Thomas Franz

List of Publications by Year
in descending order

73 papers	1,691 citations	304743 22 h-index	302126 39 g-index
86 all docs	86 docs citations	86 times ranked	1998 citing authors

#	Article	IF	Citations
1	Off-the-shelf human decellularized tissue-engineered heart valves in a non-human primate model. Biomaterials, 2013, 34, 7269-7280.	11.4	173
2	Mechanical behaviour of glass and carbon fibre reinforced composites at varying strain rates. Composite Structures, 2004, 63, 455-467.	5.8	158
3	Injectable living marrow stromal cell-based autologous tissue engineered heart valves: first experiences with a one-step intervention in primates. European Heart Journal, 2011, 32, 2830-2840.	2.2	124
4	Modification, crosslinking and reactive electrospinning of a thermoplastic medical polyurethane for vascular graft applications. Acta Biomaterialia, 2010, 6, 2434-2447.	8.3	82
5	Constrictive external nitinol meshes inhibit vein graft intimal hyperplasia in nonhuman primates. Journal of Thoracic and Cardiovascular Surgery, 2008, 136, 717-725.	0.8	63
6	Aortic valve leaflet mechanical properties facilitate diastolic valve function. Computer Methods in Biomechanics and Biomedical Engineering, 2010, 13, 225-234.	1.6	57
7	The beneficial effects of deferred delivery on the efficiency of hydrogel therapy post myocardial infarction. Biomaterials, 2012, 33, 2060-2066.	11.4	56
8	Construction and Validation of Subject-Specific Biventricular Finite-Element Models of Healthy and Failing Swine Hearts From High-Resolution DT-MRI. Frontiers in Physiology, 2018, 9, 539.	2.8	56
9	A constitutive model for the warp-weft coupled non-linear behavior ofÂknittedÂbiomedical textiles. Biomaterials, 2010, 31, 8484-8493.	11.4	55
10	The effect of laminate stacking sequence of CFRP filament wound tubes subjected to projectile impact. Composite Structures, 2002, 58, 259-270.	5.8	49
11	Experimental investigation into the response of chopped-strand mat glassfibre laminates to blast loading. International Journal of Impact Engineering, 2002, 27, 639-667.	5.0	47
12	Quasi-Newton methods for implicit black-box FSI coupling. Computer Methods in Applied Mechanics and Engineering, 2014, 279, 113-132.	6.6	43
13	Investigating the Role of Interventricular Interdependence in Development of Right Heart Dysfunction During LVAD Support: A Patient-Specific Methods-Based Approach. Frontiers in Physiology, 2018, 9, 520.	2.8	40
14	Cell specific ingrowth hydrogels. Biomaterials, 2013, 34, 6797-6803.	11.4	36
15	Dimensional analysis of human saphenous vein grafts: Implications for external mesh support. Journal of Thoracic and Cardiovascular Surgery, 2009, 137, 1101-1108.	0.8	33
16	Characterisation of the mechanical properties of infarcted myocardium in the rat under biaxial tension and uniaxial compression. Journal of the Mechanical Behavior of Biomedical Materials, 2016, 63, 252-264.	3.1	33
17	Dual electrospinning with sacrificial fibers for engineered porosity and enhancement of tissue ingrowth. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2017, 105, 1559-1572.	3.4	33
18	Partial LVAD Restores Ventricular Outputs and Normalizes LV but not RV Stress Distributions in the Acutely Failing Heart in Silico. International Journal of Artificial Organs, 2016, 39, 421-430.	1.4	32

