Gerhard Sommer

List of Publications by Year
in descending order

32 papers	2,807 citations	331259 21 h-index	395343 33 g-index
33 all docs	33 docs citations	33 times ranked	2334 citing authors

#	Article	IF	Citations
1	Determination of layer-specific mechanical properties of human coronary arteries with nonatherosclerotic intimal thickening and related constitutive modeling. American Journal of Physiology - Heart and Circulatory Physiology, 2005, 289, H2048-H2058.	1.5	775
2	Anisotropic Mechanical Properties of Tissue Components in Human Atherosclerotic Plaques. Journal of Biomechanical Engineering, 2004, 126, 657-665.	0.6	330
3	Biomechanical properties and microstructure of human ventricular myocardium. Acta Biomaterialia, 2015, 24, 172-192.	4.1	217
4	Layer-Specific 3D Residual Deformations of Human Aortas with Non-Atherosclerotic Intimal Thickening. Annals of Biomedical Engineering, 2007, 35, 530-545.	1.3	192
5	Biaxial mechanical properties of intact and layer-dissected human carotid arteries at physiological and supraphysiological loadings. American Journal of Physiology - Heart and Circulatory Physiology, 2010, 298, H898-H912.	1.5	146
6	Dissection Properties of the Human Aortic Media: An Experimental Study. Journal of Biomechanical Engineering, 2008, 130, 021007.	0.6	143
7	Microstructure and mechanics of healthy and aneurysmatic abdominal aortas: experimental analysis and modelling. Journal of the Royal Society Interface, 2016, 13, 20160620.	1.5	137
8	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.	1.5	95
9	Multiaxial mechanical properties and constitutive modeling of human adipose tissue: A basis for preoperative simulations in plastic and reconstructive surgery. Acta Biomaterialia, 2013, 9, 9036-9048.	4.1	88
10	Mechanical strength of aneurysmatic and dissected human thoracic aortas at different shear loading modes. Journal of Biomechanics, 2016, 49, 2374-2382.	0.9	75
11	Quantification of Shear Deformations and Corresponding Stresses in the Biaxially Tested Human Myocardium. Annals of Biomedical Engineering, 2015, 43, 2334-2348.	1.3	61
12	Multiaxial mechanical response and constitutive modeling of esophageal tissues: Impact on esophageal tissue engineering. Acta Biomaterialia, 2013, 9, 9379-9391.	4.1	60
13	Selective enzymatic removal of elastin and collagen from human abdominal aortas: Uniaxial mechanical response and constitutive modeling. Acta Biomaterialia, 2015, 17, 125-136.	4.1	60
14	An orthotropic viscoelastic model for the passive myocardium: continuum basis and numerical treatment. Computer Methods in Biomechanics and Biomedical Engineering, 2016, 19, 1647-1664.	0.9	59
15	Towards microstructure-informed material models for human brain tissue. Acta Biomaterialia, 2020, 104, 53-65.	4.1	57
16	Dissection Properties and Mechanical Strength of Tissue Components in Human Carotid Bifurcations. Annals of Biomedical Engineering, 2011, 39, 1703-1719.	1.3	49
17	Arterial clamping: Finite element simulation and in vivo validation. Journal of the Mechanical Behavior of Biomedical Materials, 2012, 12, 107-118.	1.5	39
18	Anisotropic residual stresses in arteries. Journal of the Royal Society Interface, 2019, 16, 20190029.	1.5	36

#	Article	IF	Citations
19	An efficient and accurate method for modeling nonlinear fractional viscoelastic biomaterials. Computer Methods in Applied Mechanics and Engineering, 2020, 362, 112834.	3.4	29
20	Constitutive modeling using structural information on collagen fiber direction and dispersion in human superficial femoral artery specimens of different ages. Acta Biomaterialia, 2021, 121, 461-474.	4.1	27
21	Failure properties and microstructure of healthy and aneurysmatic human thoracic aortas subjected to uniaxial extension with a focus on the media. Acta Biomaterialia, 2019, 99, 443-456.	4.1	26
22	A viscoelastic model for human myocardium. Acta Biomaterialia, 2021, 135, 441-457.	4.1	23
23	Mechanical response of human subclavian and iliac arteries to extension, inflation and torsion. Acta Biomaterialia, 2018, 75, 235-252.	4.1	20
24	The effects of viscoelasticity on residual strain in aortic soft tissues. Acta Biomaterialia, 2022, 140, 398-411.	4.1	13
25	Quantifying stent-induced damage in coronary arteries by investigating mechanical and structural alterations. Acta Biomaterialia, 2020, 116, 285-301.	4.1	10
26	Esophagus stretch tests: Biomechanics for tissue engineering and possible implications on the outcome of esophageal atresia repairs performed under excessive tension. Esophagus, 2021, 18, 346-352.	1.0	8
27	Mechanical characterization of porcine liver properties for computational simulation of indentation on cancerous tissue. Mathematical Medicine and Biology, 2020, 37, 469-490.	0.8	7
28	An ultrastructural 3D reconstruction method for observing the arrangement of collagen fibrils and proteoglycans in the human aortic wall under mechanical load. Acta Biomaterialia, 2022, 141, 300-314.	4.1	7
29	An active approach of pressure waveform matching for stressâ€based testing of arteries. Artificial Organs, 2021, 45, 1562-1575.	1.0	6
30	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.	1.3	5
31	Experimental and mathematical characterization of coronary polyamide-12 balloon catheter membranes. PLoS ONE, 2020, 15, e0234340.	1.1	4
32	2.3 BIOMECHANICAL AND STRUCTURAL QUANTIFICATION OF VASCULAR DAMAGE: A UNIQUE INVESTIGATION OF STENT IMPLANTATION. Artery Research, 2017, 20, 50.	0.3	2