Yu Zhang

List of Publications by Year
in descending order

131 papers	8,622 citations	36203 51 h-index	45213 90 g-index
132 all docs	132 docs citations	132 times ranked	3926 citing authors

#	Article	IF	Citations
1	The Effect of Postmenopausal Estrogen Therapy on Bone Density in Elderly Women. New England Journal of Medicine, 1993, 329, 1141-1146.	13.9	570
2	Novel Zirconia Materials in Dentistry. Journal of Dental Research, 2018, 97, 140-147.	2.5	547
3	Making yttria-stabilized tetragonal zirconia translucent. Dental Materials, 2014, 30, 1195-1203.	1.6	407
4	Effect of sandblasting on the long-term performance of dental ceramics. Journal of Biomedical Materials Research Part B, 2004, 71B, 381-386.	3.0	400
5	Performance of Dental Ceramics: Challenges for Improvements. Journal of Dental Research, 2011, 90, 937-952.	2.5	306
6	Characterization of a polymer-infiltrated ceramic-network material. Dental Materials, 2014, 30, 564-569.	1.6	269
7	Fatigue of dental ceramics. Journal of Dentistry, 2013, 41, 1135-1147.	1.7	231
8	Shear bond strengths between different zirconia cores and veneering ceramics and their susceptibility to thermocycling. Dental Materials, 2008, 24, 1556-1567.	1.6	214
9	Concerns of Hydrothermal Degradation in CAD/CAM Zirconia. Journal of Dental Research, 2010, 89, 91-95.	2.5	201
10	Materials design in the performance of all-ceramic crowns. Biomaterials, 2004, 25, 2885-2892.	5.7	198
11	Zirconia surface modifications for implant dentistry. Materials Science and Engineering C, 2019, 98, 1294-1305.	3.8	191
12	Edge chipping and flexural resistance of monolithic ceramics. Dental Materials, 2013, 29, 1201-1208.	1.6	180
13	Damage accumulation and fatigue life of particle-abraded ceramics. International Journal of Prosthodontics, 2006, 19, 442-8.	0.7	168
14	Dental Ceramics for Restoration and Metal Veneering. Dental Clinics of North America, 2017, 61, 797-819.	0.8	153
15	New multi-layered zirconias: Composition, microstructure and translucency. Dental Materials, 2019, 35, 797-806.	1.6	140
16	Characterization of three commercial Y-TZP ceramics produced for their High-Translucency, High-Strength and High-Surface Area. Ceramics International, 2016, 42, 1077-1085.	2.3	131
17	Graded structures for damage resistant and aesthetic all-ceramic restorations. Dental Materials, 2009, 25, 781-790.	1.6	117
18	Load-bearing properties of minimal-invasive monolithic lithium disilicate and zirconia occlusal onlays: Finite element and theoretical analyses. Dental Materials, 2013, 29, 742-751.	1.6	105

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19	Damage and Reliability of Y-TZP after Cementation Surface Treatment. Journal of Dental Research, 2010, 89, 592-596.	2.5	99
20	Fracture of Porcelain-veneered Structures in Fatigue. Journal of Dental Research, 2007, 86, 142-146.	2.5	97
21	Designing functionally graded materials with superior load-bearing properties. Acta Biomaterialia, 2012, 8, 1101-1108.	4.1	96
22	Marginal and internal fit of heat pressed versus CAD/CAM fabricated all-ceramic onlays after exposure to thermo-mechanical fatigue. Journal of Dentistry, 2014, 42, 199-209.	1.7	93
23	Graded Ultra-Translucent Zirconia (5Y-PSZ) for Strength and Functionalities. Journal of Dental Research, 2018, 97, 1222-1228.	2.5	92
24	Fatigue resistance of CAD/CAM resin composite molar crowns. Dental Materials, 2016, 32, 499-509.	1.6	91
25	Chipping Resistance of Graded Zirconia Ceramics for Dental Crowns. Journal of Dental Research, 2012, 91, 311-315.	2.5	90
26	Influence of preparation design and ceramic thicknesses on fracture resistance and failure modes of premolar partial coverage restorations. Journal of Prosthetic Dentistry, 2013, 110, 264-273.	1.1	88
27	Sliding Contact Fatigue Damage in Layered Ceramic Structures. Journal of Dental Research, 2007, 86, 1046-1050.	2.5	86
28	A fractographic study of clinically retrieved zirconiaâ€“ceramic and metalâ€“ceramic fixed dental prostheses. Dental Materials, 2015, 31, 1198-1206.	1.6	86
29	Speed sintering translucent zirconia for chairside one-visit dental restorations: Optical, mechanical, and wear characteristics. Ceramics International, 2017, 43, 10999-11005.	2.3	86
30	Residual stresses in porcelain-veneered zirconia prostheses. Dental Materials, 2012, 28, 873-879.	1.6	84
31	Evaluating dental zirconia. Dental Materials, 2019, 35, 15-23.	1.6	84
32	Fracture-resistant monolithic dental crowns. Dental Materials, 2016, 32, 442-449.	1.6	83
33	Graded Structures for All-ceramic Restorations. Journal of Dental Research, 2010, 89, 417-421.	2.5	77
34	Antibacterial and bioactive coatings on titanium implant surfaces. Journal of Biomedical Materials Research - Part A, 2017, 105, 2218-2227.	2.1	77
35	Fatigue and damage tolerance of Y-TZP ceramics in layered biomechanical systems. Journal of Biomedical Materials Research Part B, 2004, 71B, 166-171.	3.0	73
36	Deep-penetrating conical cracks in brittle layers from hydraulic cyclic contact. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2005, 73B, 186-193.	1.6	71

