

# Gerhard A Holzapfel

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/1494652/publications.pdf>

Version: 2024-02-01

228  
papers

19,923  
citations

12330

69  
h-index

11939

134  
g-index

236  
all docs

236  
docs citations

236  
times ranked

8618  
citing authors

#	ARTICLE	IF	CITATIONS
1	The effects of viscoelasticity on residual strain in aortic soft tissues. <i>Acta Biomaterialia</i> , 2022, 140, 398-411.	8.3	13
2	Biomechanics of mitral valve leaflets: Second harmonic generation microscopy, biaxial mechanical tests and tissue modeling. <i>Acta Biomaterialia</i> , 2022, 141, 244-254.	8.3	11
3	An ultrastructural 3D reconstruction method for observing the arrangement of collagen fibrils and proteoglycans in the human aortic wall under mechanical load. <i>Acta Biomaterialia</i> , 2022, 141, 300-314.	8.3	7
4	Role of smooth muscle activation in the static and dynamic mechanical characterization of human aortas. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2022, 119, .	7.1	20
5	Differences in Collagen Fiber Diameter and Waviness between Healthy and Aneurysmal Abdominal Aortas. <i>Microscopy and Microanalysis</i> , 2022, 28, 1649-1663.	0.4	14
6	Multiscale simulations suggest a protective role of neo-adventitia in abdominal aortic aneurysms. <i>Acta Biomaterialia</i> , 2022, 146, 248-258.	8.3	5
7	A constitutive model for fibrous tissues with cross-linked collagen fibers including dispersion " With an analysis of the Poynting effect. <i>Journal of the Mechanics and Physics of Solids</i> , 2022, 164, 104911.	4.8	5
8	Multi-fidelity surrogate modeling through hybrid machine learning for biomechanical and finite element analysis of soft tissues. <i>Computers in Biology and Medicine</i> , 2022, 148, 105699.	7.0	5
9	A discrete approach for modeling degraded elastic fibers in aortic dissection. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2021, 373, 113511.	6.6	18
10	A backward pre-stressing algorithm for efficient finite element implementation of in vivo material and geometrical parameters into fibril-reinforced mixture models of articular cartilage. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2021, 114, 104203.	3.1	4
11	Quantification of load-dependent changes in the collagen fiber architecture for the strut chordae tendineae-leaflet insertion of porcine atrioventricular heart valves. <i>Biomechanics and Modeling in Mechanobiology</i> , 2021, 20, 223-241.	2.8	8
12	On the mechanical modeling of cell components. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2021, 20, e202000129.	0.2	1
13	Importance of residual stress and basal tone in healthy and pathological human coronary arteries. , 2021, , 433-461.		1
14	A pilot study on biaxial mechanical, collagen microstructural, and morphological characterizations of a resected human intracranial aneurysm tissue. <i>Scientific Reports</i> , 2021, 11, 3525.	3.3	15
15	Constitutive modeling using structural information on collagen fiber direction and dispersion in human superficial femoral artery specimens of different ages. <i>Acta Biomaterialia</i> , 2021, 121, 461-474.	8.3	27
16	Numerical simulation of the viral entry into a cell driven by receptor diffusion. <i>Computers and Mathematics With Applications</i> , 2021, 84, 224-243.	2.7	3
17	Numerical analysis of the impact of cytoskeletal actin filament density alterations onto the diffusive vesicle-mediated cell transport. <i>PLoS Computational Biology</i> , 2021, 17, e1008784.	3.2	6
18	Microstructural and mechanical characterization of the layers of human descending thoracic aortas. <i>Acta Biomaterialia</i> , 2021, 134, 401-421.	8.3	37

