Hai-Chao Han

List of Publications by Year
in descending order

120 papers	2,968 citations	159358 30 h-index	189595 50 g-index
127 all docs	127 docs citations	127 times ranked	3323 citing authors

#	Article	IF	Citations
1	Twisted Blood Vessels: Symptoms, Etiology and Biomechanical Mechanisms. Journal of Vascular Research, 2012, 49, 185-197.	0.6	347
2	Matrix Metalloproteinase-28 Deletion Exacerbates Cardiac Dysfunction and Rupture After Myocardial Infarction in Mice by Inhibiting M2 Macrophage Activation. Circulation Research, 2013, 112, 675-688.	2.0	187
3	Longitudinal strain of canine and porcine aortas. Journal of Biomechanics, 1995, 28, 637-641.	0.9	135
4	Age-related cardiac muscle sarcopenia: Combining experimental and mathematical modeling to identify mechanisms. Experimental Gerontology, 2008, 43, 296-306.	1.2	99
5	A biomechanical model of artery buckling. Journal of Biomechanics, 2007, 40, 3672-3678.	0.9	95
6	Residual strains in porcine and canine trachea. Journal of Biomechanics, 1991, 24, 307-315.	0.9	90
7	Species Dependence of the Zero-Stress State of Aorta: Pig Versus Rat. Journal of Biomechanical Engineering, 1991, 113, 446-451.	0.6	81
8	Effects of elastin degradation and surrounding matrix support on artery stability. American Journal of Physiology - Heart and Circulatory Physiology, 2012, 302, H873-H884.	1.5	74
9	Artery Buckling: New Phenotypes, Models, and Applications. Annals of Biomedical Engineering, 2013, 41, 1399-1410.	1.3	72
10	Biomechanics of Cardiac Function. , 2015, 5, 1623-1644.		67
11	Myocardial Infarction Superimposed on Aging: MMP-9 Deletion Promotes M2 Macrophage Polarization. Journals of Gerontology - Series A Biological Sciences and Medical Sciences, 2016, 71, 475-483.	1.7	62
12	Blood vessel buckling within soft surrounding tissue generates tortuosity. Journal of Biomechanics, 2009, 42, 2797-2801.	0.9	60
13	Building a better infarct: Modulation of collagen cross-linking to increase infarct stiffness and reduce left ventricular dilation post-myocardial infarction. Journal of Molecular and Cellular Cardiology, 2015, 85, 229-239.	0.9	59
14	Arterial Wall Adaptation under Elevated Longitudinal Stretch in Organ Culture. Annals of Biomedical Engineering, 2003, 31, 403-411.	1.3	58
15	Combining experimental and mathematical modeling to reveal mechanisms of macrophage-dependent left ventricular remodeling. BMC Systems Biology, 2011, 5, 60.	3.0	56
16	Mechanical Buckling of Veins Under Internal Pressure. Annals of Biomedical Engineering, 2010, 38, 1345-1353.	1.3	52
17	Cardiac aging is initiated by matrix metalloproteinase-9-mediated endothelial dysfunction. American Journal of Physiology - Heart and Circulatory Physiology, 2014, 306, H1398-H1407.	1.5	51
18	Tortuosity Triggers Platelet Activation and Thrombus Formation in Microvessels. Journal of Biomechanical Engineering, 2011, 133, 121004.	0.6	47