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37	Long-term strength of ceramics for biomedical applications. Journal of Biomedical Materials Research Part B, 2004, 69B, 166-172.	3.0	69
38	Failure Modes in Ceramic-Based Layer Structures: A Basis for Materials Design of Dental Crowns. Journal of the American Ceramic Society, 2007, 90, 1671-1683.	1.9	69
39	A Review of Engineered Zirconia Surfaces in Biomedical Applications. Procedia CIRP, 2017, 65, 284-290.	1.0	68
40	Competition of fracture mechanisms in monolithic dental ceramics: Flat model systems. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2009, 88B, 402-411.	1.6	67
41	Polymer infiltrated ceramic network structures for resistance to fatigue fracture and wear. Dental Materials, 2016, 32, 1352-1361.	1.6	67
42	Optimization of ceramic strength using elastic gradients. Acta Materialia, 2009, 57, 2721-2729.	3.8	66
43	Load-bearing capacity of lithium disilicate and ultra-translucent zirconias. Journal of the Mechanical Behavior of Biomedical Materials, 2018, 88, 170-175.	1.5	66
44	Micromechanics of machining and wear in hard and brittle materials. Journal of the American Ceramic Society, 2021, 104, 5-22.	1.9	63
45	Erosion of alumina ceramics by air- and water-suspended garnet particles. Wear, 2000, 240, 40-51.	1.5	62
46	Fatigue sensitivity of Y-TZP to microscale sharp-contact flaws. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2005, 72B, 388-392.	1.6	62
47	Reliability and failure modes of implant-supported zirconium-oxide fixed dental prostheses related to veneering techniques. Journal of Dentistry, 2011, 39, 489-498.	1.7	61
48	On the interfacial fracture of porcelain/zirconia and graded zirconia dental structures. Acta Biomaterialia, 2014, 10, 3756-3761.	4.1	61
49	Performance of Zirconia for Dental Healthcare. Materials, 2010, 3, 863-896.	1.3	59
50	Wear of ceramic-based dental materials. Journal of the Mechanical Behavior of Biomedical Materials, 2019, 92, 144-151.	1.5	57
51	Damage Maps for Layered Ceramics under Simulated Mastication. Journal of Dental Research, 2008, 87, 671-675.	2.5	55
52	Sliding contact fracture of dental ceramics: Principles and validation. Acta Biomaterialia, 2014, 10, 3243-3253.	4.1	54
53	Overview: Damage resistance of graded ceramic restorative materials. Journal of the European Ceramic Society, 2012, 32, 2623-2632.	2.8	52
54	Graded Zirconia Glass for Resistance to Veneer Fracture. Journal of Dental Research, 2010, 89, 1057-1062.	2.5	51

