

Robert O. Ritchie

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744
papers

54,797
citations

114
h-index

208
g-index

777
ext. papers

63,825
ext. citations

8
avg, IF

8.21
L-index

#	Paper	IF	Citations
744	A fracture-resistant high-entropy alloy for cryogenic applications. <i>Science</i> , 2014 , 345, 1153-8	33.3	2700
743	Bioinspired structural materials. <i>Nature Materials</i> , 2015 , 14, 23-36	27	2402
742	The conflicts between strength and toughness. <i>Nature Materials</i> , 2011 , 10, 817-22	27	1807
741	Tough, bio-inspired hybrid materials. <i>Science</i> , 2008 , 322, 1516-20	33.3	1302
740	On the relationship between critical tensile stress and fracture toughness in mild steel. <i>Journal of the Mechanics and Physics of Solids</i> , 1973 , 21, 395-410	5	1192
739	High-entropy alloys. <i>Nature Reviews Materials</i> , 2019 , 4, 515-534	73.3	932
738	Direct mechanical measurement of the tensile strength and elastic modulus of multiwalled carbon nanotubes. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2002 , 334, 173-178	5.3	832
737	Exceptional damage-tolerance of a medium-entropy alloy CrCoNi at cryogenic temperatures. <i>Nature Communications</i> , 2016 , 7, 10602	17.4	711
736	Mechanisms of fatigue crack propagation in metals, ceramics and composites: Role of crack tip shielding. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 1988 , 103, 15-28	5.3	631
735	Mechanisms of fatigue-crack propagation in ductile and brittle solids. <i>International Journal of Fracture</i> , 1999 , 100, 55-83	2.3	606
734	Mechanistic fracture criteria for the failure of human cortical bone. <i>Nature Materials</i> , 2003 , 2, 164-8	27	571
733	A damage-tolerant glass. <i>Nature Materials</i> , 2011 , 10, 123-8	27	470
732	Nanoscale origins of the damage tolerance of the high-entropy alloy CrMnFeCoNi. <i>Nature Communications</i> , 2015 , 6, 10143	17.4	451
731	On the Mechanistic Origins of Toughness in Bone. <i>Annual Review of Materials Research</i> , 2010 , 40, 25-53	12.8	451
730	Tuning element distribution, structure and properties by composition in high-entropy alloys. <i>Nature</i> , 2019 , 574, 223-227	50.4	404
729	Fracture toughness and fatigue-crack propagation in a ZrTiNiCuBe bulk metallic glass. <i>Applied Physics Letters</i> , 1997 , 71, 476-478	3.4	386
728	The true toughness of human cortical bone measured with realistically short cracks. <i>Nature Materials</i> , 2008 , 7, 672-7	27	380

727	On the influence of mechanical surface treatments—deep rolling and laser shock peening—on the fatigue behavior of Ti6Al4V at ambient and elevated temperatures. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2003 , 355, 216-230	5.3	357
726	A geometric model for fatigue crack closure induced by fracture surface roughness. <i>Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science</i> , 1982 , 13, 1627-1631		346
725	Enhancing radiation tolerance by controlling defect mobility and migration pathways in multicomponent single-phase alloys. <i>Nature Communications</i> , 2016 , 7, 13564	17.4	336
724	Functional gradients and heterogeneities in biological materials: Design principles, functions, and bioinspired applications. <i>Progress in Materials Science</i> , 2017 , 88, 467-498	42.2	331
723	Influence of chemical disorder on energy dissipation and defect evolution in concentrated solid solution alloys. <i>Nature Communications</i> , 2015 , 6, 8736	17.4	330
722	The dentin-enamel junction and the fracture of human teeth. <i>Nature Materials</i> , 2005 , 4, 229-32	27	321
721	Mechanical properties of high-entropy alloys with emphasis on face-centered cubic alloys. <i>Progress in Materials Science</i> , 2019 , 102, 296-345	42.2	306
720	Propagation of short fatigue cracks. <i>International Materials Reviews</i> , 1984 , 29, 445-475	16.1	297
719	Encapsulation of Perovskite Nanocrystals into Macroscale Polymer Matrices: Enhanced Stability and Polarization. <i>ACS Applied Materials & Interfaces</i> , 2016 , 8, 35523-35533	9.5	288
718	Grain-boundary engineering markedly reduces susceptibility to intergranular hydrogen embrittlement in metallic materials. <i>Acta Materialia</i> , 2009 , 57, 4148-4157	8.4	284
717	On macroscopic and microscopic analyses for crack initiation and crack growth toughness in ductile alloys. <i>Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science</i> , 1985 , 16, 233-248		276
716	A statistical, physical-based, micro-mechanical model of hydrogen-induced intergranular fracture in steel. <i>Journal of the Mechanics and Physics of Solids</i> , 2010 , 58, 206-226	5	270
715	Mechanistic aspects of fracture and R-curve behavior in human cortical bone. <i>Biomaterials</i> , 2005 , 26, 217-31	15.6	267
714	Age-related changes in the plasticity and toughness of human cortical bone at multiple length scales. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011 , 108, 14416-21	11.5	265
713	Carbon nanotubes as nanoscale mass conveyors. <i>Nature</i> , 2004 , 428, 924-7	50.4	256
712	Short-range order and its impact on the CrCoNi medium-entropy alloy. <i>Nature</i> , 2020 , 581, 283-287	50.4	254
711	Tunable stacking fault energies by tailoring local chemical order in CrCoNi medium-entropy alloys. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018 , 115, 8919-8924	11.5	251
710	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

