transition in ultrafragile Pt-Cu-P bulk metallic glasses. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 2779-2787	11.5	7
27	Structure and properties of Ni60(Nb100 Tax)34Sn6 bulk metallic glass alloys. *Journal of Non-Crystalline Solids*, **2006**, 352, 747-755	3.9	7
26	Effect of strain rate on the yielding mechanism of amorphous metal foam. *Applied Physics Letters*, **2010**, 96, 021906	3.4	6
25	Crystallization of Supercooled Zr41Ti14Cu12Ni10B23 Melts During Continuous Heating and Cooling. *Materials Research Society Symposia Proceedings*, **1998**, 554, 263		6
24	Deformation and crystallization of Zr-based amorphous alloys in homogeneous flow regime. *Journal of Materials Research*, **2010**, 25, 1137-1148	2.5	5
23	Steady non-Newtonian flow of Vitreloy-1 in continuous extrusion. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2004**, 375-377, 270-275	5.3	5
22	Minimizing convection effects to measure diffusion in liquid droplets during high-temperature electrostatic levitation. *Review of Scientific Instruments*, **2005**, 76, 033909	1.7	5
21	Interfacial instability-driven amorphization anocrystallization in a bulk Ni45Cu5Ti33Zr16Si1 alloy during solidification. *Physical Review B*, **2005**, 72,	3.3	4
20	Critical Cooling Rate and Thermal Stability in Zr-Ti-Cu-Ni-Be Bulk Metallic Glasses. *Materials Research Society Symposia Proceedings*, **2000**, 644, 461		4
19	Structures and properties of bulk glass forming NiNbSn alloys and NiNbTaSn alloys. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2007**, 449-451, 134-138	5.3	3

18	Viscosity, Relaxation and Crystallization Kinetics In Zr-Ti-Cu-Ni-Be Strong Bulk Metallic Glass Forming Liquids. *Materials Research Society Symposia Proceedings*, **1998**, 554, 223		3
17	Probing Slow Atomic Motions in Metallic Glasses using NMR. *Materials Research Society Symposia Proceedings*, **1998**, 554, 87		3
16	Molecular Dynamics Simulations of Supercooled Liquid Metals and Glasses. *Materials Research Society Symposia Proceedings*, **2000**, 644, 231		2
15	Solid State Reactions in the ZR-AL-CU-NI Bulk Metallic Glass Forming Alloy System. *Materials Research Society Symposia Proceedings*, **1995**, 382, 63		2
14	Investigation of Metallic and Metallic Glass Hollow Spheres for Fusion Target Application. *Materials Research Society Symposia Proceedings*, **1981**, 9, 105		2
13	Study of Mushy-Zone Development in Dendritic Microstructures with Glass-Forming Eutectic Matrices Using Electrostatic Levitation. *ISRN Materials Science*, **2013**, 2013, 1-7		1
12	Transient Deformation and Flow in Bulk Metallic Glasses and Deeply Undercooled Glass Forming Liquids □A Self-Consistent Dynamic Free Volume Model. *Materials Research Society Symposia Proceedings*, **2002**, 754, 1		1
11	Deformation Behavior of FCC Crystalline Metallic Nanowires Under High Strain Rates. *Materials Research Society Symposia Proceedings*, **1998**, 554, 367		1
10	A Study of Amorphous Erbium-Based Alloys Formed by Near-Isothermal Cold-Rolling of Elemental Composites. *Materials Research Society Symposia Proceedings*, **1985**, 58, 27		1
9	The L-G phase transition in binary Cu-Zr metallic liquids.. *Physical Chemistry Chemical Physics*, **2021**, 24, 497-506	3.6	0
8	Back Cover Advanced Engineering Materials 1-2/2013. *Advanced Engineering Materials*, **2013**, 15, 70-70	3.5	
7	Fracture Toughness Study on Zr-based Bulk Metallic Glasses. *Materials Research Society Symposia Proceedings*, **2007**, 1048, 4		
6	Microstructures and properties of the tungsten wire/particle reinforced Zr57Nb5Al10Cu15.4Ni12.6 metallic glass composites. *Materials Research Society Symposia Proceedings*, **2002**, 754, 1		
5	The Shear Modulus of Vit 1 in the Supercooled Liquid and Glassy State. *Materials Research Society Symposia Proceedings*, **2000**, 644, 1151		
4	Structural and Phase Transformations During Crystallization of Pd43Ni10Cu27P20 Metallic Glass. *Materials Research Society Symposia Proceedings*, **2000**, 644, 1271		
3	Differential Scanning Calorimetry and Guinier Camera/High-Temperature X-Ray Diffraction Studies of the Oxygen Sublattice Phase Transition in the Yba2Cu3O7□ System. *Materials Research Society Symposia Proceedings*, **1987**, 99, 923		
2	Atomic and Electronic Structure of Amorphous Alloys. *Materials Research Society Symposia Proceedings*, **1981**, 7, 183		
1	Thermophysical Properties of Bulk Metallic Glasses. *Minerals, Metals and Materials Series*, **2022**, 425-450	0.3	