#	ARTICLE	IF	CITATIONS
19	Viscoelastic characterization of human descending thoracic aortas under cyclic load. <i>Acta Biomaterialia</i> , 2021, 130, 291-307.	8.3	36
20	Implementation of collagen fiber dispersion in a growth and remodeling model of arterial walls. <i>Journal of the Mechanics and Physics of Solids</i> , 2021, 153, 104498.	4.8	5
21	Multiscale numerical analyses of arterial tissue with embedded elements in the finite strain regime. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2021, 381, 113844.	6.6	19
22	Poro-Viscoelastic Effects During Biomechanical Testing of Human Brain Tissue. <i>Frontiers in Mechanical Engineering</i> , 2021, 7, .	1.8	10
23	An active approach of pressure waveform matching for stress-based testing of arteries. <i>Artificial Organs</i> , 2021, 45, 1562-1575.	1.9	6
24	A viscoelastic model for human myocardium. <i>Acta Biomaterialia</i> , 2021, 135, 441-457.	8.3	23
25	Effects of enzyme-based removal of collagen and elastin constituents on the biaxial mechanical responses of porcine atrioventricular heart valve anterior leaflets. <i>Acta Biomaterialia</i> , 2021, 135, 425-440.	8.3	10
26	Predictive constitutive modelling of arteries by deep learning. <i>Journal of the Royal Society Interface</i> , 2021, 18, 20210411.	3.4	30
27	Fluid-Structure Interaction Simulations of Aortic Dissection. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2021, 20, e202000125.	0.2	4
28	Commentary: May the force(s) be with you: Loading conditions and the aorta. <i>Journal of Thoracic and Cardiovascular Surgery</i> , 2021, , .	0.8	1
29	Efficient computational modelling of smooth muscle orientation and function in the aorta. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2021, 477, .	2.1	1
30	A Pointwise Evaluation Metric to Visualize Errors in Machine Learning Surrogate Models. <i>Frontiers in Artificial Intelligence and Applications</i> , 2021, , .	0.3	0
31	Numerical modeling of the receptor driven endocytosis. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2021, 21, .	0.2	0
32	An arterial constitutive model accounting for collagen content and cross-linking. <i>Journal of the Mechanics and Physics of Solids</i> , 2020, 136, 103682.	4.8	29
33	Fifty Shades of Brain: A Review on the Mechanical Testing and Modeling of Brain Tissue. <i>Archives of Computational Methods in Engineering</i> , 2020, 27, 1187-1230.	10.2	215
34	A phase-field model for fracture of unidirectional fiber-reinforced polymer matrix composites. <i>Computational Mechanics</i> , 2020, 65, 1149-1166.	4.0	36
35	Load-dependent collagen fiber architecture data of representative bovine tendon and mitral valve anterior leaflet tissues as quantified by an integrated opto-mechanical system. <i>Data in Brief</i> , 2020, 28, 105081.	1.0	0
36	Towards microstructure-informed material models for human brain tissue. <i>Acta Biomaterialia</i> , 2020, 104, 53-65.	8.3	57

#	ARTICLE	IF	CITATIONS
37	Integration of polarized spatial frequency domain imaging (pSFDI) with a biaxial mechanical testing system for quantification of load-dependent collagen architecture in soft collagenous tissues. <i>Acta Biomaterialia</i> , 2020, 102, 149-168.	8.3	41
38	Quantifying stent-induced damage in coronary arteries by investigating mechanical and structural alterations. <i>Acta Biomaterialia</i> , 2020, 116, 285-301.	8.3	10
39	Biomechanical characterization of a chronic type a dissected human aorta. <i>Journal of Biomechanics</i> , 2020, 110, 109978.	2.1	17
40	A pilot <i>in silico</i> modeling-based study of the pathological effects on the biomechanical function of tricuspid valves. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2020, 36, e3346.	2.1	16
41	Modeling the porous and viscous responses of human brain tissue behavior. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2020, 369, 113128.	6.6	39
42	Biochemomechanics of the thoracic aorta in health and disease. <i>Progress in Biomedical Engineering</i> , 2020, 2, 032002.	4.9	13
43	Detection, segmentation, simulation and visualization of aortic dissections: A review. <i>Medical Image Analysis</i> , 2020, 65, 101773.	11.6	57
44	Experimental and mathematical characterization of coronary polyamide-12 balloon catheter membranes. <i>PLoS ONE</i> , 2020, 15, e0234340.	2.5	4
45	Rate-dependent mechanical behaviour of semilunar valves under biaxial deformation: From quasi-static to physiological loading rates. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2020, 104, 103645.	3.1	7
46	An efficient and accurate method for modeling nonlinear fractional viscoelastic biomaterials. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2020, 362, 112834.	6.6	29
47	Mechanics of Porcine Heart Valves™ Strut Chordae Tendineae Investigated as a Leaflet™Chordae™Papillary Muscle Entity. <i>Annals of Biomedical Engineering</i> , 2020, 48, 1463-1474.	2.5	9
48	A damage model for collagen fibres with an application to collagenous soft tissues. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2020, 476, 20190821.	2.1	10
49	Mechanical characterization of porcine liver properties for computational simulation of indentation on cancerous tissue. <i>Mathematical Medicine and Biology</i> , 2020, 37, 469-490.	1.2	7
50	Role of Vessel Microstructure in the Longevity of End-to-Side Grafts. <i>Journal of Biomechanical Engineering</i> , 2020, 142, .	1.3	4
51	On the quasi-incompressible finite element analysis of anisotropic hyperelastic materials. <i>Computational Mechanics</i> , 2019, 63, 443-453.	4.0	34
52	On the importance of modeling balloon folding, pleating, and stent crimping: An FE study comparing experimental inflation tests. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2019, 35, e3249.	2.1	23
53	Biomechanics of aortic wall failure with a focus on dissection and aneurysm: A review. <i>Acta Biomaterialia</i> , 2019, 99, 1-17.	8.3	99
54	An investigation of layer-specific tissue biomechanics of porcine atrioventricular valve anterior leaflets. <i>Acta Biomaterialia</i> , 2019, 96, 368-384.	8.3	24