709	Natural flexible dermal armor. <i>Advanced Materials</i> , 2013 , 25, 31-48	24	241
708	Mechanical fatigue and fracture of Nitinol. <i>International Materials Reviews</i> , 2012 , 57, 1-37	16.1	240
707	Plasticity and toughness in bone. <i>Physics Today</i> , 2009 , 62, 41-47	0.9	238
706	Designing highly toughened hybrid composites through nature-inspired hierarchical complexity. <i>Acta Materialia</i> , 2009 , 57, 2919-2932	8.4	235
705	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
704	Bioinspired large-scale aligned porous materials assembled with dual temperature gradients. <i>Science Advances</i> , 2015 , 1, e1500849	14.3	230
703	Evaluation of toughness in AISI 4340 alloy steel austenitized at low and high temperatures. <i>Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science</i> , 1976 , 7, 831-838		229
702	Mechanisms of fatigue crack growth in low alloy steel. <i>Acta Metallurgica</i> , 1973 , 21, 639-648		220
701	A novel biomimetic approach to the design of high-performance ceramic-metal composites. <i>Journal of the Royal Society Interface</i> , 2010 , 7, 741-53	4.1	213
700	Effect of orientation on the in vitro fracture toughness of dentin: the role of toughening mechanisms. <i>Biomaterials</i> , 2003 , 24, 3955-68	15.6	212
699	Hydrogen-induced intergranular failure in nickel revisited. <i>Acta Materialia</i> , 2012 , 60, 2739-2745	8.4	209
698	Microindentation for in vivo measurement of bone tissue mechanical properties in humans. <i>Journal of Bone and Mineral Research</i> , 2010 , 25, 1877-85	6.3	209
697	Critical fracture stress and fracture strain models for the prediction of lower and upper shelf toughness in nuclear pressure vessel steels. <i>Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science</i> , 1979 , 10, 1557-1570		208
696	Mechanisms for fracture and fatigue-crack propagation in a bulk metallic glass. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 1999 , 30, 1739-1753	2.3	207
695	On the tear resistance of skin. <i>Nature Communications</i> , 2015 , 6, 6649	17.4	206
694	Directing mesenchymal stem cells to bone to augment bone formation and increase bone mass. <i>Nature Medicine</i> , 2012 , 18, 456-62	50.5	205
693	Influence of microstructure on high-cycle fatigue of Ti-6Al-4V: Bimodal vs. lamellar structures. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2002 , 33, 899-918	2.3	205
692	Mechanical adaptability of the Bouligand-type structure in natural dermal armour. <i>Nature Communications</i> , 2013 , 4, 2634	17.4	202

