Lianyi Y Chen

List of Publications by Year
in descending order

80 papers	4,749 citations	117625 34 h-index	95266 68 g-index
85 all docs	85 docs citations	85 times ranked	3642 citing authors

#	Article	IF	Citations
1	Processing and properties of magnesium containing a dense uniform dispersion of nanoparticles. Nature, 2015, 528, 539-543.	27.8	582
2	Real-time monitoring of laser powder bed fusion process using high-speed X-ray imaging and diffraction. Scientific Reports, 2017, 7, 3602.	3.3	389
3	Novel nanoprocessing route for bulk graphene nanoplatelets reinforced metal matrix nanocomposites. Scripta Materialia, 2012, 67, 29-32.	5.2	299
4	Transient dynamics of powder spattering in laser powder bed fusion additive manufacturing process revealed by in-situ high-speed high-energy x-ray imaging. Acta Materialia, 2018, 151, 169-180.	7.9	276
5	New Class of Plastic Bulk Metallic Glass. Physical Review Letters, 2008, 100, 075501.	7.8	182
6	Pore elimination mechanisms during 3D printing of metals. Nature Communications, 2019, 10, 3088.	12.8	158
7	Defects and anomalies in powder bed fusion metal additive manufacturing. Current Opinion in Solid State and Materials Science, 2022, 26, 100974.	11.5	157
8	Direct observation of pore formation mechanisms during LPBF additive manufacturing process and high energy density laser welding. International Journal of Machine Tools and Manufacture, 2020, 153, 103555.	13.4	143
9	Ultrafast X-ray imaging of laserâ€“metal additive manufacturing processes. Journal of Synchrotron Radiation, 2018, 25, 1467-1477.	2.4	142
10	Effect of pre-existing shear bands on the tensile mechanical properties of a bulk metallic glass. Acta Materialia, 2010, 58, 1276-1292.	7.9	117
11	Free-volume-induced enhancement of plasticity in a monolithic bulk metallic glass at room temperature. Scripta Materialia, 2008, 59, 75-78.	5.2	116
12	Rapid control of phase growth by nanoparticles. Nature Communications, 2014, 5, 3879.	12.8	116
13	Theoretical study and pathways for nanoparticle capture during solidification of metal melt. Journal of Physics Condensed Matter, 2012, 24, 255304.	1.8	112
14	Achieving uniform distribution and dispersion of a high percentage of nanoparticles in metal matrix nanocomposites by solidification processing. Scripta Materialia, 2013, 69, 634-637.	5.2	106
15	Atomic-Scale Mechanisms of the Glass-Forming Ability in Metallic Glasses. Physical Review Letters, 2012, 109, 105502.	7.8	103
16	In-situ characterization and quantification of melt pool variation under constant input energy density in laser powder bed fusion additive manufacturing process. Additive Manufacturing, 2019, 28, 600-609.	3.0	103
17	Shear band evolution and hardness change in cold-rolled bulk metallic glasses. Acta Materialia, 2010, 58, 4827-4840.	7.9	95
18	Revealing particle-scale powder spreading dynamics in powder-bed-based additive manufacturing process by high-speed x-ray imaging. Scientific Reports, 2018, 8, 15079.	3.3	85

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19	Nanoparticle-induced unusual melting and solidification behaviours of metals. Nature Communications, 2017, 8, 14178.	12.8	70
20	In-situ full-field mapping of melt flow dynamics in laser metal additive manufacturing. Additive Manufacturing, 2020, 31, 100939.	3.0	69
21	Design of Cu8Zr5-based bulk metallic glasses. Applied Physics Letters, 2006, 88, 241913.	3.3	67
22	Controlling process instability for defect lean metal additive manufacturing. Nature Communications, 2022, 13, 1079.	12.8	59
23	A plastic Zrâ€"Cuâ€"Agâ€"Al bulk metallic glass. Acta Materialia, 2011, 59, 1037-1047.	7.9	55
24	Catching the Ni-based ternary metallic glasses with critical diameter up to 3mm in Niâ€"Nbâ€"Zr system. Journal of Alloys and Compounds, 2007, 443, 109-113.	5.5	52
25	Synthesis of centimeter-size Ag-doped Zrâ€"Cuâ€"Al metallic glasses with large plasticity. Journal of Alloys and Compounds, 2006, 424, 176-178.	5.5	51
26	Glass formability, thermal stability and mechanical properties of La-based bulk metallic glasses. Journal of Alloys and Compounds, 2006, 424, 183-186.	5.5	48
27	Ultrasonic-Assisted Synthesis of Surface-Clean TiB₂ Nanoparticles and Their Improved Dispersion and Capture in Al-Matrix Nanocomposites. ACS Applied Materials & Interfaces, 2013, 5, 8813-8819.	8.0	48
28	Types of spatter and their features and formation mechanisms in laser powder bed fusion additive manufacturing process. Additive Manufacturing, 2020, 36, 101438.	3.0	48
29	The effect of oxidation on the corrosion resistance and mechanical properties of a Zr-based metallic glass. Corrosion Science, 2011, 53, 3557-3565.	6.6	42
30	Stress-induced softening and hardening in a bulk metallic glass. Scripta Materialia, 2008, 59, 1210-1213.	5.2	40
31	Achieving large macroscopic compressive plastic deformation and work-hardening-like behavior in a monolithic bulk metallic glass by tailoring stress distribution. Applied Physics Letters, 2008, 92, .	3.3	40
32	Atomic structure in Al-doped multicomponent bulk metallic glass. Scripta Materialia, 2010, 63, 879-882.	5.2	39
33	Assembly of metals and nanoparticles into novel nanocomposite superstructures. Scientific Reports, 2013, 3, .	3.3	38
34	Catching Fe-based bulk metallic glass with combination of high glass forming ability, ultrahigh strength and good plasticity in Feâ€"Coâ€"Nbâ€"B system. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 517, 246-248.	5.6	36
35	Bulk-Explosion-Induced Metal Spattering During Laser Processing. Physical Review X, 2019, 9, .	8.9	34
36	Atomic-scale mechanisms of tensionâ€"compression asymmetry in a metallic glass. Acta Materialia, 2013, 61, 1843-1850.	7.9	31