#	Article	IF	Citations
19	Contractile Responses in Arteries Subjected to Hypertensive Pressure in Seven-Day Organ Culture. Annals of Biomedical Engineering, 2001, 29, 467-475.	1.3	46
20	Direct measurement of transverse residual strains in aorta. American Journal of Physiology - Heart and Circulatory Physiology, 1996, 270, H750-H759.	1.5	39
21	Nonlinear buckling of blood vessels: A theoretical study. Journal of Biomechanics, 2008, 41, 2708-2713.	0.9	39
22	Investigation of the optimal collagen fibre orientation in human iliac arteries. Journal of the Mechanical Behavior of Biomedical Materials, 2015, 52, 108-119.	1.5	37
23	SIRT1 and FOXO Mediate Contractile Differentiation of Vascular Smooth Muscle Cells under Cyclic Stretch. Cellular Physiology and Biochemistry, 2015, 37, 1817-1829.	1.1	36
24	Fluid-structure interaction modeling of aneurysmal arteries under steady-state and pulsatile blood flow: a stability analysis. Computer Methods in Biomechanics and Biomedical Engineering, 2018, 21, 219-231.	0.9	36
25	Sustained Axial Loading Lengthens Arteries in Organ Culture. Annals of Biomedical Engineering, 2005, 33, 867-877.	1.3	35
26	EFFECTS OF GEOMETRIC VARIATIONS ON THE BUCKLING OF ARTERIES. International Journal of Applied Mechanics, 2011, 03, 385-406.	1.3	34
27	Mechanical buckling of artery under pulsatile pressure. Journal of Biomechanics, 2012, 45, 1192-1198.	0.9	33
28	Twist buckling behavior of arteries. Biomechanics and Modeling in Mechanobiology, 2013, 12, 915-927.	1.4	33
29	Cardiac function of the naked mole-rat: ecophysiological responses to working underground. American Journal of Physiology - Heart and Circulatory Physiology, 2014, 306, H730-H737.	1.5	32
30	Platelet size and density affect shear-induced thrombus formation in tortuous arterioles. Physical Biology, 2013, 10, 056003.	0.8	31
31	Mechanical Properties of High Entropy Alloy Al0.1CoCrFeNi for Peripheral Vascular Stent Application. Cardiovascular Engineering and Technology, 2016, 7, 448-454.	0.7	31
32	Changes of opening angle in hypertensive and hypotensive arteries in 3-day organ culture. Journal of Biomechanics, 2006, 39, 2410-2418.	0.9	30
33	The Theoretical Foundation for Artery Buckling Under Internal Pressure. Journal of Biomechanical Engineering, 2009, 131, 124501.	0.6	30
34	A model to determine the effect of collagen fiber alignment on heart function post myocardial infarction. Theoretical Biology and Medical Modelling, 2014, 11, 6.	2.1	30
35	Postsurgical Changes of the Opening Angle of Canine Autogenous Vein Graft. Journal of Biomechanical Engineering, 1998, 120, 211-216.	0.6	29
36	Matrix Metalloproteinase-2 and -9 Are Associated With High Stresses Predicted Using a Nonlinear Heterogeneous Model of Arteries. Journal of Biomechanical Engineering, 2009, 131, 011009.	0.6	28