#	ARTICLE	IF	CITATIONS
55	An investigation of the glycosaminoglycan contribution to biaxial mechanical behaviours of porcine atrioventricular heart valve leaflets. <i>Journal of the Royal Society Interface</i> , 2019, 16, 20190069.	3.4	16
56	Failure properties and microstructure of healthy and aneurysmatic human thoracic aortas subjected to uniaxial extension with a focus on the media. <i>Acta Biomaterialia</i> , 2019, 99, 443-456.	8.3	26
57	Computational modeling of progressive damage and rupture in fibrous biological tissues: application to aortic dissection. <i>Biomechanics and Modeling in Mechanobiology</i> , 2019, 18, 1607-1628.	2.8	36
58	A finite element implementation of a growth and remodeling model for soft biological tissues: Verification and application to abdominal aortic aneurysms. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2019, 352, 586-605.	6.6	29
59	On fibre dispersion modelling of soft biological tissues: a review. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2019, 475, 20180736.	2.1	61
60	Anisotropic residual stresses in arteries. <i>Journal of the Royal Society Interface</i> , 2019, 16, 20190029.	3.4	36
61	Micromechanically-motivated analysis of fibrous tissue. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2019, 96, 69-78.	3.1	11
62	The role of tissue remodeling in mechanics and pathogenesis of abdominal aortic aneurysms. <i>Acta Biomaterialia</i> , 2019, 88, 149-161.	8.3	60
63	Multiscale modeling of fiber recruitment and damage with a discrete fiber dispersion method. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 126, 226-244.	4.8	33
64	Rate-dependency of the mechanical behaviour of semilunar heart valves under biaxial deformation. <i>Acta Biomaterialia</i> , 2019, 88, 120-130.	8.3	18
65	Challenges and perspectives in brain tissue testing and modeling. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2019, 19, e201900269.	0.2	4
66	Computational modeling of adhesive contact between a virus and a cell during receptor driven endocytosis. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2019, 19, e201900161.	0.2	2
67	The influence of fiber dispersion on the mechanical response of aortic tissues in health and disease: a computational study. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2018, 21, 99-112.	1.6	14
68	A discrete fibre dispersion method for excluding fibres under compression in the modelling of fibrous tissues. <i>Journal of the Royal Society Interface</i> , 2018, 15, 20170766.	3.4	53
69	An exponential constitutive model excluding fibres under compression: Application to extensionâ€œinflation of a residually stressed carotid artery. <i>Mathematics and Mechanics of Solids</i> , 2018, 23, 1206-1224.	2.4	18
70	Modeling fibrous biological tissues with a general invariant that excludes compressed fibers. <i>Journal of the Mechanics and Physics of Solids</i> , 2018, 110, 38-53.	4.8	29
71	A Brief Review on Computational Modeling of Rupture in Soft Biological Tissues. <i>Computational Methods in Applied Sciences (Springer)</i> , 2018, , 113-144.	0.3	6
72	Numerical aspects of anisotropic failure in soft biological tissues favor energy-based criteria: A rate-dependent anisotropic crack phase-field model. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2018, 331, 23-52.	6.6	73

#	ARTICLE	IF	CITATIONS
73	Numerical analyses of the interrelation between extracellular smooth muscle orientation and intracellular filament overlap in the human abdominal aorta. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2018, 98, 2198-2221.	1.6	8
74	Viscoelasticity of cross-linked actin network embedded in cytosol. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800151.	0.2	0
75	Preface of the special issue on mathematical and computational modeling in biomechanics. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2018, 98, 2044-2046.	1.6	0
76	Mechanical response of human subclavian and iliac arteries to extension, inflation and torsion. Acta Biomaterialia, 2018, 75, 235-252.	8.3	20
77	Biomechanical relevance of the microstructure in artery walls with a focus on passive and active components. American Journal of Physiology - Heart and Circulatory Physiology, 2018, 315, H540-H549.	3.2	45
78	Compressibility and Anisotropy of the Ventricular Myocardium: Experimental Analysis and Microstructural Modeling. Journal of Biomechanical Engineering, 2018, 140, .	1.3	44
79	Title is missing!. , 2018, , .		1
80	Title is missing!. , 2018, , .		0
81	A Mechanobiological model for damage-induced growth in arterial tissue with application to in-stent restenosis. Journal of the Mechanics and Physics of Solids, 2017, 101, 311-327.	4.8	31
82	A family of hyperelastic models for human brain tissue. Journal of the Mechanics and Physics of Solids, 2017, 106, 60-79.	4.8	130
83	Multiscale and Multiaxial Mechanics of Vascular Smooth Muscle. Biophysical Journal, 2017, 113, 714-727.	0.5	22
84	Viscoelastic parameter identification of human brain tissue. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 74, 463-476.	3.1	124
85	Comparison of two model frameworks for fiber dispersion in the elasticity of soft biological tissues. European Journal of Mechanics, A/Solids, 2017, 66, 193-200.	3.7	26
86	Rheological characterization of human brain tissue. Acta Biomaterialia, 2017, 60, 315-329.	8.3	124
87	On Fiber Dispersion Models: Exclusion of Compressed Fibers and Spurious Model Comparisons. Journal of Elasticity, 2017, 129, 49-68.	1.9	43
88	Mechanical characterization of human brain tissue. Acta Biomaterialia, 2017, 48, 319-340.	8.3	423
89	Microstructure and Mechanics of Human Aortas in Health and Disease. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2017, , 157-192.	1.0	0
90	2.3 BIOMECHANICAL AND STRUCTURAL QUANTIFICATION OF VASCULAR DAMAGE: A UNIQUE INVESTIGATION OF STENT IMPLANTATION. Artery Research, 2017, 20, 50.	0.6	2

