Bernd Gludovatz

List of Publications by Year
in descending order

74 papers	12,034 citations	61857 43 h-index	74018 75 g-index
76 all docs	76 docs citations	76 times ranked	8934 citing authors

#	Article	IF	Citations
1	A fracture-resistant high-entropy alloy for cryogenic applications. Science, 2014, 345, 1153-1158.	6.0	3,982
2	Exceptional damage-tolerance of a medium-entropy alloy CrCoNi at cryogenic temperatures. Nature Communications, 2016, 7, 10602.	5.8	1,175
3	Recent progress in research on tungsten materials for nuclear fusion applications in Europe. Journal of Nuclear Materials, 2013, 432, 482-500.	1.3	610
4	Nanoscale origins of the damage tolerance of the high-entropy alloy CrMnFeCoNi. Nature Communications, 2015, 6, 10143.	5.8	608
5	Dislocation mechanisms and 3D twin architectures generate exceptional strength-ductility-toughness combination in CrCoNi medium-entropy alloy. Nature Communications, 2017, 8, 14390.	5.8	344
6	Natural Flexible Dermal Armor. Advanced Materials, 2013, 25, 31-48.	11.1	327
7	Bioinspired Hydroxyapatite/Poly(methyl methacrylate) Composite with a Nacreâ€Mimetic Architecture by a Bidirectional Freezing Method. Advanced Materials, 2016, 28, 50-56.	11.1	319
8	On the tear resistance of skin. Nature Communications, 2015, 6, 6649.	5.8	297
9	Mechanical adaptability of the Bouligand-type structure in natural dermal armour. Nature Communications, 2013, 4, 2634.	5.8	277
10	Processing, Microstructure and Mechanical Properties of the CrMnFeCoNi High-Entropy Alloy. Jom, 2015, 67, 2262-2270.	0.9	177
11	Real-time nanoscale observation of deformation mechanisms in CrCoNi-based medium- to high-entropy alloys at cryogenic temperatures. Materials Today, 2019, 25, 21-27.	8.3	167
12	Real-time observations of TRIP-induced ultrahigh strain hardening in a dual-phase CrMnFeCoNi high-entropy alloy. Nature Communications, 2020, 11, 826.	5.8	165
13	Fracture toughness of polycrystalline tungsten alloys. International Journal of Refractory Metals and Hard Materials, 2010, 28, 674-678.	1.7	163
14	Protective role of Arapaima gigas fish scales: Structure and mechanical behavior. Acta Biomaterialia, 2014, 10, 3599-3614.	4.1	161
15	Effect of temperature on the fatigue-crack growth behavior of the high-entropy alloy CrMnFeCoNi. Intermetallics, 2017, 88, 65-72.	1.8	160
16	Technical parameters affecting grain refinement by high pressure torsion. International Journal of Materials Research, 2009, 100, 1653-1661.	0.1	159
17	Review on the EFDA programme on tungsten materials technology and science. Journal of Nuclear Materials, 2011, 417, 463-467.	1.3	157
18	Machine-learning assisted laser powder bed fusion process optimization for AlSi10Mg: New microstructure description indices and fracture mechanisms. Acta Materialia, 2020, 201, 316-328.	3.8	133

