

Bernd Gludovatz

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72
papers

8,272
citations

38
h-index

76
g-index

76
ext. papers

10,224
ext. citations

8.6
avg, IF

6.15
L-index

#	Paper	IF	Citations
72	A fracture-resistant high-entropy alloy for cryogenic applications. <i>Science</i> , 2014 , 345, 1153-8	33.3	2700
71	Exceptional damage-tolerance of a medium-entropy alloy CrCoNi at cryogenic temperatures. <i>Nature Communications</i> , 2016 , 7, 10602	17.4	711
70	Recent progress in research on tungsten materials for nuclear fusion applications in Europe. <i>Journal of Nuclear Materials</i> , 2013 , 432, 482-500	3.3	494
69	Nanoscale origins of the damage tolerance of the high-entropy alloy CrMnFeCoNi. <i>Nature Communications</i> , 2015 , 6, 10143	17.4	451
68	Bioinspired Hydroxyapatite/Poly(methyl methacrylate) Composite with a Nacre-Mimetic Architecture by a Bidirectional Freezing Method. <i>Advanced Materials</i> , 2016 , 28, 50-6	24	245
67	Natural flexible dermal armor. <i>Advanced Materials</i> , 2013 , 25, 31-48	24	241
66	Dislocation mechanisms and 3D twin architectures generate exceptional strength-ductility-toughness combination in CrCoNi medium-entropy alloy. <i>Nature Communications</i> , 2017 , 8, 14390	17.4	231
65	On the tear resistance of skin. <i>Nature Communications</i> , 2015 , 6, 6649	17.4	206
64	Mechanical adaptability of the Bouligand-type structure in natural dermal armour. <i>Nature Communications</i> , 2013 , 4, 2634	17.4	202
63	Technical parameters affecting grain refinement by high pressure torsion. <i>International Journal of Materials Research</i> , 2009 , 100, 1653-1661	0.5	142
62	Review on the EFDA programme on tungsten materials technology and science. <i>Journal of Nuclear Materials</i> , 2011 , 417, 463-467	3.3	139
61	Processing, Microstructure and Mechanical Properties of the CrMnFeCoNi High-Entropy Alloy. <i>Jom</i> , 2015 , 67, 2262-2270	2.1	135
60	Fracture toughness of polycrystalline tungsten alloys. <i>International Journal of Refractory Metals and Hard Materials</i> , 2010 , 28, 674-678	4.1	131
59	Protective role of Arapaima gigas fish scales: structure and mechanical behavior. <i>Acta Biomaterialia</i> , 2014 , 10, 3599-614	10.8	115
58	Effect of temperature on the fatigue-crack growth behavior of the high-entropy alloy CrMnFeCoNi. <i>Intermetallics</i> , 2017 , 88, 65-72	3.5	110
57	Fracture resistance of human cortical bone across multiple length-scales at physiological strain rates. <i>Biomaterials</i> , 2014 , 35, 5472-81	15.6	100
56	Atypical fracture with long-term bisphosphonate therapy is associated with altered cortical composition and reduced fracture resistance. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017 , 114, 8722-8727	11.5	94

