Robert O. Ritchie

List of Publications by Year
in descending order

750	73,623	519 128	884 243
papers	citations	h-index	g-index

777	777	777	37144
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	A fracture-resistant high-entropy alloy for cryogenic applications. Science, 2014, 345, 1153-1158.	12.9	3,982
2	Bioinspired structural materials. Nature Materials, 2015, 14, 23-36.	28.4	3,284
3	The conflicts between strength and toughness. Nature Materials, 2011, 10, 817-822.	28.4	2,543
4	High-entropy alloys. Nature Reviews Materials, 2019, 4, 515-534.	49.1	2,188
5	Tough, Bio-Inspired Hybrid Materials. Science, 2008, 322, 1516-1520.	12.9	1,531
6	On the relationship between critical tensile stress and fracture toughness in mild steel. Journal of the Mechanics and Physics of Solids, 1973, 21, 395-410.	4.9	1,338
7	Exceptional damage-tolerance of a medium-entropy alloy CrCoNi at cryogenic temperatures. Nature Communications, 2016, 7, 10602.	13.1	1,175
8	Direct mechanical measurement of the tensile strength and elastic modulus of multiwalled carbon nanotubes. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2002, 334, 173-178.	5.6	951
9	Tuning element distribution, structure and properties by composition in high-entropy alloys. Nature, 2019, 574, 223-227.	28.3	874
10	Mechanisms of fatigue-crack propagation in ductile and brittle solids. International Journal of Fracture, 1999, 100, 55-83.	2.2	728
11	Mechanisms of fatigue crack propagation in metals, ceramics and composites: Role of crack tip shielding. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1988, 103, 15-28.	5.6	720
12	On the Fracture Toughness of Advanced Materials. Advanced Materials, 2009, 21, 2103-2110.	21.7	679
13	Short-range order and its impact on the CrCoNi medium-entropy alloy. Nature, 2020, 581, 283-287.	28.3	672
14	Mechanistic fracture criteria for the failure of human cortical bone. Nature Materials, 2003, 2, 164-168.	28.4	642
15	Mechanical properties of high-entropy alloys with emphasis on face-centered cubic alloys. Progress in Materials Science, 2019, 102, 296-345.	33.2	634
16	Nanoscale origins of the damage tolerance of the high-entropy alloy CrMnFeCoNi. Nature Communications, 2015, 6, 10143.	13.1	608
17	A damage-tolerant glass. Nature Materials, 2011, 10, 123-128.	28.4	562
18	On the Mechanistic Origins of Toughness in Bone. Annual Review of Materials Research, 2010, 40, 25-53.	9.7	560

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19	Functional gradients and heterogeneities in biological materials: Design principles, functions, and bioinspired applications. Progress in Materials Science, 2017, 88, 467-498.	33.2	554
20	Enhancing radiation tolerance by controlling defect mobility and migration pathways in multicomponent single-phase alloys. Nature Communications, 2016, 7, 13564.	13.1	533
21	Heterostructured materials: superior properties from hetero-zone interaction. Materials Research Letters, 2021, 9, 1-31.	8.8	505
22	Tunable stacking fault energies by tailoring local chemical order in CrCoNi medium-entropy alloys. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 8919-8924.	7.3	495
23	Influence of chemical disorder on energy dissipation and defect evolution in concentrated solid solution alloys. Nature Communications, 2015, 6, 8736.	13.1	477
24	The true toughness of human cortical bone measured with realistically short cracks. Nature Materials, 2008, 7, 672-677.	28.4	453
25	On the influence of mechanical surface treatmentsâ€”deep rolling and laser shock peeningâ€”on the fatigue behavior of Tiâ€“6Alâ€“4V at ambient and elevated temperatures. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2003, 355, 216-230.	5.6	428
26	Fracture toughness and fatigue-crack propagation in a Zrâ€“Tiâ€“Niâ€“Cuâ€“Be bulk metallic glass. Applied Physics Letters, 1997, 71, 476-478.	3.4	424
