Bao-An Sun

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/146375/publications.pdf

Version: 2024-02-01

87 papers	3,393 citations	159585 30 h-index	155660 55 g-index
88 all docs	88 docs citations	88 times ranked	1971 citing authors

#	Article	IF	Citations
1	The fracture of bulk metallic glasses. Progress in Materials Science, 2015, 74, 211-307.	32.8	421
2	Evolution of hidden localized flow during glass-to-liquid transition in metallic glass. Nature Communications, 2014, 5, 5823.	12.8	251
3	Plasticity of Ductile Metallic Glasses: A Self-Organized Critical State. Physical Review Letters, 2010, 105, 035501.	7.8	240
4	Serrated flow and stickâ€“slip deformation dynamics in the presence of shear-band interactions for a Zr-based metallic glass. Acta Materialia, 2012, 60, 4160-4171.	7.9	193
5	Hierarchical nanostructured aluminum alloy with ultrahigh strength and large plasticity. Nature Communications, 2019, 10, 5099.	12.8	97
6	Evolution of structural and dynamic heterogeneities and activation energy distribution of deformation units in metallic glass. Applied Physics Letters, 2013, 102, .	3.3	86
7	Fragility of superheated melts and glass-forming ability in Al-based alloys. Physics Letters, Section A: General, Atomic and Solid State Physics, 2005, 335, 61-67.	2.1	83
8	Fabrication and mechanical properties of Al-based metal matrix composites reinforced with Mg65Cu20Zn5Y10 metallic glass particles. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2014, 600, 53-58.	5.6	82
9	Hybrid nanostructured aluminum alloy with super-high strength. NPG Asia Materials, 2015, 7, e229-e229.	7.9	82
10	Origin of Intermittent Plastic Flow and Instability of Shear Band Sliding in Bulk Metallic Glasses. Physical Review Letters, 2013, 110, 225501.	7.8	72
11	Correlation between viscosity of molten Cuâ€“Sn alloys and phase diagram. Physica B: Condensed Matter, 2007, 387, 1-5.	2.7	67
12	Stress-induced structural inhomogeneity and plasticity of bulk metallic glasses. Scripta Materialia, 2009, 61, 640-643.	5.2	64
13	Shear-band affected zone revealed by magnetic domains in a ferromagnetic metallic glass. Nature Communications, 2018, 9, 4414.	12.8	62
14	Hidden order in serrated flow of metallic glasses. Acta Materialia, 2011, 59, 4482-4493.	7.9	60
15	Correlation between internal states and plasticity in bulk metallic glass. Applied Physics Letters, 2011, 98, .	3.3	56
16	Effect of size and base-element on the jerky flow dynamics in metallic glass. Acta Materialia, 2014, 63, 180-190.	7.9	54
17	Aluminum-rich bulk metallic glasses. Scripta Materialia, 2008, 59, 1159-1162.	5.2	48
18	Correlation between the microstructures and the deformation mechanisms of CuZr-based bulk metallic glass composites. AIP Advances, 2013, 3, .	1.3	48

#	Article	IF	Citations
19	Formation of Zrâ€“Coâ€“Al bulk metallic glasses with high strength and large plasticity. Intermetallics, 2012, 31, 282-286.	3.9	44
20	Fractal nature of multiple shear bands in severely deformed metallic glass. Applied Physics Letters, 2011, 98, .	3.3	43
21	Mechanical behavior of Al-based matrix composites reinforced with Mg58Cu28.5Gd11Ag2.5 metallic glasses. Advanced Powder Technology, 2014, 25, 635-639.	4.1	41
22	A quasi-phase perspective on flow units of glass transition and plastic flow in metallic glasses. Journal of Non-Crystalline Solids, 2013, 376, 76-80.	3.1	40
23	Crossover from stochastic activation to cooperative motions of shear transformation zones in metallic glasses. Applied Physics Letters, 2013, 103, 081904.	3.3	38
24	Hierarchical densification and negative thermal expansion in Ce-based metallic glass under high pressure. Nature Communications, 2015, 6, 5703.	12.8	38
25	Softening-induced plastic flow instability and indentation size effect in metallic glass. Journal of the Mechanics and Physics of Solids, 2015, 77, 70-85.	4.8	36
26	Formation of Cuâ€“Zrâ€“Alâ€“Er bulk metallic glass composites with enhanced deformability. Intermetallics, 2012, 30, 132-138.	3.9	35
27	Signature of local stress states in the deformation behavior of metallic glasses. NPG Asia Materials, 2020, 12, .	7.9	35
28	Nanostructured Metallic Glass in a Highly Upgraded Energy State Contributing to Efficient Catalytic Performance. Advanced Materials, 2022, 34, e2200850.	21.0	34
29	Stable fracture of a malleable Zr-based bulk metallic glass. Journal of Applied Physics, 2012, 112, .	2.5	33
30	Intrinsic versus extrinsic effects on serrated flow of bulk metallic glasses. Intermetallics, 2015, 66, 31-39.	3.9	33
31	Observation of cavitation governing fracture in glasses. Science Advances, 2021, 7, .	10.3	33
32	Effect of Fe addition on glass forming ability and mechanical properties in Zrâ€“Coâ€“Alâ€“(Fe) bulk metallic glasses. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2012, 539, 124-127.	5.6	30
33	Composition mediated serration dynamics in Zr-based bulk metallic glasses. Applied Physics Letters, 2015, 107, .	3.3	30
34	Ductile FeNi-based bulk metallic glasses with high strength and excellent soft magnetic properties. Journal of Alloys and Compounds, 2018, 742, 318-324.	5.5	29
35	Thermal stability and mechanical properties of Cu46Zr46Ag8 bulk metallic glass and its composites. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 559, 711-718.	5.6	28
36	Cryogenic-temperature-induced structural transformation of a metallic glass. Materials Research Letters, 2017, 5, 284-291.	8.7	28