691	Fracture in human cortical bone: local fracture criteria and toughening mechanisms. <i>Journal of Biomechanics</i> , 2005 , 38, 1517-25	2.9	202
690	Some considerations on fatigue crack closure at near-threshold stress intensities due to fracture surface morphology. <i>Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science</i> , 1982 , 13, 937-940		200
689	Mechanisms of tempered martensite embrittlement in low alloy steels. <i>Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science</i> , 1978 , 9, 1039-1053		200
688	Interface structure and atomic bonding characteristics in silicon nitride ceramics. <i>Science</i> , 2004 , 306, 1768-70	33.3	196
687	Near-threshold fatigue-crack propagation in steels. <i>International Materials Reviews</i> , 1979 , 24, 205-230	16.1	196
686	Cyclic Fatigue-Crack Propagation in Magnesia-Partially-Stabilized Zirconia Ceramics. <i>Journal of the American Ceramic Society</i> , 1990 , 73, 893-903	3.8	193
685	On the origin of the toughness of mineralized tissue: microcracking or crack bridging?. <i>Bone</i> , 2004 , 34, 790-8	4.7	191
684	Characterization of the effects of x-ray irradiation on the hierarchical structure and mechanical properties of human cortical bone. <i>Biomaterials</i> , 2011 , 32, 8892-904	15.6	188
683	Effect of aging on the toughness of human cortical bone: evaluation by R-curves. <i>Bone</i> , 2004 , 35, 1240-6	4.7	187
682	Real-time quantitative imaging of failure events in materials under load at temperatures above 1,600 °C. <i>Nature Materials</i> , 2013 , 12, 40-6	27	185
681	Decrease in the osteocyte lacunar density accompanied by hypermineralized lacunar occlusion reveals failure and delay of remodeling in aged human bone. <i>Aging Cell</i> , 2010 , 9, 1065-75	9.9	185
680	In Situ Toughened Silicon Carbide with Al-B-C Additions. <i>Journal of the American Ceramic Society</i> , 1996 , 79, 461-469	3.8	182
679	Near-Threshold Fatigue Crack Growth in 2 1/4 Cr-1Mo Pressure Vessel Steel in Air and Hydrogen. <i>Journal of Engineering Materials and Technology, Transactions of the ASME</i> , 1980 , 102, 293-299	1.8	182
678	Fatigue-crack growth behavior in the superelastic and shape-memory alloy nitinol. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2001 , 32, 731-743	2.3	181
677	On the effect of deep-rolling and laser-peening on the stress-controlled low- and high-cycle fatigue behavior of Ti ₆ Al ₄ V at elevated temperatures up to 550°C. <i>International Journal of Fatigue</i> , 2012 , 44, 292-302	5	178
676	High pressure synthesis of a hexagonal close-packed phase of the high-entropy alloy CrMnFeCoNi. <i>Nature Communications</i> , 2017 , 8, 15634	17.4	177
675	Age-related transparent root dentin: mineral concentration, crystallite size, and mechanical properties. <i>Biomaterials</i> , 2005 , 26, 3363-76	15.6	172
674	Fatigue and life prediction for cobalt-chromium stents: A fracture mechanics analysis. <i>Biomaterials</i> , 2006 , 27, 1988-2000	15.6	171

673	A reaction-layer mechanism for the delayed failure of micron-scale polycrystalline silicon structural films subjected to high-cycle fatigue loading. <i>Acta Materialia</i> , 2002 , 50, 3579-3595	8.4	168
672	TGF-beta regulates the mechanical properties and composition of bone matrix. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005 , 102, 18813-8	11.5	168
671	Crack blunting, crack bridging and resistance-curve fracture mechanics in dentin: effect of hydration. <i>Biomaterials</i> , 2003 , 24, 5209-21	15.6	166
670	Mo-Si-B alloys for ultrahigh-temperature structural applications. <i>Advanced Materials</i> , 2012 , 24, 3445-80	24	164
669	Small fatigue cracks: A statement of the problem and potential solutions. <i>Materials Science and Engineering</i> , 1986 , 84, 11-16		163
668	Multiscale Toughening Mechanisms in Biological Materials and Bioinspired Designs. <i>Advanced Materials</i> , 2019 , 31, e1901561	24	160
667	Heterostructured materials: superior properties from hetero-zone interaction. <i>Materials Research Letters</i> , 2021 , 9, 1-31	7.4	160
666	Indentation techniques for evaluating the fracture toughness of biomaterials and hard tissues. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2009 , 2, 384-95	4.1	159
665	Effect of load ratio and maximum stress intensity on the fatigue threshold in Ti6Al4V. <i>Engineering Fracture Mechanics</i> , 2001 , 68, 129-147	4.2	159
664	On the interpretation of the fractal character of fracture surfaces. <i>Acta Metallurgica Et Materialia</i> , 1990 , 38, 143-159		159
663	Failure mechanisms of single-crystal silicon electrodes in lithium-ion batteries. <i>Nature Communications</i> , 2016 , 7, 11886	17.4	156
662	High-cycle fatigue of single-crystal silicon thin films. <i>Journal of Microelectromechanical Systems</i> , 2001 , 10, 593-600	2.5	155
661	Measurement of the toughness of bone: a tutorial with special reference to small animal studies. <i>Bone</i> , 2008 , 43, 798-812	4.7	151
660	Optimization of Mo-Si-B intermetallic alloys. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2005 , 36, 525-531	2.3	151
659	Cyclic Fatigue-Crack Growth in a SiC-Whisker-Reinforced Alumina Ceramic Composite: Long- and Small-Crack Behavior. <i>Journal of the American Ceramic Society</i> , 1992 , 75, 759-771	3.8	151
658	Crack bridging by uncracked ligaments during fatigue-crack growth in SiC-reinforced aluminum-alloy composites. <i>Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science</i> , 1989 , 20, 897-908		151
657	Fatigue Crack Propagation in Transformation-Toughened Zirconia Ceramic. <i>Journal of the American Ceramic Society</i> , 1987 , 70, C-248-C-252	3.8	149
656	Osteopontin deficiency increases bone fragility but preserves bone mass. <i>Bone</i> , 2010 , 46, 1564-73	4.7	147