27	A geometric model for fatigue crack closure induced by fracture surface roughness. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1982, 13, 1627-1631.	1.4	400
28	Encapsulation of Perovskite Nanocrystals into Macroscale Polymer Matrices: Enhanced Stability and Polarization. ACS Applied Materials & Interfaces, 2016, 8, 35523-35533.	8.2	398
29	The dentinâ€“enamel junction and the fracture of human teeth. Nature Materials, 2005, 4, 229-232.	28.4	381
30	Grain-boundary engineering markedly reduces susceptibility to intergranular hydrogen embrittlement in metallic materials. Acta Materialia, 2009, 57, 4148-4157.	7.9	373
31	A statistical, physical-based, micro-mechanical model of hydrogen-induced intergranular fracture in steel. Journal of the Mechanics and Physics of Solids, 2010, 58, 206-226.	4.9	361
32	Dislocation mechanisms and 3D twin architectures generate exceptional strength-ductility-toughness combination in CrCoNi medium-entropy alloy. Nature Communications, 2017, 8, 14390.	13.1	344
33	Propagation of short fatigue cracks. International Materials Reviews, 1984, 29, 445-475.	19.5	344
34	Multiscale Toughening Mechanisms in Biological Materials and Bioinspired Designs. Advanced Materials, 2019, 31, e1901561.	21.7	342
35	Bioinspired large-scale aligned porous materials assembled with dual temperature gradients. Science Advances, 2015, 1, e1500849.	10.5	336
36	Natural Flexible Dermal Armor. Advanced Materials, 2013, 25, 31-48.	21.7	327

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37	Age-related changes in the plasticity and toughness of human cortical bone at multiple length scales. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 14416-14421.	7.3	325
38	Bioinspired Hydroxyapatite/Poly(methyl methacrylate) Composite with a Nacreâ€Mimetic Architecture by a Bidirectional Freezing Method. Advanced Materials, 2016, 28, 50-56.	21.7	319
39	Architected cellular materials: A review on their mechanical properties towards fatigue-tolerant design and fabrication. Materials Science and Engineering Reports, 2021, 144, 100606.	32.1	316
40	Mechanical fatigue and fracture of Nitinol. International Materials Reviews, 2012, 57, 1-37.	19.5	306
41	On the tear resistance of skin. Nature Communications, 2015, 6, 6649.	13.1	297
42	Carbon nanotubes as nanoscale mass conveyors. Nature, 2004, 428, 924-927.	28.3	291
43	Mechanistic aspects of fracture and R-curve behavior in human cortical bone. Biomaterials, 2005, 26, 217-231.	11.7	288
44	On macroscopic and microscopic analyses for crack initiation and crack growth toughness in ductile alloys. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1985, 16, 233-248.	1.4	285
45	Hydrogen-induced intergranular failure in nickel revisited. Acta Materialia, 2012, 60, 2739-2745.	7.9	282
46	Plasticity and toughness in bone. Physics Today, 2009, 62, 41-47.	0.3	281
47	Designing highly toughened hybrid composites through nature-inspired hierarchical complexity. Acta Materialia, 2009, 57, 2919-2932.	7.9	278
48	Mechanical adaptability of the Bouligand-type structure in natural dermal armour. Nature Communications, 2013, 4, 2634.	13.1	277
49	Evaluation of toughness in AISI 4340 alloy steel austenitized at low and high temperatures. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1976, 7, 831-838.	1.4	258
50	Mechanisms of fatigue crack growth in low alloy steel. Acta Metallurgica, 1973, 21, 639-648.	2.1	251
51	Characterization of the effects of x-ray irradiation on the hierarchical structure and mechanical properties of human cortical bone. Biomaterials, 2011, 32, 8892-8904.	11.7	250
52	A novel biomimetic approach to the design of high-performance ceramicâ€“metal composites. Journal of the Royal Society Interface, 2010, 7, 741-753.	3.4	247
53	Real-time quantitative imaging of failure events in materials under load at temperatures above 1,600â€‰Â°C. Nature Materials, 2013, 12, 40-46.	28.4	243