#	Article	IF	Citations
37	Artery buckling analysis using a four-fiber wall model. Journal of Biomechanics, 2014, 47, 2790-2796.	0.9	28
38	ACE inhibitors to block MMP-9 activity: New functions for old inhibitors. Journal of Molecular and Cellular Cardiology, 2007, 43, 664-666.	0.9	25
39	Computational simulation of platelet interactions in the initiation of stent thrombosis due to stent malapposition. Physical Biology, 2016, 13, 016001.	0.8	24
40	Spatial variations in wall thickness, material stiffness and initial shape affect wall stress and shape of intracranial aneurysms. Neurological Research, 2007, 29, 569-577.	0.6	23
41	Effects of Axial Stretch on Cell Proliferation and Intimal Thickness in Arteries in Organ Culture. Cellular and Molecular Bioengineering, 2010, 3, 286-295.	1.0	23
42	A conceptual cellular interaction model of left ventricular remodelling post-MI: dynamic network with exit-entry competition strategy. BMC Systems Biology, 2010, 4, S5.	3.0	21
43	The Effect of Trabeculae Carneae on Left Ventricular Diastolic Compliance: Improvement in Compliance With Trabecular Cutting. Journal of Biomechanical Engineering, 2017, 139, .	0.6	21
44	Simulation of the microscopic process during initiation of stent thrombosis. Computers in Biology and Medicine, 2015, 56, 182-191.	3.9	20
45	Artery buckling analysis using a two-layered wall model with collagen dispersion. Journal of the Mechanical Behavior of Biomedical Materials, 2016, 60, 515-524.	1.5	20
46	Alterations of Pulse Pressure Stimulate Arterial Wall Matrix Remodeling. Journal of Biomechanical Engineering, 2009, 131, 101011.	0.6	19
47	A Nonlinear Thin-Wall Model for Vein Buckling. Cardiovascular Engineering and Technology, 2010, 1, 282-289.	0.7	19
48	Determination of the Critical Buckling Pressure of Blood Vessels Using the Energy Approach. Annals of Biomedical Engineering, 2011, 39, 1032-1040.	1.3	19
49	Morphologic adaptation of arterial endothelial cells to longitudinal stretch in organ culture. Journal of Biomechanics, 2008, 41, 3274-3277.	0.9	18
50	Mechanical instability of normal and aneurysmal arteries. Journal of Biomechanics, 2014, 47, 3868-3875.	0.9	18
51	Hemodynamic effects of myocardial bridging in patients with hypertrophic cardiomyopathy. American Journal of Physiology - Heart and Circulatory Physiology, 2019, 317, H1282-H1291.	1.5	18
52	Comparison of Biomechanical Properties and Microstructure of Trabeculae Carneae, Papillary Muscles, and Myocardium in the Human Heart. Journal of Biomechanical Engineering, 2019, 141, .	0.6	18
53	Smooth muscle cell contraction increases the critical buckling pressure of arteries. Journal of Biomechanics, 2013, 46, 841-844.	0.9	16
54	An In Vivo Rat Model of Artery Buckling for Studying Wall Remodeling. Annals of Biomedical Engineering, 2014, 42, 1658-1667.	1.3	16

#	Article	IF	Citations
55	Artery buckling affects the mechanical stress in atherosclerotic plaques. BioMedical Engineering OnLine, 2015, 14, S4.	1.3	16
56	Alterations in Pulse Pressure Affect Artery Function. Cellular and Molecular Bioengineering, 2012, 5, 474-487.	1.0	15
57	Mathematical modeling of left ventricular dimensional changes in mice during aging. BMC Systems Biology, 2012, 6, S10.	3.0	15
58	Twist buckling of veins under torsional loading. Journal of Biomechanics, 2017, 58, 123-130.	0.9	15
59	Effect of Red Blood Cells on Platelet Activation and Thrombus Formation in Tortuous Arterioles. Frontiers in Bioengineering and Biotechnology, 2013, 1, 18.	2.0	14
60	Stability of Carotid Artery Under Steady-State and Pulsatile Blood Flow: A Fluidâ€“Structure Interaction Study. Journal of Biomechanical Engineering, 2015, 137, 061007.	0.6	14
61	Computational simulations of the helical buckling behavior of blood vessels. International Journal for Numerical Methods in Biomedical Engineering, 2019, 35, e3277.	1.0	14
62	Comparison of Artery Organ Culture and Co-culture Models for Studying Endothelial Cell Migration and Its Effect on Smooth Muscle Cell Proliferation and Migration. Annals of Biomedical Engineering, 2010, 38, 801-812.	1.3	13
63	Quantitative Prediction of Improvement in Cardiac Function after Revascularization with MR Imaging and Modeling: Initial Results. Radiology, 2001, 221, 515-522.	3.6	12
64	Artery buckling stimulates cell proliferation and NF-Î°B signaling. American Journal of Physiology - Heart and Circulatory Physiology, 2014, 307, H542-H551.	1.5	10
65	Artery Remodeling Under Axial Twist in Three Days Organ Culture. Annals of Biomedical Engineering, 2015, 43, 1738-1747.	1.3	10
66	The Effect of Pentagalloyl Glucose on the Wall Mechanics and Inflammatory Activity of Rat Abdominal Aortic Aneurysms. Journal of Biomechanical Engineering, 2018, 140, .	0.6	10
67	Critical buckling pressure in mouse carotid arteries with altered elastic fibers. Journal of the Mechanical Behavior of Biomedical Materials, 2015, 46, 69-82.	1.5	9
68	Effect of Axial Stretch on Lumen Collapse of Arteries. Journal of Biomechanical Engineering, 2016, 138, .	0.6	9
69	Targeting myocardial infarction-specific protein interaction network using computational analyses. , 2011, , .		8
70	Buckling of Arteries With Noncircular Cross Sections: Theory and Finite Element Simulations. Frontiers in Physiology, 2021, 12, 712636.	1.3	8
71	A Left Ventricle Model to Predict Post-Revascularization Ejection Fraction Based on Cine Magnetic Resonance Images. Journal of Biomechanical Engineering, 2002, 124, 52-55.	0.6	7
72	Arterial wall remodeling under sustained axial twisting in rats. Journal of Biomechanics, 2017, 60, 124-133.	0.9	7