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37	Formation of Niâ€“Nbâ€“Zrâ€“X (X = Ti, Ta, Fe, Cu, Co) bulk metallic glasses. Journal of Alloys and Compounds, 2008, 460, 714-718.	5.5	30
38	Wear behavior of a series of Zr-based bulk metallic glasses. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 475, 124-127.	5.6	29
39	Effect of microalloying of Nb on corrosion resistance and thermal stability of ZrCu-based bulk metallic glasses. Journal of Non-Crystalline Solids, 2009, 355, 203-207.	3.1	27
40	Structural origin of the different glass-forming abilities in ZrCu and ZrNi metallic glasses. Journal of Materials Research, 2011, 26, 2098-2102.	2.6	27
41	Formation of bulk metallic glasses in Cu45Zr48â^'xAl7REx (RE=La, Ce, Nd, Gd and 0â‰¤xâ‰¤5at.%). Intermetallics, 2007, 15, 1066-1070.	3.9	26
42	Facile and scalable synthesis of Ti₅Si₃nanoparticles in molten salts for metal-matrix nanocomposites. Chemical Communications, 2014, 50, 1454-1457.	4.1	26
43	Revealing melt flow instabilities in laser powder bed fusion additive manufacturing of aluminum alloy via in-situ high-speed X-ray imaging. International Journal of Machine Tools and Manufacture, 2022, 175, 103861.	13.4	26
44	Effect of fabrication and processing technology on the biodegradability of magnesium nanocomposites. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2013, 101B, 870-877.	3.4	24
45	Ultrahigh strength binary Niâ€“Nb bulk glassy alloy composite with good ductility. Journal of Alloys and Compounds, 2007, 443, 105-108.	5.5	23
46	Phase control in immiscible Zn-Bi alloy by tungsten nanoparticles. Materials Letters, 2016, 174, 213-216.	2.6	23
47	<i>In situ</i>/<i>operando</i>synchrotron x-ray studies of metal additive manufacturing. MRS Bulletin, 2020, 45, 927-933.	3.5	22
48	Quantitative investigation of gas flow, powder-gas interaction, and powder behavior under different ambient pressure levels in laser powder bed fusion. International Journal of Machine Tools and Manufacture, 2021, 170, 103797.	13.4	21
49	Centimeter-sized (La0.5Ce0.5)-based bulk metallic glasses. Journal of Alloys and Compounds, 2006, 424, 179-182.	5.5	20
50	Ultrasonic-assisted preparation of monodisperse iron oxide nanoparticles. Materials Letters, 2007, 61, 2204-2207.	2.6	17
51	Strengthening Alâ€“Biâ€“TiC0.7N0.3 nanocomposites by Cu addition and grain refinement. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 651, 332-335.	5.6	17
52	High-speed Synchrotron X-ray Imaging of Laser Powder Bed Fusion Process. Synchrotron Radiation News, 2019, 32, 4-8.	0.8	17
53	Investigating Powder Spreading Dynamics in Additive Manufacturing Processes by <i>In-situ</i> High-speed X-ray Imaging. Synchrotron Radiation News, 2019, 32, 9-13.	0.8	16
54	Atomic and cluster level dense packing contributes to the high glass-forming ability in metallic glasses. Intermetallics, 2013, 34, 106-111.	3.9	14