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19	Osteocyte-Intrinsic TGF-Î² Signaling Regulates Bone Quality through Perilacunar/Canalicular Remodeling. Cell Reports, 2017, 21, 2585-2596.	2.9	128
20	Fracture resistance of human cortical bone across multiple length-scales at physiological strain rates. Biomaterials, 2014, 35, 5472-5481.	5.7	125
21	Atypical fracture with long-term bisphosphonate therapy is associated with altered cortical composition and reduced fracture resistance. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 8722-8727.	3.3	122
22	Structure and fracture resistance of alligator gar (Atractosteus spatula) armored fish scales. Acta Biomaterialia, 2013, 9, 5876-5889.	4.1	116
23	Fracture resistance of AlSi10Mg fabricated by laser powder bed fusion. Acta Materialia, 2021, 211, 116869.	3.8	108
24	Developing strength and toughness in bio-inspired silicon carbide hybrid materials containing a compliant phase. Acta Materialia, 2015, 98, 141-151.	3.8	106
25	Bioinspired nacre-like alumina with a bulk-metallic glass-forming alloy as a compliant phase. Nature Communications, 2019, 10, 961.	5.8	106
26	Fracture behaviour of tungstenâ€“vanadium and tungstenâ€“tantalum alloys and composites. Journal of Nuclear Materials, 2011, 413, 166-176.	1.3	96
27	Nanocomposites of Titanium Dioxide and Polystyrene-Poly(ethylene oxide) Block Copolymer as Solid-State Electrolytes for Lithium Metal Batteries. Journal of the Electrochemical Society, 2013, 160, A1611-A1617.	1.3	96
28	Influence of impurities on the fracture behaviour of tungsten. Philosophical Magazine, 2011, 91, 3006-3020.	0.7	93
29	On the development of ice-templated silicon carbide scaffolds for nature-inspired structural materials. Acta Materialia, 2013, 61, 6948-6957.	3.8	90
30	Size-dependent fracture toughness of bulk metallic glasses. Acta Materialia, 2014, 70, 198-207.	3.8	83
31	A Novel Approach to Developing Biomimetic (â€œNacreâ€Likeâ€) Metalâ€Compliantâ€Phase (Nickelâ€“Alumina) Ceramics through Coextrusion. Advanced Materials, 2016, 28, 10061-10067.	11.1	83
32	High temperature fracture experiments on tungstenâ€“rhenium alloys. International Journal of Refractory Metals and Hard Materials, 2010, 28, 692-697.	1.7	81
33	Temperature and load-ratio dependent fatigue-crack growth in the CrMnFeCoNi high-entropy alloy. Journal of Alloys and Compounds, 2019, 794, 525-533.	2.8	74
34	A brief summary of the progress on the EFDA tungsten materials program. Journal of Nuclear Materials, 2013, 442, S173-S180.	1.3	69
35	Intrinsic mechanical behavior of femoral cortical bone in young, osteoporotic and bisphosphonate-treated individuals in low- and high energy fracture conditions. Scientific Reports, 2016, 6, 21072.	1.6	65
36	Tetrapod Nanocrystals as Fluorescent Stress Probes of Electrospun Nanocomposites. Nano Letters, 2013, 13, 3915-3922.	4.5	58

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37	Alendronate treatment alters bone tissues at multiple structural levels in healthy canine cortical bone. Bone, 2015, 81, 352-363.	1.4	58
38	Contributions of Material Properties and Structure to Increased Bone Fragility for a Given Bone Mass in the UCD-T2DM Rat Model of Type 2 Diabetes. Journal of Bone and Mineral Research, 2018, 33, 1066-1075.	3.1	57
39	A study of size effects in bioinspired, â€œnacre-likeâ€, metal-compliant-phase (nickel-alumina) coextruded ceramics. Acta Materialia, 2018, 148, 147-155.	3.8	56
40	Electrically reversible cracks in an intermetallic film controlled by an electric field. Nature Communications, 2018, 9, 41.	5.8	53
41	Modifications to Nano- and Microstructural Quality and the Effects on Mechanical Integrity in Paget's Disease of Bone. Journal of Bone and Mineral Research, 2015, 30, 264-273.	3.1	50
42	Multiscale structure and damage tolerance of coconut shells. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 76, 76-84.	1.5	50
43	Medium-range order dictates local hardness in bulk metallic glasses. Materials Today, 2021, 44, 48-57.	8.3	47
44	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, 18419-18424.	3.3	43
45	On the fracture toughness of fine-grained Mo-3Si-1B (wt.%) alloys at ambient to elevated (1300ÂÂ°C) temperatures. Intermetallics, 2012, 20, 141-154.	1.8	41
46	Increasing M₂(dobdc) Loading in Selective Mixed-Matrix Membranes: A Rubber Toughening Approach. Chemistry of Materials, 2018, 30, 1484-1495.	3.2	41
47	Mechanical Competence and Bone Quality Develop During Skeletal Growth. Journal of Bone and Mineral Research, 2019, 34, 1461-1472.	3.1	41
48	On the understanding of the effects of sample size on the variability in fracture toughness of bulk metallic glasses. Acta Materialia, 2017, 126, 494-506.	3.8	37
49	Design considerations for high entropy alloys in advanced nuclear applications. Journal of Nuclear Materials, 2022, 567, 153814.	1.3	36
50	Damage tolerance of nuclear graphite at elevated temperatures. Nature Communications, 2017, 8, 15942.	5.8	34
51	On the Room-Temperature Mechanical Properties of an Ion-Irradiated TiZrNbHfTa Refractory High Entropy Alloy. Jom, 2020, 72, 130-138.	0.9	34
52	A Highly Fatigue-Resistant Zr-Based Bulk Metallic Glass. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2013, 44, 5688-5693.	1.1	32
53	High-temperature damage-tolerance of coextruded, bioinspired (â€œnacre-likeâ€), alumina/nickel compliant-phase ceramics. Scripta Materialia, 2019, 158, 110-115.	2.6	25
54	Effect of heat treatment on the strength and fracture resistance of a laser powder bed fusion-processed 18Ni-300 maraging steel. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2022, 844, 143167.	2.6	25