#	ARTICLE	IF	CITATIONS
91	Phase-Field Models for the Failure of Anisotropic Continua. Proceedings in Applied Mathematics and Mechanics, 2017, 17, 91-94.	0.2	5
92	Modeling of Damage in Soft Biological Tissues. , 2017, , 101-123.		11
93	Microstructure and mechanics of healthy and aneurysmatic abdominal aortas: experimental analysis and modelling. Journal of the Royal Society Interface, 2016, 13, 20160620.	3.4	137
94	On the thermodynamics of smooth muscle contraction. Journal of the Mechanics and Physics of Solids, 2016, 94, 490-503.	4.8	12
95	Very large and giant microsurgical bifurcation aneurysms in rabbits: Proof of feasibility and comparability using computational fluid dynamics and biomechanical testing. Journal of Neuroscience Methods, 2016, 268, 7-13.	2.5	5
96	Stress softening and permanent deformation in human aortas: Continuum and computational modeling with application to arterial clamping. Journal of the Mechanical Behavior of Biomedical Materials, 2016, 61, 600-616.	3.1	57
97	An orthotropic viscoelastic model for the passive myocardium: continuum basis and numerical treatment. Computer Methods in Biomechanics and Biomedical Engineering, 2016, 19, 1647-1664.	1.6	59
98	Cross-linked actin networks: Micro- and macroscopic effects. Proceedings in Applied Mathematics and Mechanics, 2016, 16, 93-94.	0.2	0
99	Computational method for excluding fibers under compression in modeling soft fibrous solids. European Journal of Mechanics, A/Solids, 2016, 57, 178-193.	3.7	48
100	A phase-field approach to model fracture of arterial walls: Theory and finite element analysis. Computer Methods in Applied Mechanics and Engineering, 2016, 312, 542-566.	6.6	80
101	A microstructurally based continuum model of cartilage viscoelasticity and permeability incorporating measured statistical fiber orientations. Biomechanics and Modeling in Mechanobiology, 2016, 15, 229-244.	2.8	55
102	Mechanical assessment of arterial dissection in health and disease: Advancements and challenges. Journal of Biomechanics, 2016, 49, 2366-2373.	2.1	35
103	Length adaptation of smooth muscle contractile filaments in response to sustained activation. Journal of Theoretical Biology, 2016, 397, 13-21.	1.7	12
104	Mechanical strength of aneurysmatic and dissected human thoracic aortas at different shear loading modes. Journal of Biomechanics, 2016, 49, 2374-2382.	2.1	75
105	Microglia mechanics: immune activation alters traction forces and durotaxis. Frontiers in Cellular Neuroscience, 2015, 9, 363.	3.7	113
106	Quantification of Shear Deformations and Corresponding Stresses in the Biaxially Tested Human Myocardium. Annals of Biomedical Engineering, 2015, 43, 2334-2348.	2.5	61
107	Selective enzymatic removal of elastin and collagen from human abdominal aortas: Uniaxial mechanical response and constitutive modeling. Acta Biomaterialia, 2015, 17, 125-136.	8.3	60
108	Mechanics of the brain: perspectives, challenges, and opportunities. Biomechanics and Modeling in Mechanobiology, 2015, 14, 931-965.	2.8	289

#	ARTICLE	IF	CITATIONS
109	Investigation of the optimal collagen fibre orientation in human iliac arteries. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2015, 52, 108-119.	3.1	37
110	Structure, Mechanics, and Histology of Intraluminal Thrombi in Abdominal Aortic Aneurysms. <i>Annals of Biomedical Engineering</i> , 2015, 43, 1488-1501.	2.5	28
111	A Thick-Walled Fluid-Solid-Growth Model of Abdominal Aortic Aneurysm Evolution: Application to a Patient-Specific Geometry. <i>Journal of Biomechanical Engineering</i> , 2015, 137, .	1.3	41
112	Modelling non-symmetric collagen fibre dispersion in arterial walls. <i>Journal of the Royal Society Interface</i> , 2015, 12, 20150188.	3.4	200
113	Diameter-Related Variations of Geometrical, Mechanical, and Mass Fraction Data in the Anterior Portion of Abdominal Aortic Aneurysms. <i>European Journal of Vascular and Endovascular Surgery</i> , 2015, 49, 262-270.	1.5	25
114	Constitutive modelling of arteries considering fibre recruitment and three-dimensional fibre distribution. <i>Journal of the Royal Society Interface</i> , 2015, 12, 20150111.	3.4	52
115	A method for incorporating three-dimensional residual stretches/stresses into patient-specific finite element simulations of arteries. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2015, 47, 147-164.	3.1	62
116	Coupled Models for Soft Biological Tissue Disorders. <i>Annals of Biomedical Engineering</i> , 2015, 43, 1475-1476.	2.5	0
117	Biomechanical properties and microstructure of human ventricular myocardium. <i>Acta Biomaterialia</i> , 2015, 24, 172-192.	8.3	217
118	On the tension-compression switch in soft fibrous solids. <i>European Journal of Mechanics, A/Solids</i> , 2015, 49, 561-569.	3.7	95
119	Human thoracic and abdominal aortic aneurysmal tissues: Damage experiments, statistical analysis and constitutive modeling. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2015, 41, 92-107.	3.1	76
120	Finite element analysis of abdominal aortic aneurysms: geometrical and structural reconstruction with application of an anisotropic material model. <i>IMA Journal of Applied Mathematics</i> , 2014, 79, 1011-1026.	1.6	21
121	Classical and all-floating FETI methods for the simulation of arterial tissues. <i>International Journal for Numerical Methods in Engineering</i> , 2014, 99, 290-312.	2.8	17
122	Re "How Should We Measure and Report Elasticity of Aortic Tissue?"™. <i>European Journal of Vascular and Endovascular Surgery</i> , 2014, 47, 110-111.	1.5	0
123	Variations of dissection properties and mass fractions with thrombus age in human abdominal aortic aneurysms. <i>Journal of Biomechanics</i> , 2014, 47, 14-23.	2.1	31
124	A generalized prestressing algorithm for finite element simulations of preloaded geometries with application to the aorta. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2014, 30, 857-872.	2.1	40
125	Computational approaches for analyzing the mechanics of atherosclerotic plaques: A review. <i>Journal of Biomechanics</i> , 2014, 47, 859-869.	2.1	102
126	Mechanical modeling of rheometer experiments: Applications to rubber and actin networks. <i>International Journal of Non-Linear Mechanics</i> , 2014, 67, 300-307.	2.6	3