#	Article	IF	Citations
73	The mechanical buckling of curved arteries. MCB Molecular and Cellular Biomechanics, 2009, 6, 93-9.	0.3	7
74	Effects of material non-symmetry on the mechanical behavior of arterial wall. Journal of the Mechanical Behavior of Biomedical Materials, 2022, 129, 105157.	1.5	7
75	Buckling Reduces eNOS Production and Stimulates Extracellular Matrix Remodeling in Arteries in Organ Culture. Annals of Biomedical Engineering, 2016, 44, 2840-2850.	1.3	6
76	Investigation of Stent Implant Mechanics Using Linear Analytical and Computational Approach. Cardiovascular Engineering and Technology, 2017, 8, 81-90.	0.7	6
77	An echocardiogram-based 16-segment model for predicting left ventricular ejection fraction improvement. Journal of Theoretical Biology, 2004, 228, 7-15.	0.8	5
78	Mechanical buckling of arterioles in collateral development. Journal of Theoretical Biology, 2013, 316, 42-48.	0.8	5
79	The effect of collagenase on the critical buckling pressure of arteries. MCB Molecular and Cellular Biomechanics, 2012, 9, 55-75.	0.3	5
80	Prediction of the Left Ventricular Ejection Fraction Improvement Using Echocardiography and Mechanical Modeling. Journal of the American Society of Echocardiography, 2005, 18, 718-721.	1.2	4
81	Arterial Wall Stiffening in Caveolin-1 Deficiency-Induced Pulmonary Artery Hypertension in Mice. Experimental Mechanics, 2021, 61, 217-228.	1.1	4
82	COMPUTATIONAL SIMULATIONS OF THE BUCKLING OF OVAL AND TAPERED ARTERIES. , 2009, , 53-64.		4
83	Assessment of Function in Tissue-Engineered Vascular Grafts. , 2003, , 258-267.		3
84	The Critical Buckling Pressure of Arteries. , 2007, , 175.		3
85	Critical Buckling Pressure of Veins. , 2008, , .		3
86	A Hemodynamic Comparison of Myocardial Bridging and Coronary Atherosclerotic Stenosis: A Computational Model With Experimental Evaluation. Journal of Biomechanical Engineering, 2021, 143, .	0.6	3
87	Linear increase law of optimum age of scientific creativity. Scientometrics, 1989, 15, 309-312.	1.6	2
88	Finite Element Analysis of Buckling of Arteries With Aneurysms. , 2009, , .		2
89	Computational Modeling of Human Left Ventricle to Assess the Effects of Trabeculae Carneae on the Diastolic and Systolic Functions. Journal of Biomechanical Engineering, 2019, 141, .	0.6	2
90	Growth-profile configuration for specific deformations of tubular organs: A study of growth-induced thinning and dilation of the human cervix. PLoS ONE, 2021, 16, e0255895.	1.1	2