55	Nanocomposites of Titanium Dioxide and Polystyrene-Poly(ethylene oxide) Block Copolymer as Solid-State Electrolytes for Lithium Metal Batteries. <i>Journal of the Electrochemical Society</i> , 2013 , 160, A1611-A1617	3.9	89
54	Developing strength and toughness in bio-inspired silicon carbide hybrid materials containing a compliant phase. <i>Acta Materialia</i> , 2015 , 98, 141-151	8.4	87
53	Structure and fracture resistance of alligator gar (<i>Atractosteus spatula</i>) armored fish scales. <i>Acta Biomaterialia</i> , 2013 , 9, 5876-89	10.8	86
52	Fracture behaviour of tungsten-manganese and tungsten-tantalum alloys and composites. <i>Journal of Nuclear Materials</i> , 2011 , 413, 166-176	3.3	85
51	Real-time nanoscale observation of deformation mechanisms in CrCoNi-based medium- to high-entropy alloys at cryogenic temperatures. <i>Materials Today</i> , 2019 , 25, 21-27	21.8	81
50	Size-dependent fracture toughness of bulk metallic glasses. <i>Acta Materialia</i> , 2014 , 70, 198-207	8.4	79
49	Influence of impurities on the fracture behaviour of tungsten. <i>Philosophical Magazine</i> , 2011 , 91, 3006-3026	3.6	74
48	On the development of ice-templated silicon carbide scaffolds for nature-inspired structural materials. <i>Acta Materialia</i> , 2013 , 61, 6948-6957	8.4	73
47	Real-time observations of TRIP-induced ultrahigh strain hardening in a dual-phase CrMnFeCoNi high-entropy alloy. <i>Nature Communications</i> , 2020 , 11, 826	17.4	72
46	Osteocyte-Intrinsic TGF- β Signaling Regulates Bone Quality through Perilacunar/Canalicular Remodeling. <i>Cell Reports</i> , 2017 , 21, 2585-2596	10.6	71
45	High temperature fracture experiments on tungsten-manganese alloys. <i>International Journal of Refractory Metals and Hard Materials</i> , 2010 , 28, 692-697	4.1	65
44	A brief summary of the progress on the EFDA tungsten materials program. <i>Journal of Nuclear Materials</i> , 2013 , 442, S173-S180	3.3	63
43	Tetrapod nanocrystals as fluorescent stress probes of electrospun nanocomposites. <i>Nano Letters</i> , 2013 , 13, 3915-22	11.5	54
42	Bioinspired nacre-like alumina with a bulk-metallic glass-forming alloy as a compliant phase. <i>Nature Communications</i> , 2019 , 10, 961	17.4	54
41	A Novel Approach to Developing Biomimetic ("Nacre-Like") Metal-Compliant-Phase (Nickel-Alumina) Ceramics through Coextrusion. <i>Advanced Materials</i> , 2016 , 28, 10061-10067	24	53
40	Temperature and load-ratio dependent fatigue-crack growth in the CrMnFeCoNi high-entropy alloy. <i>Journal of Alloys and Compounds</i> , 2019 , 794, 525-533	5.7	45
39	Alendronate treatment alters bone tissues at multiple structural levels in healthy canine cortical bone. <i>Bone</i> , 2015 , 81, 352-363	4.7	45
38	Intrinsic mechanical behavior of femoral cortical bone in young, osteoporotic and bisphosphonate-treated individuals in low- and high energy fracture conditions. <i>Scientific Reports</i> , 2016 , 6, 21072	4.9	44

37	Machine-learning assisted laser powder bed fusion process optimization for AlSi10Mg: New microstructure description indices and fracture mechanisms. <i>Acta Materialia</i> , 2020 , 201, 316-328	8.4	43
36	Electrically reversible cracks in an intermetallic film controlled by an electric field. <i>Nature Communications</i> , 2018 , 9, 41	17.4	42
35	Modifications to nano- and microstructural quality and the effects on mechanical integrity in Paget's disease of bone. <i>Journal of Bone and Mineral Research</i> , 2015 , 30, 264-73	6.3	40
34	Enhanced fatigue endurance of metallic glasses through a staircase-like fracture mechanism. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, 18419-24	11.5	36
33	Increasing M2(dobdc) Loading in Selective Mixed-Matrix Membranes: A Rubber Toughening Approach. <i>Chemistry of Materials</i> , 2018 , 30, 1484-1495	9.6	34
32	On the fracture toughness of fine-grained Mo-3Si-1B (wt.%) alloys at ambient to elevated (1300°C) temperatures. <i>Intermetallics</i> , 2012 , 20, 141-154	3.5	34
31	A study of size effects in bioinspired, brick-like metal-compliant-phase (nickel-alumina) coextruded ceramics. <i>Acta Materialia</i> , 2018 , 148, 147-155	8.4	30
30	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. <i>Journal of Bone and Mineral Research</i> , 2018 , 33, 1066-1075	6.3	30
29	Mechanical Competence and Bone Quality Develop During Skeletal Growth. <i>Journal of Bone and Mineral Research</i> , 2019 , 34, 1461-1472	6.3	28
28	A Highly Fatigue-Resistant Zr-Based Bulk Metallic Glass. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2013 , 44, 5688-5693	2.3	28
27	On the understanding of the effects of sample size on the variability in fracture toughness of bulk metallic glasses. <i>Acta Materialia</i> , 2017 , 126, 494-506	8.4	27
26	Multiscale structure and damage tolerance of coconut shells. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2017 , 76, 76-84	4.1	27
25	Fracture resistance of AlSi10Mg fabricated by laser powder bed fusion. <i>Acta Materialia</i> , 2021 , 211, 116869	6.4	27
24	Damage tolerance of nuclear graphite at elevated temperatures. <i>Nature Communications</i> , 2017 , 8, 15942	7.4	20
23	On the Room-Temperature Mechanical Properties of an Ion-Irradiated TiZrNbHfTa Refractory High Entropy Alloy. <i>Jom</i> , 2020 , 72, 130-138	2.1	19
22	A study into the crack propagation resistance of pure tungsten. <i>Engineering Fracture Mechanics</i> , 2013 , 100, 76-85	4.2	18
21	Medium-range order dictates local hardness in bulk metallic glasses. <i>Materials Today</i> , 2021 , 44, 48-57	21.8	17
20	On the onset of deformation twinning in the CrFeMnCoNi high-entropy alloy using a novel tensile specimen geometry. <i>Intermetallics</i> , 2019 , 110, 106469	3.5	15