#	ARTICLE	IF	CITATIONS
127	Advances in the mechanical modeling of filamentous actin and cross-linked networks on multiple scales. <i>Biomechanics and Modeling in Mechanobiology</i> , 2014, 13, 1155-1174.	2.8	18
128	Uniaxial tensile testing approaches for characterisation of atherosclerotic plaques. <i>Journal of Biomechanics</i> , 2014, 47, 793-804.	2.1	112
129	Investigating the role of smooth muscle cells in large elastic arteries: A finite element analysis. <i>Journal of Theoretical Biology</i> , 2014, 358, 1-10.	1.7	26
130	Statistical approach for a continuum description of damage evolution in soft collagenous tissues. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2014, 278, 41-61.	6.6	37
131	An affine continuum mechanical model for cross-linked F-actin networks with compliant linker proteins. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2014, 38, 78-90.	3.1	35
132	A hyperelastic biphasic fibre-reinforced model of articular cartilage considering distributed collagen fibre orientations: continuum basis, computational aspects and applications. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2013, 16, 1344-1361.	1.6	76
133	Viscoelasticity of cross-linked actin networks: Experimental tests, mechanical modeling and finite-element analysis. <i>Acta Biomaterialia</i> , 2013, 9, 7343-7353.	8.3	29
134	Influence of myocardial fiber/sheet orientations on left ventricular mechanical contraction. <i>Mathematics and Mechanics of Solids</i> , 2013, 18, 592-606.	2.4	93
135	Gender Differences in Biomechanical Properties, Thrombus Age, Mass Fraction and Clinical Factors of Abdominal Aortic Aneurysms. <i>European Journal of Vascular and Endovascular Surgery</i> , 2013, 45, 364-372.	1.5	57
136	Elasticity of biopolymer filaments. <i>Acta Biomaterialia</i> , 2013, 9, 7320-7325.	8.3	15
137	Comparative Study of the Influence of Statistically Distributed Microscopic Quantities on the Damage in Collagenous Tissues. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2013, 13, 47-48.	0.2	0
138	A finite element-based constrained mixture implementation for arterial growth, remodeling, and adaptation: Theory and numerical verification. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2013, 29, 822-849.	2.1	74
139	Multiaxial mechanical properties and constitutive modeling of human adipose tissue: A basis for preoperative simulations in plastic and reconstructive surgery. <i>Acta Biomaterialia</i> , 2013, 9, 9036-9048.	8.3	88
140	Multiaxial mechanical response and constitutive modeling of esophageal tissues: Impact on esophageal tissue engineering. <i>Acta Biomaterialia</i> , 2013, 9, 9379-9391.	8.3	60
141	The role of elastin and collagen in the softening behavior of the human thoracic aortic media. <i>Journal of Biomechanics</i> , 2013, 46, 1859-1865.	2.1	75
142	A new approach to model cross-linked actin networks: Multi-scale continuum formulation and computational analysis. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2013, 22, 95-114.	3.1	49
143	Cardiovascular Tissue Damage: An Experimental and Computational Framework. , 2013, , 129-148.		0
144	An automated approach for three-dimensional quantification of fibrillar structures in optically cleared soft biological tissues. <i>Journal of the Royal Society Interface</i> , 2013, 10, 20120760.	3.4	97