54	Mechanisms of tempered martensite embrittlement in low alloy steels. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1978, 9, 1039-1053.	1.4	242

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55	Directing mesenchymal stem cells to bone to augment bone formation and increase bone mass. Nature Medicine, 2012, 18, 456-462.	30.9	242
56	Decrease in the osteocyte lacunar density accompanied by hypermineralized lacunar occlusion reveals failure and delay of remodeling in aged human bone. Aging Cell, 2010, 9, 1065-1075.	6.8	241
57	High pressure synthesis of a hexagonal close-packed phase of the high-entropy alloy CrMnFeCoNi. Nature Communications, 2017, 8, 15634.	13.1	241
58	Influence of microstructure on high-cycle fatigue of Ti-6Al-4V: Bimodal vs. lamellar structures. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2002, 33, 899-918.	2.2	240
59	Microindentation for in vivo measurement of bone tissue mechanical properties in humans. Journal of Bone and Mineral Research, 2010, 25, 1877-1885.	2.8	237
60	Some considerations on fatigue crack closure at near-threshold stress intensities due to fracture surface morphology. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1982, 13, 937-940.	1.4	230
61	On the effect of deep-rolling and laser-peening on the stress-controlled low- and high-cycle fatigue behavior of Tiâ€“6Alâ€“4V at elevated temperatures up to 550Â°C. International Journal of Fatigue, 2012, 44, 292-302.	5.7	230
62	Effect of orientation on the in vitro fracture toughness of dentin: the role of toughening mechanisms. Biomaterials, 2003, 24, 3955-3968.	11.7	226
63	Mechanisms for fracture and fatigue-crack propagation in a bulk metallic glass. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1999, 30, 1739-1753.	2.2	225
64	Moâ€Siâ€B Alloys for Ultrahighâ€Temperature Structural Applications. Advanced Materials, 2012, 24, 3445-3480.	21.7	225
65	Hydrogen-enhanced-plasticity mediated decohesion for hydrogen-induced intergranular and â€œquasi-cleavageâ€•fracture of lath martensitic steels. Journal of the Mechanics and Physics of Solids, 2018, 112, 403-430.	4.9	225
66	Fracture in human cortical bone: local fracture criteria and toughening mechanisms. Journal of Biomechanics, 2005, 38, 1517-1525.	2.1	224
67	Critical fracture stress and fracture strain models for the prediction of lower and upper shelf toughness in nuclear pressure vessel steels. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1979, 10, 1557-1570.	1.4	223
68	Cyclic Fatigue-Crack Propagation in Magnesia-Partially-Stabilized Zirconia Ceramics. Journal of the American Ceramic Society, 1990, 73, 893-903.	3.8	222
69	On the origin of the toughness of mineralized tissue: microcracking or crack bridging?. Bone, 2004, 34, 790-798.	3.0	218
70	Interface Structure and Atomic Bonding Characteristics in Silicon Nitride Ceramics. Science, 2004, 306, 1768-1770.	12.9	216
71	Radiation-induced segregation on defect clusters in single-phase concentrated solid-solution alloys. Acta Materialia, 2017, 127, 98-107.	7.9	212
72	Failure mechanisms of single-crystal silicon electrodes in lithium-ion batteries. Nature Communications, 2016, 7, 11886.	13.1	211

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73	Effect of aging on the toughness of human cortical bone: evaluation by R-curves. Bone, 2004, 35, 1240-1246.	3.0	210
74	Near-threshold fatigue-crack propagation in steels. International Materials Reviews, 1979, 24, 205-230.	19.5	210
75	Near-Threshold Fatigue Crack Growth in 2 1/4 Cr-1Mo Pressure Vessel Steel in Air and Hydrogen. Journal of Engineering Materials and Technology, Transactions of the ASME, 1980, 102, 293-299.	1.4	204
76	Propagation of short fatigue cracks. International Metals Reviews, 1984, 29, 445-475.	0.3	204