19	Notch fatigue of ultrahigh molecular weight polyethylene (UHMWPE) used in total joint replacements. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2016 , 60, 267-279	4.1	15
18	Nacre toughening due to cooperative plastic deformation of stacks of co-oriented aragonite platelets. <i>Communications Materials</i> , 2020 , 1,	6	10
17	High-temperature damage-tolerance of coextruded, bioinspired (nacre-like) alumina/nickel compliant-phase ceramics. <i>Scripta Materialia</i> , 2019 , 158, 110-115	5.6	10
16	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. <i>Advanced Science</i> , 2019 , 6, 1900287	13.6	8
15	Synchrotron X-ray micro-tomography at the Advanced Light Source: Developments in high-temperature in-situ mechanical testing. <i>Journal of Physics: Conference Series</i> , 2017 , 849, 012043	0.3	6
14	Role of pre-existing shear band morphology in controlling the fracture behavior of a ZrTiCuNiAl bulk metallic glass. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020 , 786, 139396	5.3	5
13	Fracture toughness of ultra-high molecular weight polyethylene: A basis for defining the crack-initiation toughness in polymers. <i>Journal of the Mechanics and Physics of Solids</i> , 2019 , 122, 435-449 ⁵		5
12	Design considerations for high entropy alloys in advanced nuclear applications. <i>Journal of Nuclear Materials</i> , 2022 , 567, 153814	3.3	4
11	The role of collagen in the dermal armor of the boxfish. <i>Journal of Materials Research and Technology</i> , 2020 , 9, 13825-13841	5.5	3
10	High temperature x-ray micro-tomography 2016 ,		3
9	Compositional variations in equiatomic CrMnFeCoNi high-entropy alloys. <i>Materials Characterization</i> , 2021 , 180, 111437	3.9	3
8	Anisotropic fracture resistance of avian eggshell. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2020 , 110, 103888	4.1	2
7	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. 12/2019). <i>Advanced Science</i> , 2019 , 6, 1970072	13.6	1
6	Effect of heat treatment on the strength and fracture resistance of a laser powder bed fusion-processed 18Ni-300 maraging steel. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2022 , 143167	5.3	1
5	Fracture properties of high-entropy alloys. <i>MRS Bulletin</i> , ¹	3.2	0
4	Impact of test environment on the fracture resistance of cortical bone.. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2022 , 129, 105155	4.1	0
3	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. <i>Applied Physics Letters</i> , 2021 , 119, 261903	3.4	0
2	On the Fracture Behavior of Bulk Metallic Glasses. <i>Structural Integrity</i> , 2019 , 331-332	0.2	

1 Atom Probe Analysis of a Zr-based Bulk Metallic Glass. *Microscopy and Microanalysis*, 1-11

0.5