#	ARTICLE	IF	CITATIONS
145	A hyperelastic biphasic fiber reinforced model for articular cartilage considering the distribution and orientation of collagen fibers. Proceedings in Applied Mathematics and Mechanics, 2013, 13, 55-56.	0.2	1
146	Modeling the dispersion in electromechanically coupled myocardium. International Journal for Numerical Methods in Biomedical Engineering, 2013, 29, 1267-1284.	2.1	64
147	Determination of the layer-specific distributed collagen fibre orientations in human thoracic and abdominal aortas and common iliac arteries. Journal of the Royal Society Interface, 2012, 9, 1275-1286.	3.4	288
148	A biphasic transverse isotropic FEM model for cartilage. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 105-106.	0.2	0
149	Arterial clamping: Finite element simulation and in vivo validation. Journal of the Mechanical Behavior of Biomedical Materials, 2012, 12, 107-118.	3.1	39
150	Layer-specific damage experiments and modeling of human thoracic and abdominal aortas with non-atherosclerotic intimal thickening. Journal of the Mechanical Behavior of Biomedical Materials, 2012, 12, 93-106.	3.1	186
151	Mechanics, mechanobiology, and modeling of human abdominal aorta and aneurysms. Journal of Biomechanics, 2012, 45, 805-814.	2.1	257
152	Remodeling of Intramural Thrombus and Collagen in an Ang-II Infusion ApoE <sup>-/-</sup> Model of Dissecting Aortic Aneurysms. Thrombosis Research, 2012, 130, e139-e146.	1.7	39
153	Quantitative assessment of collagen fibre orientations from two-dimensional images of soft biological tissues. Journal of the Royal Society Interface, 2012, 9, 3081-3093.	3.4	96
154	Constitutive framework for the modeling of damage in collagenous soft tissues with application to arterial walls. Computer Methods in Applied Mechanics and Engineering, 2012, 213-216, 139-151.	6.6	123
155	Experiments and mechanochemical modeling of smooth muscle contraction: Significance of filament overlap. Journal of Theoretical Biology, 2012, 297, 176-186.	1.7	72
156	Constrained mixture models as tools for testing competing hypotheses in arterial biomechanics: A brief survey. Mechanics Research Communications, 2012, 42, 126-133.	1.8	30
157	3D constitutive modeling of the biaxial mechanical response of intact and layer-dissected human carotid arteries. Journal of the Mechanical Behavior of Biomedical Materials, 2012, 5, 116-128.	3.1	95
158	Structural Analysis of Articular Cartilage Using Multiphoton Microscopy: Input for Biomechanical Modeling. IEEE Transactions on Medical Imaging, 2011, 30, 1635-1648.	8.9	47
159	Effects of Age on the Elastic Properties of the Intraluminal Thrombus and the Thrombus-covered Wall in Abdominal Aortic Aneurysms: Biaxial Extension Behaviour and Material Modelling. European Journal of Vascular and Endovascular Surgery, 2011, 42, 207-219.	1.5	109
160	On the Bending and Stretching Elasticity of Biopolymer Filaments. Journal of Elasticity, 2011, 104, 319-342.	1.9	32
161	Dissection Properties and Mechanical Strength of Tissue Components in Human Carotid Bifurcations. Annals of Biomedical Engineering, 2011, 39, 1703-1719.	2.5	49
162	A Coupled Model for the Left Ventricle Including Regional Differences in Structure. Proceedings in Applied Mathematics and Mechanics, 2011, 11, 85-86.	0.2	1

#	ARTICLE	IF	CITATIONS
163	Perspectives on biological growth and remodeling. <i>Journal of the Mechanics and Physics of Solids</i> , 2011, 59, 863-883.	4.8	371
164	A mechanochemical 3D continuum model for smooth muscle contraction under finite strains. <i>Journal of Theoretical Biology</i> , 2011, 268, 120-130.	1.7	73
165	A calcium-driven mechanochemical model for prediction of force generation in smooth muscle. <i>Biomechanics and Modeling in Mechanobiology</i> , 2010, 9, 749-762.	2.8	87
166	A Novel Simulation Strategy for Stent Insertion and Deployment in Curved Coronary Bifurcations: Comparison of Three Drug-Eluting Stents. <i>Annals of Biomedical Engineering</i> , 2010, 38, 88-99.	2.5	140
167	In Vitro Angioplasty of Atherosclerotic Human Femoral Arteries: Analysis of the Geometrical Changes in the Individual Tissues Using MRI and Image Processing. <i>Annals of Biomedical Engineering</i> , 2010, 38, 1276-1287.	2.5	5
168	DT-MRI Based Computation of Collagen Fiber Deformation in Human Articular Cartilage: A Feasibility Study. <i>Annals of Biomedical Engineering</i> , 2010, 38, 2447-2463.	2.5	57
169	On modelling and analysis of healthy and pathological human mitral valves: Two case studies. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2010, 3, 167-177.	3.1	106
170	Modeling the dispersion effects of contractile fibers in smooth muscles. <i>Journal of the Mechanics and Physics of Solids</i> , 2010, 58, 2065-2082.	4.8	25
171	Methods to compute 3D residual stress distributions in hyperelastic tubes with application to arterial walls. <i>International Journal of Engineering Science</i> , 2010, 48, 1066-1082.	5.0	16
172	Modelling the layer-specific three-dimensional residual stresses in arteries, with an application to the human aorta. <i>Journal of the Royal Society Interface</i> , 2010, 7, 787-799.	3.4	170
173	Biaxial mechanical properties of intact and layer-dissected human carotid arteries at physiological and suprphysiological loadings. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2010, 298, H898-H912.	3.2	146
174	Constitutive modelling of arteries. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2010, 466, 1551-1597.	2.1	381
175	On planar biaxial tests for anisotropic nonlinearly elastic solids. A continuum mechanical framework. <i>Mathematics and Mechanics of Solids</i> , 2009, 14, 474-489.	2.4	154
176	A Phenomenological Approach Toward Patient-Specific Computational Modeling of Articular Cartilage Including Collagen Fiber Tracking. <i>Journal of Biomechanical Engineering</i> , 2009, 131, 091006.	1.3	44
177	A Methodology to Analyze Changes in Lipid Core and Calcification Onto Fibrous Cap Vulnerability: The Human Atherosclerotic Carotid Bifurcation as an Illustratory Example. <i>Journal of Biomechanical Engineering</i> , 2009, 131, 121002.	1.3	50
178	A Computational Framework for Patient-Specific Analysis of Articular Cartilage Incorporating Structural Information from DT-MRI. <i>GAMM Mitteilungen</i> , 2009, 32, 157-177.	5.5	0
179	Experimental Studies and Numerical Analysis of the Inflation and Interaction of Vascular Balloon Catheter-Stent Systems. <i>Annals of Biomedical Engineering</i> , 2009, 37, 315-330.	2.5	58
180	A theoretical model for fibroblast-controlled growth of saccular cerebral aneurysms. <i>Journal of Theoretical Biology</i> , 2009, 257, 73-83.	1.7	56