77	Age-related transparent root dentin: mineral concentration, crystallite size, and mechanical properties. Biomaterials, 2005, 26, 3363-3376.	11.7	201
78	High-cycle fatigue of single-crystal silicon thin films. Journal of Microelectromechanical Systems, 2001, 10, 593-600.	2.5	200
79	Making ultrastrong steel tough by grain-boundary delamination. Science, 2020, 368, 1347-1352.	12.9	200
80	In Situ Toughened Silicon Carbide with Al-B-C Additions. Journal of the American Ceramic Society, 1996, 79, 461-469.	3.8	199
81	Fatigue-crack growth behavior in the superelastic and shape-memory alloy nitinol. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2001, 32, 731-743.	2.2	197
82	Fatigue and life prediction for cobalt-chromium stents: A fracture mechanics analysis. Biomaterials, 2006, 27, 1988-2000.	11.7	197
83	Small fatigue cracks: A statement of the problem and potential solutions. Materials Science and Engineering, 1986, 84, 11-16.	0.1	196
84	TGF-Â regulates the mechanical properties and composition of bone matrix. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 18813-18818.	7.3	193
85	Indentation techniques for evaluating the fracture toughness of biomaterials and hard tissues. Journal of the Mechanical Behavior of Biomedical Materials, 2009, 2, 384-395.	3.1	193
86	Effect of load ratio and maximum stress intensity on the fatigue threshold in Tiâ€“6Alâ€“4V. Engineering Fracture Mechanics, 2001, 68, 129-147.	4.3	191
87	A reaction-layer mechanism for the delayed failure of micron-scale polycrystalline silicon structural films subjected to high-cycle fatigue loading. Acta Materialia, 2002, 50, 3579-3595.	7.9	189
88	Influence of microstructure on near-threshold fatigue-crack propagation in ultra-high strength steel. Metal Science, 1977, 11, 368-381.	0.7	184
89	Crack blunting, crack bridging and resistance-curve fracture mechanics in dentin: effect of hydration. Biomaterials, 2003, 24, 5209-5221.	11.7	182
90	Micromechanical models to guide the development of synthetic â€˜brick and mortarâ€™ composites. Journal of the Mechanics and Physics of Solids, 2012, 60, 1545-1560.	4.9	182

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91	On the interpretation of the fractal character of fracture surfaces. Acta Metallurgica Et Materialia, 1990, 38, 143-159.	1.8	181
92	Measurement of the toughness of bone: A tutorial with special reference to small animal studies. Bone, 2008, 43, 798-812.	3.0	180
93	Processing, Microstructure and Mechanical Properties of the CrMnFeCoNi High-Entropy Alloy. Jom, 2015, 67, 2262-2270.	1.9	177
94	Near-threshold fatigue-crack propagation in steels. International Metals Reviews, 1979, 24, 205-230.	0.3	176
95	Optimization of Mo-Si-B intermetallic alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2005, 36, 525-531.	2.2	174
96	Cyclic Fatigue-Crack Growth in a SiC-Whisker-Reinforced Alumina Ceramic Composite: Long- and Small-Crack Behavior. Journal of the American Ceramic Society, 1992, 75, 759-771.	3.8	173
97	Fabrication and mechanical properties of PLA/HA composites: A study of in vitro degradation. Materials Science and Engineering C, 2006, 26, 1289-1295.	7.4	173
98	On the effect of X-ray irradiation on the deformation and fracture behavior of human cortical bone. Bone, 2010, 46, 1475-1485.	3.0	171
99	Fatigue Crack Propagation in Transformation-Toughened Zirconia Ceramic. Journal of the American Ceramic Society, 1987, 70, C-248-C-252.	3.8	169
100	Osteopontin deficiency increases bone fragility but preserves bone mass. Bone, 2010, 46, 1564-1573.	3.0	169
101	Real-time nanoscale observation of deformation mechanisms in CrCoNi-based medium- to high-entropy alloys at cryogenic temperatures. Materials Today, 2019, 25, 21-27.	14.7	167
102	Real-time observations of TRIP-induced ultrahigh strain hardening in a dual-phase CrMnFeCoNi high-entropy alloy. Nature Communications, 2020, 11, 826.	13.1	165