#	Article	IF	Citations
37	Structures and Functional Properties of Amorphous Alloys. Small Structures, 2021, 2, 2000057.	12.0	28
38	Effect of Ti substitution on glass-forming ability and mechanical properties of a brittle Cuâ€“Zrâ€“Al bulk metallic glass. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 563, 112-116.	5.6	27
39	How hot is a shear band in a metallic glass?. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 651, 321-331.	5.6	27
40	Characterization of mechanical heterogeneity in amorphous solids. Journal of Applied Physics, 2012, 112, .	2.5	25
41	Effects of Ni and Si additions on mechanical properties and serrated flow behavior in FeMoPCB bulk metallic glasses. Journal of Alloys and Compounds, 2019, 783, 555-564.	5.5	25
42	Interface design enabled manufacture of giant metallic glasses. Science China Materials, 2021, 64, 964-972.	6.3	25
43	A novel FeNi-based bulk metallic glass with high notch toughness over 70ÂMPaÂm1/2 combined with excellent soft magnetic properties. Materials and Design, 2020, 191, 108597.	7.0	24
44	Structural Signature of Plasticity Unveiled by Nano-Scale Viscoelastic Contact in a Metallic Glass. Scientific Reports, 2016, 6, 29357.	3.3	21
45	Effects of Ce and Mm additions on the glass forming ability of Alâ€“Niâ€“Si metallic glass alloys. Journal of Alloys and Compounds, 2007, 440, L8-L12.	5.5	20
46	Non-repeatability of large plasticity for Fe-based bulk metallic glasses. Journal of Alloys and Compounds, 2016, 676, 209-214.	5.5	20
47	Nanoscale Structural Evolution and Anomalous Mechanical Response of Nanoglasses by Cryogenic Thermal Cycling. Nano Letters, 2018, 18, 4188-4194.	9.1	20
48	Various sizes of sliding event bursts in the plastic flow of metallic glasses based on a spatiotemporal dynamic model. Journal of Applied Physics, 2014, 116, .	2.5	19
49	Hidden order in the fracture surface morphology of metallic glasses. Acta Materialia, 2012, 60, 6952-6960.	7.9	18
50	The Critical Criterion on Runaway Shear Banding in Metallic Glasses. Scientific Reports, 2016, 6, 21388.	3.3	18
51	Boson-peak-like anomaly caused by transverse phonon softening in strain glass. Nature Communications, 2021, 12, 5755.	12.8	18
52	On low-temperature strength and tensile ductility of bulk metallic glass composites containing stable or shape memory Î²-Ti crystals. Acta Materialia, 2022, 222, 117444.	7.9	17
53	Fragility of superheated melts in Alâ€“RE (Ce, Nd, Pr) alloy system. Materials Characterization, 2008, 59, 820-823.	4.4	16
54	Delayed shear banding and evolution of local plastic flow in a metallic glass. Applied Physics Letters, 2014, 105, .	3.3	16