#	Article	IF	Citations
19	Personalised computational cardiology: Patient-specific modelling in cardiac mechanics and biomaterial injection therapies for myocardial infarction. Heart Failure Reviews, 2016, 21, 815-826.	3.9	31
20	Knitted nitinol represents a new generation of constrictive external vein graft meshes. Journal of Vascular Surgery, 2011, 54, 1439-1450.	1.1	30
21	The effect of hydrogel injection on cardiac function and myocardial mechanics in a computational post-infarction model. Computer Methods in Biomechanics and Biomedical Engineering, 2013, 16, 1185-1195.	1.6	27
22	Utilization of shape memory in external vein-graft meshes allows extreme diameter constriction for suppressing intimal hyperplasia: A non-human primate study. Journal of Vascular Surgery, 2009, 49, 1532-1542.	1.1	25
23	Protective constriction of coronary vein grafts with knitted nitinol. European Journal of Cardio-thoracic Surgery, 2013, 44, 64-71.	1.4	24
24	Intra-myocardial alginate hydrogel injection acts as a left ventricular mid-wall constraint in swine. Acta Biomaterialia, 2020, 111, 170-180.	8.3	22
25	A computational study of knitted Nitinol meshes for their prospective use as external vein reinforcement. Journal of Biomechanics, 2008, 41, 1302-1309.	2.1	20
26	Outcomes of myocardial infarction hydrogel injection therapy in the human left ventricle dependent on injectate distribution. International Journal for Numerical Methods in Biomedical Engineering, 2013, 29, 870-884.	2.1	20
27	Kinematic boundary conditions substantially impact in silico ventricular function. International Journal for Numerical Methods in Biomedical Engineering, 2019, 35, e3151.	2.1	19
28	Studying the influence of hydrogel injections into the infarcted left ventricle using the elementâ€free Galerkin method. International Journal for Numerical Methods in Biomedical Engineering, 2014, 30, 416-429.	2.1	17
29	An evaluation of quasi-Newton methods for application to FSI problems involving free surface flow and solid body contact. Computers and Structures, 2016, 173, 71-83.	4.4	17
30	Degradationâ€induced changes of mechanical properties of an electroâ€spun polyesterâ€urethane scaffold for soft tissue regeneration. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2011, 99B, 359-368.	3.4	16
31	Long-Term Left Ventricular Remodelling in Rat Model of Nonreperfused Myocardial Infarction: Sequential MR Imaging Using a 3T Clinical Scanner. Journal of Biomedicine and Biotechnology, 2012, 2012, 1-10.	3.0	16
32	Extending the robustness and efficiency of artificial compressibility for partitioned fluidâ€“structure interactions. Computer Methods in Applied Mechanics and Engineering, 2015, 283, 1278-1295.	6.6	16
33	A validated patient-specific FSI model for vascular access in haemodialysis. Biomechanics and Modeling in Mechanobiology, 2018, 17, 479-497.	2.8	16
34	Remodeling leads to distinctly more intimal hyperplasia in coronary than in infrainguinal vein grafts. Journal of Vascular Surgery, 2012, 55, 1734-1741.	1.1	15
35	The anisotropic mechanical behaviour of electro-spun biodegradable polymer scaffolds: Experimental characterisation and constitutive formulation. Journal of the Mechanical Behavior of Biomedical Materials, 2016, 53, 21-39.	3.1	15
36	The Use of Finite Element Methods and Genetic Algorithms in Search of an Optimal Fabric Reinforced Porous Graft System. Annals of Biomedical Engineering, 2009, 37, 2266-2287.	2.5	14

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37	Stress State and Strain Rate Dependence of the Human Placenta. Annals of Biomedical Engineering, 2012, 40, 2255-2265.	2.5	14
38	A Computational Study of Structural Designs for a Small-Diameter Composite Vascular Graft Promoting Tissue Regeneration. Cardiovascular Engineering and Technology, 2010, 1, 269-281.	1.6	12
39	Micro-structurally detailed model of a therapeutic hydrogel injectate in a rat biventricular cardiac geometry for computational simulations. Computer Methods in Biomechanics and Biomedical Engineering, 2015, 18, 325-331.	1.6	10
40	Excessive volume of hydrogel injectates may compromise the efficacy for the treatment of acute myocardial infarction. International Journal for Numerical Methods in Biomedical Engineering, 2016, 32, e02772.	2.1	10
41	A Numerical Tool for the Coupled Mechanical Assessment of Anastomoses of PTFE Arterio-venous Access Grafts. Cardiovascular Engineering and Technology, 2011, 2, 160-172.	1.6	9
42	Computational predictions of improved of wall mechanics and function of the infarcted left ventricle at early and late remodelling stages: comparison of layered and bulk hydrogel injectates. Advances in Biomechanics and Applications, 2014, 1, 41-55.	0.2	9
43	The in vivo assessment of mechanical loadings on pectoral pacemaker implants. Journal of Biomechanics, 2010, 43, 1717-1722.	2.1	8
44	Tailored sizes of constrictive external vein meshes for coronary artery bypass surgery. Biomaterials, 2010, 31, 9301-9309.	11.4	8
45	Photoelastic study of the mechanic behaviour of orthotropic composite plates subjected to impact. Composite Structures, 2001, 54, 169-178.	5.8	7
46	Cellular mechanosensitivity to substrate stiffness decreases with increasing dissimilarity to cell stiffness. Biomechanics and Modeling in Mechanobiology, 2017, 16, 2063-2075.	2.8	7
47	Effect of intra-myocardial Algisyl-LVRâ„¢ injectates on fibre structure in porcine heart failure. Journal of the Mechanical Behavior of Biomedical Materials, 2018, 87, 172-179.	3.1	6
48	A simple fluidâ€“structure coupling algorithm for the study of the anastomotic mechanics of vascular grafts. Computer Methods in Biomechanics and Biomedical Engineering, 2010, 13, 773-781.	1.6	5
49	Endothelial cells on an aged subendothelial matrix display heterogeneous strain profiles in silico. Biomechanics and Modeling in Mechanobiology, 2018, 17, 1405-1414.	2.8	5
50	Cell focal adhesion clustering leads to decreased and homogenized basal strains. International Journal for Numerical Methods in Biomedical Engineering, 2019, 35, e3260.	2.1	5
51	Cardiovascular and Cardiac Therapeutic Devices. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2014, , .	1.0	4
52	Analytical modeling of the mechanics of early invasion of a merozoite into a human erythrocyte. Journal of Biological Physics, 2017, 43, 471-479.	1.5	4
53	Electrospun polyester-urethane scaffold preserves mechanical properties and exhibits strain stiffening during in situ tissue ingrowth and degradation. SN Applied Sciences, 2020, 2, 1.	2.9	4
54	A mathematical method for constraint-based cluster analysis towards optimized constrictive diameter smoothing of saphenous vein grafts. Medical and Biological Engineering and Computing, 2010, 48, 519-529.	2.8	3