103	A statistical model of brittle fracture by transgranular cleavage. Journal of the Mechanics and Physics of Solids, 1986, 34, 477-497.	4.9	164
104	Crack bridging by uncracked ligaments during fatigue-crack growth in SiC-reinforced aluminum-alloy composites. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1989, 20, 897-908.	1.4	163
105	Fatigue-crack growth and fracture properties of coarse and fine-grained Ti3SiC2. Scripta Materialia, 2000, 42, 761-767.	5.2	163
106	Pharmacologic Inhibition of the TGF-Î² Type I Receptor Kinase Has Anabolic and Anti-Catabolic Effects on Bone. PLoS ONE, 2009, 4, e5275.	2.5	163
107	Further considerations on the inconsistency in toughness evaluation of AISI 4340 steel austenitized at increasing temperatures. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1978, 9, 331-341.	1.4	162
108	Role of silicon carbide particles in fatigue crack growth in SiC-particulate-reinforced aluminum alloy composites. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1988, 102, 181-192.	5.6	161

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109	Protective role of Arapaima gigas fish scales: Structure and mechanical behavior. Acta Biomaterialia, 2014, 10, 3599-3614.	8.5	161
110	Effect of temperature on the fatigue-crack growth behavior of the high-entropy alloy CrMnFeCoNi. Intermetallics, 2017, 88, 65-72.	4.0	160
111	Toughness and strength of nanocrystalline graphene. Nature Communications, 2016, 7, 10546.	13.1	158
112	High-cycle fatigue and durability of polycrystalline silicon thin films in ambient air. Sensors and Actuators A: Physical, 2001, 94, 177-188.	4.2	157
113	An experimental study of the superelastic effect in a shape-memory Nitinol alloy under biaxial loading. Mechanics of Materials, 2003, 35, 969-986.	3.3	155
114	Cryoforged nanotwinned titanium with ultrahigh strength and ductility. Science, 2021, 373, 1363-1368.	12.9	155
115	Evolution of crack-tip transformation zones in superelastic Nitinol subjected to in situ fatigue: A fracture mechanics and synchrotron X-ray microdiffraction analysis. Acta Materialia, 2007, 55, 6198-6207.	7.9	153
116	On the particle-size dependence of fatigue-crack propagation thresholds in SiC-particulate-reinforced aluminum-alloy composites: Role of crack closure and crack trapping. Acta Metallurgica, 1989, 37, 2267-2278.	2.1	148
117	Fatigue of a Zr-Ti-Cu-Ni-Be bulk amorphous metal: Stress/life and crack-growth behavior. Scripta Materialia, 1998, 38, 537-542.	5.2	148
118	Mechanistic aspects of the fracture toughness of elk antler bone. Acta Biomaterialia, 2010, 6, 1505-1514.	8.5	148
119	Vitamin D Deficiency Induces Early Signs of Aging in Human Bone, Increasing the Risk of Fracture. Science Translational Medicine, 2013, 5, 193ra88.	12.7	146
120	In vitro fatigueâ€“crack growth and fracture toughness behavior of thin-walled superelastic Nitinol tube for endovascular stents: A basis for defining the effect of crack-like defects. Biomaterials, 2007, 28, 700-709.	11.7	143
121	Bone as a Structural Material. Advanced Healthcare Materials, 2015, 4, 1287-1304.	7.8	142
122	Stochastic modeling of the independent roles of particle size and grain size in transgranular cleavage fracture. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1987, 18, 641-651.	2.2	140
123	Amorphization in extreme deformation of the CrMnFeCoNi high-entropy alloy. Science Advances, 2021, 7, .	10.5	140
124	Atomistic simulations of dislocation mobility in refractory high-entropy alloys and the effect of chemical short-range order. Nature Communications, 2021, 12, 4873.	13.1	138
125	Mechanisms associated with transient fatigue crack growth under variable-amplitude loading: An experimental and numerical study. Engineering Fracture Mechanics, 1989, 32, 613-638.	4.3	134