655	Fabrication and mechanical properties of PLA/HA composites: A study of in vitro degradation. <i>Materials Science and Engineering C</i> , 2006 , 26, 1289-1295	8.3	146
654	Fatigue-crack growth and fracture properties of coarse and fine-grained Ti ₃ SiC ₂ . <i>Scripta Materialia</i> , 2000 , 42, 761-767	5.6	146
653	Role of silicon carbide particles in fatigue crack growth in SiC-particulate-reinforced aluminum alloy composites. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 1988 , 102, 181-192	5.3	145
652	Further considerations on the inconsistency in toughness evaluation of AISI 4340 steel austenitized at increasing temperatures. <i>Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science</i> , 1978 , 9, 331-341		145
651	A statistical model of brittle fracture by transgranular cleavage. <i>Journal of the Mechanics and Physics of Solids</i> , 1986 , 34, 477-497	5	144
650	On the effect of X-ray irradiation on the deformation and fracture behavior of human cortical bone. <i>Bone</i> , 2010 , 46, 1475-85	4.7	142
649	Micromechanical models to guide the development of synthetic brick and mortar composites. <i>Journal of the Mechanics and Physics of Solids</i> , 2012 , 60, 1545-1560	5	141
648	Hydrogen-enhanced-plasticity mediated decohesion for hydrogen-induced intergranular and quasi-cleavage fracture of lath martensitic steels. <i>Journal of the Mechanics and Physics of Solids</i> , 2018 , 112, 403-430	5	138
647	Pharmacologic inhibition of the TGF-beta type I receptor kinase has anabolic and anti-catabolic effects on bone. <i>PLoS ONE</i> , 2009 , 4, e5275	3.7	137
646	Evolution of crack-tip transformation zones in superelastic Nitinol subjected to in situ fatigue: A fracture mechanics and synchrotron X-ray microdiffraction analysis. <i>Acta Materialia</i> , 2007 , 55, 6198-6207	8.4	136
645	High-cycle fatigue and durability of polycrystalline silicon thin films in ambient air. <i>Sensors and Actuators A: Physical</i> , 2001 , 94, 177-188	3.9	136
644	Processing, Microstructure and Mechanical Properties of the CrMnFeCoNi High-Entropy Alloy. <i>Jom</i> , 2015 , 67, 2262-2270	2.1	135
643	Influence of microstructure on near-threshold fatigue-crack propagation in ultra-high strength steel. <i>Metal Science</i> , 1977 , 11, 368-381		135
642	Fatigue of a Zr-Ti-Cu-Ni-Be bulk amorphous metal: Stress/life and crack-growth behavior. <i>Scripta Materialia</i> , 1998 , 38, 537-542	5.6	133
641	An experimental study of the superelastic effect in a shape-memory Nitinol alloy under biaxial loading. <i>Mechanics of Materials</i> , 2003 , 35, 969-986	3.3	132
640	Radiation-induced segregation on defect clusters in single-phase concentrated solid-solution alloys. <i>Acta Materialia</i> , 2017 , 127, 98-107	8.4	128
639	Mechanistic aspects of the fracture toughness of elk antler bone. <i>Acta Biomaterialia</i> , 2010 , 6, 1505-14	10.8	126
638	On the particle-size dependence of fatigue-crack propagation thresholds in SiC-particulate-reinforced aluminum-alloy composites: Role of crack closure and crack trapping. <i>Acta Metallurgica</i> , 1989 , 37, 2267-2278		125

