

Xiaodu Wang

List of Publications by Year in descending order

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59
papers

2,592
citations

218677

26
h-index

189892

50
g-index

60
all docs

60
docs citations

60
times ranked

2377
citing authors

#	ARTICLE	IF	CITATIONS
1	Probability-based approach for characterization of microarchitecture and its effect on elastic properties of trabecular bone. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2022, 131, 105254.	3.1	0
2	Characterization of Microstructural Changes on Biglycan Induced Mice Bone by Low-Field Nuclear Magnetic Resonance. , 2021, 4, 58.		0
3	Intrafibrillar mineralization deficiency and osteogenesis imperfecta mouse bone fragility. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2021, 117, 104377.	3.1	15
4	Prediction of Elastic Behavior of Human Trabecular Bone Using A DXA Image-Based Deep Learning Model. <i>Jom</i> , 2021, 73, 2366-2376.	1.9	3
5	Removal of glycosaminoglycans affects the in situ mechanical behavior of extrafibrillar matrix in bone. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2021, 123, 104766.	3.1	8
6	Can DXA image-based deep learning model predict the anisotropic elastic behavior of trabecular bone?. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2021, 124, 104834.	3.1	6
7	Computational investigation of the effect of water on the nanomechanical behavior of bone. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2020, 101, 103454.	3.1	32
8	Biglycan and chondroitin sulfate play pivotal roles in bone toughness via retaining bound water in bone mineral matrix. <i>Matrix Biology</i> , 2020, 94, 95-109.	3.6	35
9	Prediction of trabecular bone architectural features by deep learning models using simulated DXA images. <i>Bone Reports</i> , 2020, 13, 100295.	0.4	13
10	Three-dimensional rendering of trabecular bone microarchitecture using a probabilistic approach. <i>Biomechanics and Modeling in Mechanobiology</i> , 2020, 19, 1263-1281.	2.8	9
11	Quantifying Engineering Faculty Performance Based on Expectations on Key Activities and Integration Using Flexible Weighting Factors. <i>Journal of Biomechanical Engineering</i> , 2020, 142, .	1.3	1
12	Computational Modeling of the Mechanical Behavior of 3D Hybrid Organic-Inorganic Nanocomposites. <i>Jom</i> , 2019, 71, 3951-3961.	1.9	6
13	Computational investigation of ultrastructural behavior of bone using a cohesive finite element approach. <i>Biomechanics and Modeling in Mechanobiology</i> , 2019, 18, 463-478.	2.8	25
14	Bioinspired design of hybrid composite materials. <i>International Journal of Smart and Nano Materials</i> , 2019, 10, 90-105.	4.2	18
15	Age-Related Deterioration of Bone Toughness Is Related to Diminishing Amount of Matrix Glycosaminoglycans (GAGs). <i>JBMR Plus</i> , 2018, 2, 164-173.	2.7	37
16	Commonality in the microarchitecture of trabecular bone: A preliminary study. <i>Bone</i> , 2018, 111, 59-70.	2.9	13
17	Osteoporosis affects both post-yield microdamage accumulation and plasticity degradation in vertebra of ovariectomized rats. <i>Acta Mechanica Sinica/Lixue Xuebao</i> , 2017, 33, 267-273.	3.4	2
18	Computational modeling of interfacial behaviors in nanocomposite materials. <i>International Journal of Solids and Structures</i> , 2017, 115-116, 43-52.	2.7	10

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19	An improved interfacial bonding model for material interface modeling. <i>Engineering Fracture Mechanics</i> , 2017, 169, 276-291.	4.3	13
20	Contribution of extrafibrillar matrix to the mechanical behavior of bone using a novel cohesive finite element model. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2017, 65, 224-235.	3.1	36
21	Effect of coring conditions on temperature rise in bone. <i>Bio-Medical Materials and Engineering</i> , 2017, 28, 201-211.	0.6	2
22	Coupling Effect of Water and Proteoglycans on the In Situ Toughness of Bone. <i>Journal of Bone and Mineral Research</i> , 2016, 31, 1026-1029.	2.8	35
23	Bone Formation is Affected by Matrix Advanced Glycation End Products (AGEs) In Vivo. <i>Calcified Tissue International</i> , 2016, 99, 373-383.	3.1	31
24	Effect of water on nanomechanics of bone is different between tension and compression. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2016, 57, 128-138.	3.1	44
25	Age-Related Effects of Advanced Glycation End Products (Ages) in Bone Matrix on Osteoclastic Resorption. <i>Calcified Tissue International</i> , 2015, 97, 592-601.	3.1	8
26	Water residing in small ultrastructural spaces plays a critical role in the mechanical behavior of bone. <i>Bone</i> , 2014, 59, 199-206.	2.9	38
27	Biomechanical properties and microarchitecture parameters of trabecular bone are correlated with stochastic measures of 2D projection images. <i>Bone</i> , 2013, 56, 327-336.	2.9	19
28	Progressive post-yield behavior of human cortical bone in shear. <i>Bone</i> , 2013, 53, 1-5.	2.9	14
29	Effect of age on mechanical properties of the collagen phase in different orientations of human cortical bone. <i>Bone</i> , 2013, 55, 288-291.	2.9	25
30	In situ mechanical behavior of mineral crystals in human cortical bone under compressive load using synchrotron X-ray scattering techniques. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2012, 14, 101-112.	3.1	17
31	Orientation dependence of progressive post-yield behavior of human cortical bone in compression. <i>Journal of Biomechanics</i> , 2012, 45, 2829-2834.	2.1	47
32	Mechanistic modeling of a nanoscratch test for determination of in situ toughness of bone. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2012, 5, 156-164.	3.1	12
33	In situ accumulation of advanced glycation endproducts (AGEs) in bone matrix and its correlation with osteoclastic bone resorption. <i>Bone</i> , 2011, 49, 174-183.	2.9	64
34	Effect of mineral-collagen interfacial behavior on the microdamage progression in bone using a probabilistic cohesive finite element model. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2011, 4, 943-952.	3.1	51
35	Post-yield nanomechanics of human cortical bone in compression using synchrotron X-ray scattering techniques. <i>Journal of Biomechanics</i> , 2011, 44, 676-682.	2.1	33
36	Constitutive relationship of tissue behavior with damage accumulation of human cortical bone. <i>Journal of Biomechanics</i> , 2010, 43, 2356-2361.	2.1	10