126	Fatigue-crack propagation in Nitinol, a shape-memory and superelastic endovascular stent material. , 1999, 47, 301-308.		134

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127	Mechanisms of radiation-induced segregation in CrFeCoNi-based single-phase concentrated solid solution alloys. Acta Materialia, 2017, 126, 182-193.	7.9	133
128	A physically-based abrasive wear model for composite materials. Wear, 2002, 252, 322-331.	3.2	132
129	Proposed pathogenesis for atypical femoral fractures: Lessons from materials research. Bone, 2013, 55, 495-500.	3.0	132
130	Near-Threshold Fatigue Crack Propagation in Ultra-High Strength Steel: Influence of Load Ratio and Cyclic Strength. Journal of Engineering Materials and Technology, Transactions of the ASME, 1977, 99, 195-204.	1.4	131
131	Direct Observation of Defect Range and Evolution in Ion-Irradiated Single Crystalline Ni and Ni Binary Alloys. Scientific Reports, 2016, 6, 19994.	3.4	131
132	Fatigue of aluminiumâ€"lithium alloys. International Materials Reviews, 1992, 37, 153-186.	19.5	129
133	Effect of microstructure on the fatigue of hot-rolled and cold-drawn NiTi shape memory alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 486, 389-403.	5.6	129
134	Near-complete depolymerization of polyesters with nano-dispersed enzymes. Nature, 2021, 592, 558-563.	28.3	129
135	Role of microstructure in the aging-related deterioration of the toughness of human cortical bone. Materials Science and Engineering C, 2006, 26, 1251-1260.	7.4	128
136	Mixed-mode fracture of human cortical bone. Biomaterials, 2009, 30, 5877-5884.	11.7	128
137	Characterizing Threeâ€Dimensional Textile Ceramic Composites Using Synchrotron ‹scp›X‹/scp›â€Ray Microâ€Computedâ€Tomography. Journal of the American Ceramic Society, 2012, 95, 392-402.	3.8	128
138	Osteocyte-Intrinsic TGF-Î² Signaling Regulates Bone Quality through Perilacunar/Canalicular Remodeling. Cell Reports, 2017, 21, 2585-2596.	6.5	128
139	Fracture length scales in human cortical bone: The necessity of nonlinear fracture models. Biomaterials, 2006, 27, 2095-2113.	11.7	126
140	Thresholds for high-cycle fatigue in a turbine engine Tiâ€"6Alâ€"4V alloy. International Journal of Fatigue, 1999, 21, 653-662.	5.7	125
141	The residual stress state due to a spherical hard-body impact. Mechanics of Materials, 2001, 33, 441-454.	3.3	125
142	Fracture resistance of human cortical bone across multiple length-scales at physiological strain rates. Biomaterials, 2014, 35, 5472-5481.	11.7	125
143	Universal structural parameter to quantitatively predict metallic glass properties. Nature Communications, 2016, 7, 13733.	13.1	124
144	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.	7.3	122

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145	The effect of aging on crack-growth resistance and toughening mechanisms in human dentin. Biomaterials, 2008, 29, 1318-1328.	11.7	121
146	Ambient to high temperature fracture toughness and fatigue-crack propagation behavior in a Moâ€“12Siâ€“8.5B (at.%) intermetallic. Intermetallics, 2001, 9, 319-329.	4.0	120
147	High-cycle fatigue of nickel-based superalloy ME3 at ambient and elevated temperatures: Role of grain-boundary engineering. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2005, 36, 3325-3333.	2.2	120
148	Point defect evolution in Ni, NiFe and NiCr alloys from atomistic simulations and irradiation experiments. Acta Materialia, 2015, 99, 69-76.	7.9	120
149	High-cycle fatigue of Ti-6Al-4V. Fatigue and Fracture of Engineering Materials and Structures, 1999, 22, 621-631.	3.4	119
150	How Tough Is Brittle Bone? Investigating Osteogenesis Imperfecta in Mouse Bone. Journal of Bone and Mineral Research, 2014, 29, 1392-1401.	2.8	119
151	Cyclic Fatigue of Ceramics. Journal of the Ceramic Society of Japan, 1991, 99, 1047-1062.	1.3	116