#	ARTICLE	IF	CITATIONS
181	Simulation of Damage Hysteresis in Soft Biological Tissues. Proceedings in Applied Mathematics and Mechanics, 2009, 9, 155-156.	0.2	4
182	Modelling the mechanical response of elastin for arterial tissue. Journal of Biomechanics, 2009, 42, 1320-1325.	2.1	70
183	Constitutive modelling of passive myocardium: a structurally based framework for material characterization. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2009, 367, 3445-3475.	3.4	588
184	Foreword to the special issue on "Theoretical, experimental, and computational aspects of growth and remodeling". Biomechanics and Modeling in Mechanobiology, 2008, 7, 243-244.	2.8	0
185	A new constitutive model for multi-layered collagenous tissues. Journal of Biomechanics, 2008, 41, 2766-2771.	2.1	59
186	A methodology to study the morphologic changes in lesions during in vitro angioplasty using MRI and image processing. Medical Image Analysis, 2008, 12, 163-173.	11.6	5
187	Smooth muscle contraction: Mechanochemical formulation for homogeneous finite strains. Progress in Biophysics and Molecular Biology, 2008, 96, 465-481.	2.9	85
188	Dissection Properties of the Human Aortic Media: An Experimental Study. Journal of Biomechanical Engineering, 2008, 130, 021007.	1.3	143
189	Mechanical Stresses in Abdominal Aortic Aneurysms: Influence of Diameter, Asymmetry, and Material Anisotropy. Journal of Biomechanical Engineering, 2008, 130, 021023.	1.3	136
190	Modeling of Saccular Aneurysm Growth in a Human Middle Cerebral Artery. Journal of Biomechanical Engineering, 2008, 130, 051012.	1.3	37
191	Three-Dimensional Modeling and Computational Analysis of the Human Cornea Considering Distributed Collagen Fibril Orientations. Journal of Biomechanical Engineering, 2008, 130, 061006.	1.3	187
192	Estimation of the distributions of anisotropic, elastic properties and wall stresses of saccular cerebral aneurysms by inverse analysis. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2008, 464, 807-825.	2.1	40
193	Collagen in Arterial Walls: Biomechanical Aspects. , 2008, , 285-324.		38
194	Computational stress-deformation analysis of arterial walls including high-pressure response. International Journal of Cardiology, 2007, 116, 78-85.	1.7	95
195	A constitutive model for fibrous tissues considering collagen fiber crimp. International Journal of Non-Linear Mechanics, 2007, 42, 391-402.	2.6	77
196	A model for saccular cerebral aneurysm growth by collagen fibre remodelling. Journal of Theoretical Biology, 2007, 247, 775-787.	1.7	92
197	A continuum model for remodeling in living structures. Journal of Materials Science, 2007, 42, 8811-8823.	3.7	88
198	Layer-Specific 3D Residual Deformations of Human Aortas with Non-Atherosclerotic Intimal Thickening. Annals of Biomedical Engineering, 2007, 35, 530-545.	2.5	192