#	Article	IF	Citations
55	Chaotic state to self-organized critical state transition of serrated flow dynamics during brittle-to-ductile transition in metallic glass. Journal of Applied Physics, 2016, 119, 054902.	2.5	16
56	Local melting to design strong and plastically deformable bulk metallic glass composites. Scientific Reports, 2017, 7, 42518.	3.3	16
57	Cooperative Shear in Bulk Metallic Glass Composites Containing Metastable Î² -Ti Dendrites. Physical Review Letters, 2020, 125, 055501.	7.8	16
58	In situ high-energy X-ray diffraction study of thermally-activated martensitic transformation far below room temperature in CuZr-based bulk metallic glass composites. Journal of Alloys and Compounds, 2020, 841, 155781.	5.5	16
59	Hump peak formation and the crystallization in amorphous Al87Co10Ce3 alloy. Materials Letters, 2007, 61, 111-114.	2.6	15
60	Shear-banding Induced Indentation Size Effect in Metallic Glasses. Scientific Reports, 2016, 6, 28523.	3.3	15
61	Eutectic crystallization during fracture of Zrâ€“Cuâ€“Coâ€“Al metallic glass. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 657, 210-214.	5.6	14
62	Butterfly-wing hierarchical metallic glassy nanostructure for surface enhanced Raman scattering. Nano Research, 2019, 12, 2808-2814.	10.4	14
63	Probing Stochastic Nano-Scale Inelastic Events in Stressed Amorphous Metal. Scientific Reports, 2014, 4, 6699.	3.3	13
64	Dual self-organised shear banding behaviours and enhanced ductility in phase separating Zr-based bulk metallic glasses. Philosophical Magazine, 2018, 98, 1744-1764.	1.6	13
65	Correlation between deformation behavior and atomic-scale heterogeneity in Fe-based bulk metallic glasses. Journal of Materials Science and Technology, 2021, 65, 54-60.	10.7	13
66	Pronounced Î²-relaxation in plastic FeNi-based bulk metallic glasses and its structural origin. Intermetallics, 2021, 136, 107234.	3.9	13
67	Formation and interesting thermal expansion behavior of novel Sm-based bulk metallic glasses. Intermetallics, 2007, 15, 929-933.	3.9	11
68	Effect of cold-rolling on the crystallization behavior of a CuZr-based bulk metallic glass. Journal of Materials Science, 2013, 48, 6825-6832.	3.7	11
69	Origin of Shear Stability and Compressive Ductility Enhancement of Metallic Glasses by Metal Coating. Scientific Reports, 2016, 6, 27852.	3.3	11
70	Rate Dependence of Serrated Flow and Its Effect on Shear Stability of Bulk Metallic Glasses. Journal of Iron and Steel Research International, 2016, 23, 24-30.	2.8	11
71	The structural and dynamic heterogeneities of Ni-P nanoglass characterized by stress-relaxation. Journal of Alloys and Compounds, 2020, 836, 155506.	5.5	11
72	Serrated plastic flow behavior and microstructure in a Zr-based bulk metallic glass processed by surface mechanical attrition treatment. Journal of Iron and Steel Research International, 2017, 24, 475-482.	2.8	10

#	Article	IF	Citations
73	Medium-Range Order Structure and Fragility of Superheated Melts of Amorphous CuHf Alloys. Chinese Physics Letters, 2006, 23, 1864-1867.	3.3	9
74	Stability of shear banding process in bulk metallic glasses and composites. Journal of Materials Research, 2017, 32, 2560-2569.	2.6	9
75	Stress relief by annealing under external stress in Fe-based metallic glasses. Journal of Applied Physics, 2018, 124, 165108.	2.5	9
76	Chaotic dynamics in shear-band-mediated plasticity of metallic glasses. Physical Review B, 2020, 101, .	3.2	9
77	The formation mechanism of novel Feâ€“Pâ€“B metallic glasses: A perspective from nearly free electron model. Journal of Alloys and Compounds, 2015, 620, 358-360.	5.5	8
78	Unusually thick shear-softening surface of micrometer-size metallic glasses. Innovation(China), 2021, 2, 100106.	9.1	7
79	Optimum shear stability at intermittent-to-smooth transition of plastic flow in metallic glasses at cryogenic temperatures. Materialia, 2020, 9, 100559.	2.7	6
80	Evident glass relaxation at room temperature induced by size effect. Physical Review B, 2022, 105, .	3.2	4
81	Extracting governing system for the plastic deformation of metallic glasses using machine learning. Science China: Physics, Mechanics and Astronomy, 2022, 65, 1.	5.1	4
82	Fiber metallic glass laminates. Journal of Materials Research, 2010, 25, 2287-2291.	2.6	2
83	Fast mobility induced self-lubrication at metallic glass surface. Journal of Applied Physics, 2021, 129, .	2.5	2
84	Novel Ta46.5W35Co18.5 thin film metallic glass with excellent corrosion resistance, high hardness and good thermal stability. Journal of Alloys and Compounds, 2022, 890, 161874.	5.5	2
85	Extracting compressive stress-strain curve based on stick-slip shear banding process in bulk metallic glasses. Journal of Iron and Steel Research International, 2017, 24, 372-377.	2.8	1
86	Quantifying configuration-entropy change during plastic flow of metallic glasses. Journal of Applied Physics, 2019, 126, 235102.	2.5	0
87	Exceptionally shear-stable and ultra-strong Ir-Ni-Ta high-temperature metallic glasses at micro/nano scales. Science China Materials, 0, , 1.	6.3	0