152	A fracture mechanics and mechanistic approach to the failure of cortical bone. Fatigue and Fracture of Engineering Materials and Structures, 2005, 28, 345-371.	3.4	116
153	Structure and fracture resistance of alligator gar (Atractosteus spatula) armored fish scales. Acta Biomaterialia, 2013, 9, 5876-5889.	8.5	116
154	Influence of foreign-object damage on crack initiation and early crack growth during high-cycle fatigue of Tiâ€“6Alâ€“4V. Engineering Fracture Mechanics, 2000, 67, 193-207.	4.3	115
155	The fracture mechanics of human bone: influence of disease and treatment. BoneKEy Reports, 2015, 4, 743.	2.7	114
156	Adhesion between biodegradable polymers and hydroxyapatite: Relevance to synthetic bone-like materials and tissue engineering scaffolds. Acta Biomaterialia, 2008, 4, 1288-1296.	8.5	113
157	Glucocorticoidâ€induced bone loss in mice can be reversed by the actions of parathyroid hormone and risedronate on different pathways for bone formation and mineralization. Arthritis and Rheumatism, 2008, 58, 3485-3497.	6.7	111
158	Fatigue crack propagation in ARALLÂ® LAMINATES: Measurement of the effect of crack-tip shielding from crack bridging. Engineering Fracture Mechanics, 1989, 32, 361-377.	4.3	110
159	Influence of chemical disorder on energy dissipation and defect evolution in advanced alloys. Journal of Materials Research, 2016, 31, 2363-2375.	2.6	110
160	On the influence of environment on the load ratio dependence of fatigue thresholds in pressure vessel steel. Engineering Fracture Mechanics, 1983, 18, 785-800.	4.3	108
161	Role of the grain-boundary phase on the elevated-temperature strength, toughness, fatigue and creep resistance of silicon carbide sintered with Al, B and C. Acta Materialia, 2000, 48, 4599-4608.	7.9	108
162	Fracture toughness and R-Curve behavior of laminated brittle-matrix composites. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1998, 29, 2483-2496.	2.2	107

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163	Deep-ultraviolet Raman spectroscopy study of the effect of aging on human cortical bone. Journal of Biomedical Optics, 2005, 10, 034012.	2.7	106
164	Developing strength and toughness in bio-inspired silicon carbide hybrid materials containing a compliant phase. Acta Materialia, 2015, 98, 141-151.	7.9	106
165	Bioinspired nacre-like alumina with a bulk-metallic glass-forming alloy as a compliant phase. Nature Communications, 2019, 10, 961.	13.1	106
166	On the calibration of the electrical potential technique for monitoring crack growth using finite element methods. International Journal of Fracture, 1979, 15, 47-55.	2.2	104
167	A transmission electron microscopy study of mineralization in age-induced transparent dentin. Biomaterials, 2005, 26, 7650-7660.	11.7	104
168	Cryogenic toughness of commercial aluminum-lithium alloys: Role of delamination toughening. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1989, 20, 485-497.	1.4	103
169	An in situ transmission electron microscope study of the thermal stability of near-surface microstructures induced by deep rolling and laser-shock peening. Scripta Materialia, 2003, 48, 1593-1598.	5.2	103
170	High-cycle fatigue of nickel-base superalloy RenÃ© 104 (ME3): Interaction of microstructurally small cracks with grain boundaries of known character. Acta Materialia, 2007, 55, 3155-3167.	7.9	102
171	Crack-Tip Transformation Zones in Toughened Zirconia. Journal of the American Ceramic Society, 1990, 73, 2659-2666.	3.8	100
172	On the contrasting role of ductile-phase reinforcements in the fracture toughness and fatigue-crack propagation behavior of TiNb/Î³-TiAl intermetallic matrix composites. Acta Metallurgica Et Materialia, 1992, 40, 353-361.	1.8	100
173	Ultrastructural examination of dentin using focused ion-beam cross-sectioning and transmission electron microscopy. Micron, 2005, 36, 672-680.	2.2	97
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