#	ARTICLE	IF	CITATIONS
199	Modeling Plaque Fissuring and Dissection during Balloon Angioplasty Intervention. <i>Annals of Biomedical Engineering</i> , 2007, 35, 711-723.	2.5	77
200	A Numerical Model to Study the Interaction of Vascular Stents with Human Atherosclerotic Lesions. <i>Annals of Biomedical Engineering</i> , 2007, 35, 1857-1869.	2.5	64
201	Finite Element Modeling of Balloon Angioplasty by Considering Overstretch of Remnant Non-diseased Tissues in Lesions. <i>Computational Mechanics</i> , 2007, 40, 47-60.	4.0	57
202	A procedure to simulate coronary artery bypass graft surgery. <i>Medical and Biological Engineering and Computing</i> , 2007, 45, 819-827.	2.8	44
203	Hyperelastic modelling of arterial layers with distributed collagen fibre orientations. <i>Journal of the Royal Society Interface</i> , 2006, 3, 15-35.	3.4	1,828
204	A polyconvex framework for soft biological tissues. Adjustment to experimental data. <i>International Journal of Solids and Structures</i> , 2006, 43, 6052-6070.	2.7	270
205	3D Crack propagation in unreinforced concrete.. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2006, 195, 5198-5219.	6.6	110
206	Modeling the propagation of arterial dissection. <i>European Journal of Mechanics, A/Solids</i> , 2006, 25, 617-633.	3.7	102
207	Brain tissue deforms similarly to filled elastomers and follows consolidation theory. <i>Journal of the Mechanics and Physics of Solids</i> , 2006, 54, 2592-2620.	4.8	315
208	Determination of material models for arterial walls from uniaxial extension tests and histological structure. <i>Journal of Theoretical Biology</i> , 2006, 238, 290-302.	1.7	276
209	3-D reconstruction of tissue components for atherosclerotic human arteries using ex vivo high-resolution MRI. <i>IEEE Transactions on Medical Imaging</i> , 2006, 25, 345-357.	8.9	26
210	An automatic nonrigid registration for stained histological sections. <i>IEEE Transactions on Image Processing</i> , 2005, 14, 475-486.	9.8	31
211	Changes in the Mechanical Environment of Stenotic Arteries During Interaction With Stents: Computational Assessment of Parametric Stent Designs. <i>Journal of Biomechanical Engineering</i> , 2005, 127, 166-180.	1.3	186
212	Determination of layer-specific mechanical properties of human coronary arteries with nonatherosclerotic intimal thickening and related constitutive modeling. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2005, 289, H2048-H2058.	3.2	775
213	Anisotropic Mechanical Properties of Tissue Components in Human Atherosclerotic Plaques. <i>Journal of Biomechanical Engineering</i> , 2004, 126, 657-665.	1.3	330
214	Comparison of a Multi-Layer Structural Model for Arterial Walls With a Fung-Type Model, and Issues of Material Stability. <i>Journal of Biomechanical Engineering</i> , 2004, 126, 264-275.	1.3	224
215	ASSESSMENT OF PLAQUE STABILITY BASED ON HIGH-RESOLUTION MAGNETIC RESONANCE IMAGING OF HUMAN ATHEROSCLEROTIC LESIONS AND COMPUTATIONAL MECHANICAL ANALYSIS. , 2004, , 101-115.		0
216	Passive Biaxial Mechanical Response of Aged Human Iliac Arteries. <i>Journal of Biomechanical Engineering</i> , 2003, 125, 395-406.	1.3	153

#	ARTICLE	IF	CITATIONS
217	Structural and Numerical Models for the (Visco)elastic Response of Arterial Walls with Residual Stresses. , 2003, , 109-184.		22
218	Mechanics of the human femoral adventitia including the high-pressure response. American Journal of Physiology - Heart and Circulatory Physiology, 2002, 282, H2427-H2440.	3.2	121
219	A Three-dimensional Finite Element Model for Arterial Clamping. Journal of Biomechanical Engineering, 2002, 124, 355-363.	1.3	69
220	A Layer-Specific Three-Dimensional Model for the Simulation of Balloon Angioplasty using Magnetic Resonance Imaging and Mechanical Testing. Annals of Biomedical Engineering, 2002, 30, 753-767.	2.5	212
221	A structural model for the viscoelastic behavior of arterial walls: Continuum formulation and finite element analysis. European Journal of Mechanics, A/Solids, 2002, 21, 441-463.	3.7	367
222	An Anisotropic Model for Annulus Tissue and Enhanced Finite Element Analyses of Intact Lumbar Disc Bodies. Computer Methods in Biomechanics and Biomedical Engineering, 2001, 4, 209-229.	1.6	172
223	A viscoelastic model for fiber-reinforced composites at finite strains: Continuum basis, computational aspects and applications. Computer Methods in Applied Mechanics and Engineering, 2001, 190, 4379-4403.	6.6	390
224	A New Constitutive Framework for Arterial Wall Mechanics and a Comparative Study of Material Models. Journal of Elasticity, 2000, 61, 1-48.	1.9	2,105
225	Biomechanical behavior of the arterial wall and its numerical characterization. Computers in Biology and Medicine, 1998, 28, 377-392.	7.0	185
226	A new viscoelastic constitutive model for continuous media at finite thermomechanical changes. International Journal of Solids and Structures, 1996, 33, 3019-3034.	2.7	210
227	Assessment of plaque stability by means of high-resolution MRI and finite element analyses of local stresses and strains. , 0, , .		1
228	Modeling and Characterizing Collagen Fiber Bundles. , 0, , .		2