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55	Patient-specific prediction of intrinsic mechanical loadings on sub-muscular pectoral pacemaker implants based on an inter-species transfer function. Journal of Biomechanics, 2011, 44, 2525-2531.	2.1	3
56	Infarcted rat myocardium: Data from biaxial tensile and uniaxial compressive testing and analysis of collagen fibre orientation. Data in Brief, 2016, 8, 1338-1343.	1.0	3
57	Cytoskeletal tubulin competes with actin to increase deformability of metastatic melanoma cells. Experimental Cell Research, 2020, 394, 112154.	2.6	3
58	Tissue Ingrowth Markedly Reduces Mechanical Anisotropy and Stiffness in Fibre Direction of Highly Aligned Electrospun Polyurethane Scaffolds. Cardiovascular Engineering and Technology, 2020, 11, 456-468.	1.6	3
59	Customized stentâ€grafts for endovascular aneurysm repair with challenging necks: A numerical proof of concept. International Journal for Numerical Methods in Biomedical Engineering, 2020, 36, e3316.	2.1	3
60	Mechanical Loadings on Pectoral Pacemaker Implants: Correlation of In-line and Transverse Force of the Pectoralis major. Annals of Biomedical Engineering, 2010, 38, 3338-3346.	2.5	2
61	Delivery Modes for Cardiac Stem Cell Therapy. Pancreatic Islet Biology, 2016, , 165-190.	0.3	2
62	Untersuchung der StoÄŸwellenausbreitung in Faserverbundwerkstoffen mittels dynamischer Spannungsoptik und holografischer Interferometrie. Forschung Im Ingenieurwesen/Engineering Research, 1996, 62, 195-213.	1.6	1
63	Numerical studies of problems in biophysics, biomechanics and mechanobiology. International Journal for Numerical Methods in Biomedical Engineering, 2012, 28, 1-2.	2.1	1
64	A Preliminary Computational Investigation Into the Flow of PEG in Rat Myocardial Tissue for Regenerative Therapy. Frontiers in Cardiovascular Medicine, 2019, 6, 104.	2.4	1
65	Determination of Cross-Directional and Cross-Wall Variations of Passive Biaxial Mechanical Properties of Rat Myocardia. Processes, 2022, 10, 629.	2.8	1
66	Computational and numerical modelling in neuromechanics andâ€‰biomechanics. International Journal for Numerical Methods in Biomedical Engineering, 2012, 28, 1001-1002.	2.1	0
67	Development of a Fabric-Reinforced Porous Graft for Vascular Tissue Engineering Using Finite Element Methods and Genetic Algorithms. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2013, , 29-61.	1.0	0
68	In Vivo Mechanical Loading Conditions of Pectorally Implanted Cardiac Pacemakers. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2013, , 207.	1.0	0
69	Constitutive Effects of Hydrolytic Degradation in Electro-Spun Polyester-Urethane Scaffolds for Soft Tissue Regeneration. Computational Methods in Applied Sciences (Springer), 2014, , 49-67.	0.3	0
70	Computational mechanics and electroâ€mechanics in cardiovascular physiology and disease. International Journal for Numerical Methods in Biomedical Engineering, 2014, 30, 603-604.	2.1	0
71	Does Cell Mechanics in Adipogenesis Offer New Keys for the Prevention and Management of Obesity?. Biophysical Journal, 2014, 106, 1231-1232.	0.5	0
72	In silico stress fibre content affects peak strain in cytoplasm and nucleus but not in the membrane for uniaxial substrate stretch. Medical and Biological Engineering and Computing, 2021, 59, 1933-1944.	2.8	0

#	ARTICLE	IF	CITATIONS
73	A Computational Study of the Injection Therapy for Myocardial Infarction during the Necrotic Stage. , 2013, , .		0