637	In vitro fatigue-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. <i>Biomaterials</i> , 2007 , 28, 700-9	15.6	123
636	Toughness and strength of nanocrystalline graphene. <i>Nature Communications</i> , 2016 , 7, 10546	17.4	121
635	Stochastic modeling of the independent roles of particle size and grain size in transgranular cleavage fracture. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 1987 , 18, 641-651	2.3	120
634	Fatigue-crack propagation in Nitinol, a shape-memory and superelastic endovascular stent material. <i>Journal of Biomedical Materials Research Part B</i> , 1999 , 47, 301-8		117
633	Protective role of Arapaima gigas fish scales: structure and mechanical behavior. <i>Acta Biomaterialia</i> , 2014 , 10, 3599-614	10.8	115
632	Vitamin D deficiency induces early signs of aging in human bone, increasing the risk of fracture. <i>Science Translational Medicine</i> , 2013 , 5, 193ra88	17.5	114
631	Propagation of short fatigue cracks. <i>International Metals Reviews</i> , 1984 , 29, 445-475		114
630	Mechanisms associated with transient fatigue crack growth under variable-amplitude loading: An experimental and numerical study. <i>Engineering Fracture Mechanics</i> , 1989 , 32, 613-638	4.2	113
629	Proposed pathogenesis for atypical femoral fractures: lessons from materials research. <i>Bone</i> , 2013 , 55, 495-500	4.7	111
628	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
627	Role of microstructure in the aging-related deterioration of the toughness of human cortical bone. <i>Materials Science and Engineering C</i> , 2006 , 26, 1251-1260	8.3	110
626	Fracture length scales in human cortical bone: the necessity of nonlinear fracture models. <i>Biomaterials</i> , 2006 , 27, 2095-113	15.6	108
625	Ambient to high temperature fracture toughness and fatigue-crack propagation behavior in a Mo ₁₂ Si _{8.5} B (at.%) intermetallic. <i>Intermetallics</i> , 2001 , 9, 319-329	3.5	108
624	Fatigue of aluminium-lithium alloys. <i>International Materials Reviews</i> , 1992 , 37, 153-186	16.1	108
623	Near-Threshold Fatigue Crack Propagation in Ultra-High Strength Steel: Influence of Load Ratio and Cyclic Strength. <i>Journal of Engineering Materials and Technology, Transactions of the ASME</i> , 1977 , 99, 195-204	1.8	108
622	Characterizing Three-Dimensional Textile Ceramic Composites Using Synchrotron X-Ray Micro-Computed-Tomography. <i>Journal of the American Ceramic Society</i> , 2012 , 95, 392-402	3.8	107
621	Effect of microstructure on the fatigue of hot-rolled and cold-drawn NiTi shape memory alloys. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2008 , 486, 389-403	5.3	107
620	A physically-based abrasive wear model for composite materials. <i>Wear</i> , 2002 , 252, 322-331	3.5	107