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55	Damage Maps of Veneered Zirconia under Simulated Mastication. Journal of Dental Research, 2008, 87, 1127-1132.	2.5	49
56	Competing Fracture Modes in Brittle Materials Subject to Concentrated Cyclic Loading in Liquid Environments: Monoliths. Journal of Materials Research, 2005, 20, 2021-2029.	1.2	46
57	Wear behavior of pressable lithium disilicate glass ceramic. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2016, 104, 968-978.	1.6	46
58	Competing fracture modes in brittle materials subject to concentrated cyclic loading in liquid environments: Bilayer structures. Journal of Materials Research, 2005, 20, 2792-2800.	1.2	45
59	Probing the interfacial strength of novel multi-layer zirconias. Dental Materials, 2020, 36, 60-67.	1.6	43
60	Effect of finishing/polishing techniques and low temperature degradation on the surface topography, phase transformation and flexural strength of ultra-translucent ZrO2 ceramic. Dental Materials, 2020, 36, e126-e139.	1.6	40
61	Competing fracture modes in brittle materials subject to concentrated cyclic loading in liquid environments: Trilayer structures. Journal of Materials Research, 2006, 21, 512-521.	1.2	39
62	Improving the resistance to sliding contact damage of zirconia using elastic gradients. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2010, 94B, 347-352.	1.6	39
63	Ultrathin Monolithic Zirconia Veneers: Reality or Future? Report of a Clinical Case and One-year Follow-up. Operative Dentistry, 2018, 43, 3-11.	0.6	39
64	Effects of geometry on fracture initiation and propagation in allâ€ceramic crowns. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2009, 88B, 436-446.	1.6	37
65	Fracture, roughness and phase transformation in CAD/CAM milling and subsequent surface treatments of lithium metasilicate/disilicate glass-ceramics. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 74, 251-260.	1.5	37
66	Viscoelastic finite element analysis of residual stresses in porcelain-veneered zirconia dental crowns. Journal of the Mechanical Behavior of Biomedical Materials, 2018, 82, 202-209.	1.5	37
67	The bending stress distribution in bilayered and graded zirconia-based dental ceramics. Ceramics International, 2016, 42, 11025-11031.	2.3	36
68	Off-axis sliding contact reliability and failure modes of veneered alumina and zirconia. Dental Materials, 2009, 25, 892-898.	1.6	35
69	Effects of two grading techniques of zirconia material on the fatigue limit of full-contour 3-unit fixed dental prostheses. Dental Materials, 2017, 33, e155-e164.	1.6	35
70	Sliding contact wear and subsurface damage of CAD/CAM materials against zirconia. Dental Materials, 2020, 36, 387-401.	1.6	35
71	On the interfacial fracture resistance of resin-bonded zirconia and glass-infiltrated graded zirconia. Dental Materials, 2015, 31, 1304-1311.	1.6	34
72	Sliding Contact Fatigue of Graded Zirconia with External Esthetic Glass. Journal of Dental Research, 2011, 90, 1116-1121.	2.5	33

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73	Effects of cementation surface modifications on fracture resistance of zirconia. Dental Materials, 2015, 31, 435-442.	1.6	32
74	Role of indenter material and size in veneer failure of brittle layer structures. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2007, 82B, 253-259.	1.6	29
75	Failure Probability of Three Designs of Zirconia Crowns. International Journal of Periodontics and Restorative Dentistry, 2015, 35, 843-849.	0.4	29
76	Wear Behavior of Graded Glass/Zirconia Crowns and Their Antagonists. Journal of Dental Research, 2019, 98, 437-442.	2.5	28
77	Design maps for failure of all-ceramic layer structures in concentrated cyclic loading. Acta Materialia, 2007, 55, 2479-2488.	3.8	25
78	Wear behavior and microstructural characterization of translucent multilayer zirconia. Dental Materials, 2020, 36, 1407-1417.	1.6	25
79	Silica-Based Infiltrations for Enhanced Zirconia-Resin Interface Toughness. Journal of Dental Research, 2019, 98, 423-429.	2.5	24
80	Influence of microstructure on the erosive wear behaviour of Ca Î±-sialon materials. Journal of the European Ceramic Society, 2001, 21, 2435-2445.	2.8	21
81	Thermal residual stresses in bilayered, trilayered and graded dental ceramics. Ceramics International, 2017, 43, 3670-3678.	2.3	21
82	The progressive wear and abrasiveness of novel graded glass/zirconia materials relative to their dental ceramic counterparts. Dental Materials, 2019, 35, 763-771.	1.6	21
83	Experimental and finite element study of residual thermal stresses in veneered Y-TZP structures. Ceramics International, 2016, 42, 9214-9221.	2.3	20
84	Novel Translucent and Strong Submicron Alumina Ceramics for Dental Restorations. Journal of Dental Research, 2018, 97, 289-295.	2.5	20
85	Influence of residual thermal stresses on the edge chipping resistance of PFM and veneered zirconia structures: Experimental and FEA study. Dental Materials, 2019, 35, 344-355.	1.6	20
86	Threshold damage mechanisms in brittle solids and their impact on advanced technologies. Acta Materialia, 2022, 232, 117921.	3.8	19
87	Influence of interlayer design on residual thermal stresses in trilayered and graded all-ceramic restorations. Materials Science and Engineering C, 2017, 71, 1037-1045.	3.8	18
88	Microstructural development during heat treatment of a commercially available dental-grade lithium disilicate glass-ceramic. Dental Materials, 2019, 35, 697-708.	1.6	17
89	Flexural strength and crystalline stability of a monolithic translucent zirconia subjected to grinding, polishing and thermal challenges. Ceramics International, 2020, 46, 26168-26175.	2.3	17
90	Composition, processing, and properties of biphasic zirconia bioceramics: Relationship to competing strength and optical properties. Ceramics International, 2022, 48, 17095-17103.	2.3	17