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55	Nacre toughening due to cooperative plastic deformation of stacks of co-oriented aragonite platelets. Communications Materials, 2020, 1, .	2.9	24
56	On the onset of deformation twinning in the CrFeMnCoNi high-entropy alloy using a novel tensile specimen geometry. Intermetallics, 2019, 110, 106469.	1.8	21
57	Notch fatigue of ultrahigh molecular weight polyethylene (UHMWPE) used in total joint replacements. Journal of the Mechanical Behavior of Biomedical Materials, 2016, 60, 267-279.	1.5	19
58	A study into the crack propagation resistance of pure tungsten. Engineering Fracture Mechanics, 2013, 100, 76-85.	2.0	18
59	On the Origins of Fracture Toughness in Advanced Teleosts: How the Swordfish Sword's Bone Structure and Composition Allow for Slashing under Water to Kill or Stun Prey. Advanced Science, 2019, 6, 1900287.	5.6	14
60	Compositional variations in equiatomic CrMnFeCoNi high-entropy alloys. Materials Characterization, 2021, 180, 111437.	1.9	11
61	Fracture properties of high-entropy alloys. MRS Bulletin, 2022, 47, 176-185.	1.7	11
62	Fracture toughness of ultra-high molecular weight polyethylene: A basis for defining the crack-initiation toughness in polymers. Journal of the Mechanics and Physics of Solids, 2019, 122, 435-449.	2.3	9
63	Role of pre-existing shear band morphology in controlling the fracture behavior of a Zrâ€“Tiâ€“Cuâ€“Niâ€“Al bulk metallic glass. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2020, 786, 139396.	2.6	8
64	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, .	1.5	8
65	The role of collagen in the dermal armor of the boxfish. Journal of Materials Research and Technology, 2020, 9, 13825-13841.	2.6	7
66	Impact of test environment on the fracture resistance of cortical bone. Journal of the Mechanical Behavior of Biomedical Materials, 2022, 129, 105155.	1.5	7
67	High temperature x-ray micro-tomography. AIP Conference Proceedings, 2016, , .	0.3	6
68	Synchrotron X-ray micro-tomography at the Advanced Light Source: Developments in high-temperature in-situ mechanical testing. Journal of Physics: Conference Series, 2017, 849, 012043.	0.3	6
69	Anisotropic fracture resistance of avian eggshell. Journal of the Mechanical Behavior of Biomedical Materials, 2020, 110, 103888.	1.5	6
70	Deformation-induced medium-range order changes in bulk metallic glasses. Physical Review Materials, 2022, 6, .	0.9	4
71	Correction to Tetrapod Nanocrystals as Fluorescent Stress Probes of Electrospun Nanocomposites. Nano Letters, 2013, 13, 5762-5762.	4.5	1
72	Biomimetics: On the Origins of Fracture Toughness in Advanced Teleosts: How the Swordfish Sword's Bone Structure and Composition Allow for Slashing under Water to Kill or Stun Prey (Adv. Sci.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 57	5.6	0

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73	Atom Probe Analysis of a Zr-based Bulk Metallic Glass. Microscopy and Microanalysis, 2022, 28, 1348-1358.	0.2	1
74	On the Fracture Behavior of Bulk Metallic Glasses. Structural Integrity, 2019, , 331-332.	0.8	0