619	A fracture mechanics and mechanistic approach to the failure of cortical bone. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2005 , 28, 345-371	3	104
618	The residual stress state due to a spherical hard-body impact. <i>Mechanics of Materials</i> , 2001 , 33, 441-454	3.3	104
617	Mixed-mode fracture of human cortical bone. <i>Biomaterials</i> , 2009 , 30, 5877-84	15.6	103
616	The effect of aging on crack-growth resistance and toughening mechanisms in human dentin. <i>Biomaterials</i> , 2008 , 29, 1318-28	15.6	103
615	High-cycle fatigue of nickel-based superalloy ME3 at ambient and elevated temperatures: Role of grain-boundary engineering. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2005 , 36, 3325-3333	2.3	103
614	Mechanisms of radiation-induced segregation in CrFeCoNi-based single-phase concentrated solid solution alloys. <i>Acta Materialia</i> , 2017 , 126, 182-193	8.4	102
613	Adhesion between biodegradable polymers and hydroxyapatite: Relevance to synthetic bone-like materials and tissue engineering scaffolds. <i>Acta Biomaterialia</i> , 2008 , 4, 1288-96	10.8	102
612	Architected cellular materials: A review on their mechanical properties towards fatigue-tolerant design and fabrication. <i>Materials Science and Engineering Reports</i> , 2021 , 144, 100606	30.9	102
611	Thresholds for high-cycle fatigue in a turbine engine Ti ₆ Al ₄ V alloy. <i>International Journal of Fatigue</i> , 1999 , 21, 653-662	5	101
610	Fracture resistance of human cortical bone across multiple length-scales at physiological strain rates. <i>Biomaterials</i> , 2014 , 35, 5472-81	15.6	100
609	Bone as a Structural Material. <i>Advanced Healthcare Materials</i> , 2015 , 4, 1287-304	10.1	100
608	How tough is brittle bone? Investigating osteogenesis imperfecta in mouse bone. <i>Journal of Bone and Mineral Research</i> , 2014 , 29, 1392-1401	6.3	100
607	Direct Observation of Defect Range and Evolution in Ion-Irradiated Single Crystalline Ni and Ni Binary Alloys. <i>Scientific Reports</i> , 2016 , 6, 19994	4.9	100
606	Glucocorticoid-induced bone loss in mice can be reversed by the actions of parathyroid hormone and risedronate on different pathways for bone formation and mineralization. <i>Arthritis and Rheumatism</i> , 2008 , 58, 3485-97		99
605	Cyclic Fatigue of Ceramics. <i>Journal of the Ceramic Society of Japan</i> , 1991 , 99, 1047-1062		98
604	High-cycle fatigue of Ti ₆ Al ₄ V. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 1999 , 22, 621-631	3	96
603	On the contrasting role of ductile-phase reinforcements in the fracture toughness and fatigue-crack propagation behavior of TiNb/TiAl intermetallic matrix composites. <i>Acta Metallurgica Et Materialia</i> , 1992 , 40, 353-361		96
602	Fatigue crack propagation in ARALL [®] LAMINATES: Measurement of the effect of crack-tip shielding from crack bridging. <i>Engineering Fracture Mechanics</i> , 1989 , 32, 361-377	4.2	96

601	On the calibration of the electrical potential technique for monitoring crack growth using finite element methods. <i>International Journal of Fracture</i> , 1979 , 15, 47-55	2.3	95
600	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
599	Deep-ultraviolet Raman spectroscopy study of the effect of aging on human cortical bone. <i>Journal of Biomedical Optics</i> , 2005 , 10, 034012	3.5	94
598	On the influence of environment on the load ratio dependence of fatigue thresholds in pressure vessel steel. <i>Engineering Fracture Mechanics</i> , 1983 , 18, 785-800	4.2	94
597	Point defect evolution in Ni, NiFe and NiCr alloys from atomistic simulations and irradiation experiments. <i>Acta Materialia</i> , 2015 , 99, 69-76	8.4	93
596	Influence of foreign-object damage on crack initiation and early crack growth during high-cycle fatigue of Ti6Al4V. <i>Engineering Fracture Mechanics</i> , 2000 , 67, 193-207	4.2	92
595	Fracture toughness and R-Curve behavior of laminated brittle-matrix composites. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 1998 , 29, 2483-2496	2.3	91
594	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. <i>Acta Materialia</i> , 2000 , 48, 4599-4608	8.4	91
593	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
592	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
591	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
590	The fracture mechanics of human bone: influence of disease and treatment. <i>BoneKey Reports</i> , 2015 , 4, 743		85
589	Aging and fracture of human cortical bone and tooth dentin. <i>Jom</i> , 2008 , 60, 33-38	2.1	85
588	Ultrastructural examination of dentin using focused ion-beam cross-sectioning and transmission electron microscopy. <i>Micron</i> , 2005 , 36, 672-80	2.3	85
587	Mechanism of fatigue in micron-scale films of polycrystalline silicon for microelectromechanical systems. <i>Applied Physics Letters</i> , 2002 , 80, 1532-1534	3.4	85
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