#	Article	IF	Citations
91	Numerical Simulation of Thrombotic Occlusion in Tortuous Arterioles. , 2017, 2, 095-111.		2
92	Mechanical behavior and wall remodeling of blood vessels under axial twist. Yiyong Shengwu Lixue/Journal of Medical Biomechanics, 2016, 31, 319-326.	1.0	2
93	Numerical simulations of the nonsymmetric growth and remodeling of arteries under axial twisting. Journal of Biomechanics, 2022, 140, 111165.	0.9	2
94	The relation between viable segments and left ventricular ejection fraction improvement. Journal of Medical Engineering and Technology, 2004, 28, 242-253.	0.8	1
95	The effect of collagenase on arterial opening angle. , 2009, , .		1
96	Buckling Behavior of Arteries Under Torsion. , 2011, , .		1
97	Mechanical Buckling of Artery Under Pulsatile Flow. , 2011, , .		1
98	STRESS ANALYSIS OF CAROTID ARTERY STENT UNDER BENDING AND TORSION. Journal of Biomechanics, 2012, 45, S637.	0.9	1
99	The Stability of Veins Under Torsion. , 2012, , .		1
100	Trabecular cutting: a novel surgical therapy to increase diastolic compliance. Journal of Applied Physiology, 2019, 127, 457-463.	1.2	1
101	Characterization of residual stresses from cold expansion using spatial statistics. Fatigue and Fracture of Engineering Materials and Structures, 2021, 44, 101-114.	1.7	1
102	Quantifying Engineering Faculty Performance Based on Expectations on Key Activities and Integration Using Flexible Weighting Factors. Journal of Biomechanical Engineering, 2020, 142, .	0.6	1
103	Increased tortuosity promotes platelet activation and thrombus formation in microvessels. FASEB Journal, 2012, 26, 1058.10.	0.2	1
104	Numerical Simulation of Myocardial Bridging in Patients with Hypertrophic Cardiomyopathy. MCB Molecular and Cellular Biomechanics, 2019, 16, 16-17.	0.3	1
105	Numerical Simulation of Thrombotic Occlusion in Tortuous Arterioles. Journal of Cardiology and Cardiovascular Medicine, 2017, 2, 95-111.	0.1	1
106	Response to Comment on â€œA biomechanical model of artery bucklingâ€. Journal of Biomechanics, 2010, 43, 802-803.	0.9	0
107	Response to comment on â€œA biomechanical model of artery bucklingâ€•and subsequent comments. Journal of Biomechanics, 2010, 43, 2864.	0.9	0
108	Aneurismal Arteries are Vulnerable to Mechanical Buckling. , 2013, , .		0

#	Article	IF	Citations
109	Computational Simulations in the Cardiovascular System. Scientific World Journal, The, 2014, 2014, 1-1.	0.8	0
110	Understanding the mechanisms of mechanical unloading to achieve myocardial recovery. American Journal of Physiology - Heart and Circulatory Physiology, 2018, 315, H1519-H1520.	1.5	0
111	Novel Architected Material for Cardiac Patches. Jom, 2021, 73, 1765-1773.	0.9	0
112	Quantitative Evaluation of Faculty Research Productivity. The Department Chair, 2021, 32, 20-21.	0.1	0
113	Effect of Pulse Pressure on the Vasomotor Function of Arteries. , 2007, , .		0
114	The Mechanism of Pulse Pressure Affecting the Permeability of Arteries. , 2008, , .		0
115	Flow Increases Endothelial Migration and Inhibits Smooth Muscle Cell Proliferation in Artery and Co-Culture Models. , 2008, , .		0
116	Changes in Pulse Pressure Alter Arterial Wall Permeability. , 2009, , .		0
117	Mechanical Performance Study of Vascular Stent Using Computational Modeling and Simulation. IFMBE Proceedings, 2010, , 1443-1446.	0.2	0
118	Contributions of Platelet Activation and Collision to Thrombus Formation in Tortuous Venules. , 2012, , .		0
119	Adaptation of endothelial cells in arteries under axial stretch in organ culture. , 0, , .		0
120	Predicting ejection fraction improvement by mechanical model and cine magnetic resonance images. , 0, , .		0