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37	Finite element simulation of nanoindentation tests for cortical bone using a damage plastic model. <i>Strength, Fracture and Complexity</i> , 2010, 6, 83-89.	0.3	1
38	Collagen mutation causes changes of the microdamage morphology in bone of an OI mouse model. <i>Bone</i> , 2010, 47, 1071-1075.	2.9	17
39	Random field assessment of nanoscopic inhomogeneity of bone. <i>Bone</i> , 2010, 47, 1080-1084.	2.9	17
40	Mechanical behavior of human cortical bone in cycles of advancing tensile strain for two age groups. <i>Journal of Biomedical Materials Research - Part A</i> , 2009, 89A, 521-529.	4.0	21
41	Probabilistic failure analysis of bone using a finite element model of mineral-collagen composites. <i>Journal of Biomechanics</i> , 2009, 42, 202-209.	2.1	22
42	Progressive post-yield behavior of human cortical bone in compression for middle-aged and elderly groups. <i>Journal of Biomechanics</i> , 2009, 42, 491-497.	2.1	54
43	Differences in the mechanical behavior of cortical bone between compression and tension when subjected to progressive loading. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2009, 2, 613-619.	3.1	60
44	Measurements of mobile and bound water by nuclear magnetic resonance correlate with mechanical properties of bone. <i>Bone</i> , 2008, 42, 193-199.	2.9	177
45	Age-related factors affecting the postyield energy dissipation of human cortical bone. <i>Journal of Orthopaedic Research</i> , 2007, 25, 646-655.	2.3	115
46	A novel approach to assess post-yield energy dissipation of bone in tension. <i>Journal of Biomechanics</i> , 2007, 40, 674-677.	2.1	31
47	Age-related effect on the concentration of collagen crosslinks in human osteonal and interstitial bone tissue. <i>Bone</i> , 2006, 39, 1210-1217.	2.9	81
48	Prediction of microdamage formation using a mineral-collagen composite model of bone. <i>Journal of Biomechanics</i> , 2006, 39, 595-602.	2.1	26
49	The influence of water removal on the strength and toughness of cortical bone. <i>Journal of Biomechanics</i> , 2006, 39, 931-938.	2.1	292
50	Effect of ultrastructural changes on the toughness of bone. <i>Micron</i> , 2005, 36, 566-582.	2.2	88
51	VALIDITY OF THE DIRECT RELATION BETWEEN THE FRACTURE MECHANICS PARAMETERS, K AND G, IN THE CASE OF BONE. <i>Journal of Mechanics in Medicine and Biology</i> , 2004, 04, 321-331.	0.7	2
52	The Toughness of Cortical Bone and Its Relationship with Age. <i>Annals of Biomedical Engineering</i> , 2004, 32, 123-135.	2.5	85
53	Age-Related Changes of Noncalcified Collagen in Human Cortical Bone. <i>Annals of Biomedical Engineering</i> , 2003, 31, 1365-1371.	2.5	50
54	Determination of cortical bone porosity and pore size distribution using a low field pulsed NMR approach. <i>Journal of Orthopaedic Research</i> , 2003, 21, 312-319.	2.3	161

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55	FINITE ELEMENT SIMULATION OF ELASTIC COMPLIANCE TECHNIQUE FOR FORMULATING A TEST METHOD TO DETERMINE THE FRACTURE TOUGHNESS OF BONE. <i>Journal of Mechanics in Medicine and Biology</i> , 2002, 02, 473-486.	0.7	2
56	Collagen and bone viscoelasticity: A dynamic mechanical analysis. <i>Journal of Biomedical Materials Research Part B</i> , 2002, 63, 31-36.	3.1	116
57	The role of collagen in determining bone mechanical properties. <i>Journal of Orthopaedic Research</i> , 2001, 19, 1021-1026.	2.3	299
58	The use of dynamic mechanical analysis to assess the viscoelastic properties of human cortical bone. <i>Journal of Biomedical Materials Research Part B</i> , 2001, 58, 47-53.	3.1	116
59	A mixed mode fracture toughness test of bone-biomaterial interfaces. <i>Journal of Biomedical Materials Research Part B</i> , 2000, 53, 664-672.	3.1	23