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91	Antibacterial property expressed by a novel calcium phosphate glass. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2014, 102, 423-429.	1.6	16
92	Silica Coating of Nonsilicate Nanoparticles for Resin-Based Composite Materials. Journal of Dental Research, 2016, 95, 1394-1400.	2.5	15
93	Do thermal treatments affect the mechanical behavior of porcelain-veneered zirconia? A systematic review and meta-analysis. Dental Materials, 2019, 35, 807-817.	1.6	15
94	Novel speed sintered zirconia by microwave technology. Dental Materials, 2021, 37, 875-881.	1.6	15
95	Laboratory methods to simulate the mechanical degradation of resin composite restorations. Dental Materials, 2022, 38, 214-229.	1.6	15
96	Viscoelastic finite element evaluation of transient and residual stresses in dental crowns: Design parametric study. Journal of the Mechanical Behavior of Biomedical Materials, 2020, 103, 103545.	1.5	13
97	Improving Fatigue Damage Resistance of Alumina through Surface Grading. Journal of Dental Research, 2011, 90, 1026-1030.	2.5	12
98	Load-bearing increase in alumina evoked by introduction of a functional glass gradient. Journal of the European Ceramic Society, 2012, 32, 1213-1220.	2.8	12
99	Using glass-graded zirconia to increase delamination growth resistance in porcelain/zirconia dental structures. Dental Materials, 2018, 34, e8-e14.	1.6	12
100	Edge chipping test in dentistry: A comprehensive review. Dental Materials, 2020, 36, e74-e84.	1.6	12
101	Residual stresses explaining clinical fractures of bilayer zirconia and lithium disilicate crowns: A VFEM study. Dental Materials, 2021, 37, 1655-1666.	1.6	12
102	Effect of extrinsic pigmentation and surface treatments on biaxial flexure strength after cyclic loading of a translucent ZrO2 ceramic. Dental Materials, 2019, 35, 1644-1653.	1.6	11
103	Inverse correlations between wear and mechanical properties in biphasic dental materials with ceramic constituents. Journal of the Mechanical Behavior of Biomedical Materials, 2020, 105, 103722.	1.5	11
104	High surface integrity fabrication of silicon wafers using a newly developed nonwoven structured grind-polishing wheel. Journal of Manufacturing Processes, 2022, 77, 229-239.	2.8	11
105	Non-silicate nanoparticles for improved nanohybrid resin composites. Dental Materials, 2020, 36, 1314-1321.	1.6	10
106	Damage sensitivity of dental zirconias to simulated occlusal contact. Dental Materials, 2021, 37, 158-167.	1.6	10
107	Effect of finishing/polishing techniques and aging on topography, C. albicans adherence, and flexural strength of ultra-translucent zirconia: an in situ study. Clinical Oral Investigations, 2022, 26, 889-900.	1.4	10
108	Can material properties predict survival of all-ceramic posterior crowns?. Compendium of Continuing Education in Dentistry (jamesburg, N J: 1995), 2007, 28, 362-8; quiz 369, 386.	0.1	10