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55	Tuning local structures in metallic glasses by cooling rate. Intermetallics, 2014, 44, 94-100.	3.9	14
56	Structural origin of the high glass-forming ability in Y-doped bulk metallic glasses. Journal of Materials Research, 2010, 25, 1701-1705.	2.6	13
57	In-Situ Characterization of Pore Formation Dynamics in Pulsed Wave Laser Powder Bed Fusion. Materials, 2021, 14, 2936.	2.9	13
58	Thermal oxidation effect on corrosion behavior of Zr46Cu37.6Ag8.4Al8 bulk metallic glass. Intermetallics, 2012, 22, 84-91.	3.9	12
59	Effect of core-shelled nanoparticles of carbon-coated nickel on magnesium. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2012, 546, 284-290.	5.6	12
60	A physically-based plastic constitutive model considering nanoparticle cluster effect for metal matrix nanocomposites. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2015, 641, 172-180.	5.6	12
61	Homogeneity of the superplastic Zr_{64.13}Cu_{15.75}Ni_{10.12}Al₁₀ bulk metallic glass. Journal of Materials Research, 2009, 24, 3116-3120.	2.6	11
62	Cuï£¿Zrï£¿Alï£¿Ti Bulk Metallic Glass with Enhanced Glassâ€Forming Ability, Mechanical Properties, Corrosion Resistance and Biocompatibility. Advanced Engineering Materials, 2012, 14, 195-199.	3.5	11
63	Mapping the Strain Distributions in Deformed Bulk Metallic Glasses Using Hard X-Ray Diffraction. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2012, 43, 1558-1563.	2.2	11
64	Large-scale solution synthesis of Î±-AlF3Â·3H2O nanorods under low supersaturation conditions and their conversion to porous Î²-AlF3 nanorods. Journal of Materials Chemistry, 2012, 22, 20991.	6.7	9
65	Control of fluid dynamics by nanoparticles in laser melting. Journal of Applied Physics, 2015, 117, 114901.	2.5	9
66	Mechanical properties of 7â€“10â€‰mm bone grafts and small slurry grafts in impaction bone grafting. Journal of Orthopaedic Research, 2011, 29, 1491-1495.	2.3	8
67	Mitigating keyhole pore formation by nanoparticles during laser powder bed fusion additive manufacturing. Additive Manufacturing Letters, 2022, 3, 100068.	2.1	8
68	â€œSoftâ€•atoms in Zr70Pd30 metalâ€“metal amorphous alloy. Scripta Materialia, 2010, 63, 883-886.	5.2	7
69	Effects of Particle Size Distribution with Efficient Packing on Powder Flowability and Selective Laser Melting Process. Materials, 2022, 15, 705.	2.9	7
70	Bending behavior of electrodeposited glassy Pdâ€“P and Pdâ€“Niâ€“P thin films. Scripta Materialia, 2013, 68, 455-458.	5.2	6
71	Uncertainties Induced by Processing Parameter Variation in Selective Laser Melting of Ti6Al4V Revealed by In-Situ X-ray Imaging. Materials, 2022, 15, 530.	2.9	6
72	Urchin-like AlOOH nanostructures on Al microspheres grown via in-situ oxide template. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2014, 188, 89-93.	3.5	5

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73	An instrument for <i>in situ</i> characterization of powder spreading dynamics in powder-bed-based additive manufacturing processes. Review of Scientific Instruments, 2022, 93, 043707.	1.3	5
74	Reply to the comments of Y.H. Liu: Ion sputter erosion in metallic glassâ€"A response to â€œComment on: Homogeneity of Zr64.13Cu15.75Ni10.12Al10 bulk metallic glassâ€•by L-Y. Chen, Y-W. Zeng, Q-P. Cao, B-J. Park, Y-M. Chen, K. Hono, U. Vainio, Z-L. Zhang, U. Kaiser, X-D. Wang,and J-Z Jiang [J. Mater. Res. 24, 3116 (2009)]. Journal of Materials Research, 2010, 25, 602-604.	2.6	4
75	Tension and stress relaxation behavior of a La-based bulk metallic glass. Journal of Materials Research, 2007, 22, 3303-3308.	2.6	3
76	In situ Characterization of Laser Powder Bed Fusion Using High-Speed Synchrotron X-ray Imaging Technique. Microscopy and Microanalysis, 2019, 25, 2566-2567.	0.4	2
77	In Situ Synchrotron and Neutron Characterization of Additively Manufactured Alloys. Jom, 2021, 73, 174-176.	1.9	2
78	High Performance Mg6Zn Nanocomposites Fabricated through Friction Stir Processing. , 2015, , 383-386.		2
79	Initiation and evolution of shear bands in bulk metallic glass under tensionâ€"An in situ scanning electron microscopy observation. Journal of Materials Research, 2009, 24, 2924-2930.	2.6	1
80	Fabrication of Hierarchical Metallic Nanocomposite Core/Metal Shell Nanostructures by Self-Assembly. Journal of Nanoscience and Nanotechnology, 2015, 15, 5479-5483.	0.9	0