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109	Microstructural development during crystallization firing of a dental-grade nanostructured lithia-zirconia glass-ceramic. Journal of the European Ceramic Society, 2021, 41, 5728-5739.	2.8	9
110	Competing Damage Modes in All-Ceramic Crowns: Fatigue and Lifetime. Key Engineering Materials, 2005, 284-286, 697-700.	0.4	8
111	Contact fatigue response of porcelainâ€veneered alumina model systems. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2012, 100B, 508-515.	1.6	8
112	Fatigue limit of monolithic Y-TZP three-unit-fixed dental prostheses: Effect of grinding at the gingival zone of the connector. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 72, 159-162.	1.5	7
113	An in situ and ex situ study of the microstructural evolution of a novel lithium silicate glass-ceramic during crystallization firing. Dental Materials, 2020, 36, 645-659.	1.6	7
114	Influence of CAD/CAM milling, sintering and surface treatments on the fatigue behavior of lithium disilicate glass ceramic. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 113, 104133.	1.5	7
115	Survivability and fracture resistance of monolithic and multiâ€yttriaâ€layered zirconia crowns as a function of yttria content: A mastication simulation study. Journal of Esthetic and Restorative Dentistry, 2022, 34, 633-640.	1.8	7
116	Fracture modes in curved brittle layers subject to concentrated cyclic loading in liquid environments. Journal of Materials Research, 2009, 24, 1075-1081.	1.2	6
117	Effects of porcelain thickness on the flexural strength and crack propagation in a bilayered zirconia system. Journal of Applied Oral Science, 2017, 25, 566-574.	0.7	6
118	Reliability and fatigue failure modes of implantâ€supported aluminumâ€oxide fixed dental prostheses. Clinical Oral Implants Research, 2012, 23, 1173-1180.	1.9	5
119	Exploring Ductility in Dental Ceramics. Journal of Dental Research, 2022, 101, 1467-1473.	2.5	5
120	Preservation and promotion of bone formation in the mandible as a response to a novel calciumâ€phosphate based biomaterial in mineral deficiency induced low bone mass male versus female rats. Journal of Biomedical Materials Research - Part A, 2016, 104, 1622-1632.	2.1	4
121	Mono or polycrystalline alumina-modified hybrid ceramics. Dental Materials, 2016, 32, 450-460.	1.6	4
122	Extended glaze firings for porcelain-veneered zirconia: Effects on the mechanical and optical behavior. Dental Materials, 2021, 37, 1096-1106.	1.6	4
123	Use of HEMA in Gelcasting of Ceramics: A Case Study on Fused Silica. Journal of the American Ceramic Society, 2006, 89, 060623005134011-???.	1.9	3
124	Metal-ceramic and porcelain-veneered lithium disilicate crowns: a stress profile comparison using a viscoelastic finite element model. Computer Methods in Biomechanics and Biomedical Engineering, 2022, 25, 412-423.	0.9	3
125	Prospective 5â€year clinical evaluation of posterior zirconia fixed dental prostheses veneered with milled lithium disilicate (CADon). Journal of Esthetic and Restorative Dentistry, 2022, , .	1.8	2
126	In vivo efficacy of calcium phosphateâ€based syntheticâ€boneâ€mineral on bone loss resulting from estrogen and mineral deficiencies. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2020, 108, 1868-1878.	1.6	1

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127	Design Equations for Mixed-Mode Fracture of Dental Ceramicâ€“Cement Interfaces Using the Brazil-Nut-Sandwich Test. Journal of Engineering Materials and Technology, Transactions of the ASME, 2021, 143, .	0.8	1
128	Fracture resistance of Ceramic-Polymer hybrid materials using microscopic finite element analysis and experimental validation. Computer Methods in Biomechanics and Biomedical Engineering, 2022, 25, 1785-1795.	0.9	1
129	Interfaces in fixed dental prostheses. , 2017, , 67-83.		0
130	Functionally graded nanostructured biomaterials (FGNB). , 2018, , 159-180.		0
131	Coating Dental Implants with Synthetic Bone Mineral for Early New Bone Formation in Vivo. Journal of Hard Tissue Biology, 2021, 30, 339-346.	0.2	0