Caitriona Lally

List of Publications by Year
in descending order

63 papers	2,086 citations	304368 22 h-index	243296 44 g-index
67 all docs	67 docs citations	67 times ranked	1947 citing authors

#	Article	IF	Citations
1	Cardiovascular stent design and vessel stresses: a finite element analysis. Journal of Biomechanics, 2005, 38, 1574-1581.	0.9	342
2	Elastic Behavior of Porcine Coronary Artery Tissue Under Uniaxial and Equibiaxial Tension. Annals of Biomedical Engineering, 2004, 32, 1355-1364.	1.3	153
3	Analysis of Prolapse in Cardiovascular Stents: A Constitutive Equation for Vascular Tissue and Finite-Element Modelling. Journal of Biomechanical Engineering, 2003, 125, 692-699.	0.6	152
4	The influence of plaque composition on underlying arterial wall stress during stent expansion: The case for lesion-specific stents. Medical Engineering and Physics, 2009, 31, 428-433.	0.8	144
5	Determination of the influence of stent strut thickness using the finite element method: implications for vascular injury and in-stent restenosis. Medical and Biological Engineering and Computing, 2009, 47, 385-393.	1.6	117
6	Simulation of a balloon expandable stent in a realistic coronary arteryâ€"Determination of the optimum modelling strategy. Journal of Biomechanics, 2010, 43, 2126-2132.	0.9	110
7	Tensile and compressive properties of fresh human carotid atherosclerotic plaques. Journal of Biomechanics, 2009, 42, 2760-2767.	0.9	89
8	An anisotropic inelastic constitutive model to describe stress softening and permanent deformation in arterial tissue. Journal of the Mechanical Behavior of Biomedical Materials, 2012, 12, 9-19.	1.5	60
9	A multiscale mechanobiological modelling framework using agent-based models and finite element analysis: application to vascular tissue engineering. Biomechanics and Modeling in Mechanobiology, 2012, 11, 363-377.	1.4	53
10	A multi-scale mechanobiological model of in-stent restenosis: deciphering the role of matrix metalloproteinase and extracellular matrix changes. Computer Methods in Biomechanics and Biomedical Engineering, 2014, 17, 813-828.	0.9	47
11	Glycogen synthase kinase 3 beta positively regulates Notch signaling in vascular smooth muscle cells: role in cell proliferation and survival. Basic Research in Cardiology, 2011, 106, 773-785.	2.5	45
12	Inelasticity of Human Carotid Atherosclerotic Plaque. Annals of Biomedical Engineering, 2011, 39, 2445-2455.	1.3	45
13	Integrating finite element modelling and 3D printing to engineer biomimetic polymeric scaffolds for tissue engineering. Connective Tissue Research, 2020, 61, 174-189.	1.1	44
14	Collagen fibre orientation and dispersion govern ultimate tensile strength, stiffness and the fatigue performance of bovine pericardium. Journal of the Mechanical Behavior of Biomedical Materials, 2019, 90, 54-60.	1.5	41
15	An investigation of damage mechanisms in mechanobiological models of in-stent restenosis. Journal of Computational Science, 2018, 24, 132-142.	1.5	40
16	Collagen fibre characterisation in arterial tissue under load using SALS. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 75, 359-368.	1.5	39
17	Site specific inelasticity of arterial tissue. Journal of Biomechanics, 2012, 45, 1393-1399.	0.9	37
18	Investigation of a small-diameter decellularised artery as a potential scaffold for vascular tissue engineering; biomechanical evaluation and preliminary cell seeding. Journal of the Mechanical Behavior of Biomedical Materials, 2012, 14, 130-142.	1.5	36

#	Article	IF	Citations
19	Finite element modelling of diseased carotid bifurcations generated from in vivo computerised tomographic angiography. Computers in Biology and Medicine, 2010, 40, 419-429.	3.9	35
20	Fibre orientation of fresh and frozen porcine aorta determined non-invasively using diffusion tensor imaging. Medical Engineering and Physics, 2013, 35, 765-776.	0.8	30
21	A strain-mediated corrosion model for bioabsorbable metallic stents. Acta Biomaterialia, 2017, 55, 505-517.	4.1	27
22	Novel injectable gallium-based self-setting glass-alginate hydrogel composite for cardiovascular tissue engineering. Carbohydrate Polymers, 2019, 217, 152-159.	5.1	25
23	A method to develop mock arteries suitable for cell seeding and in-vitro cell culture experiments. Journal of the Mechanical Behavior of Biomedical Materials, 2010, 3, 470-477.	1.5	23
24	An investigation into the role of different constituents in damage accumulation in arterial tissue and constitutive model development. Biomechanics and Modeling in Mechanobiology, 2018, 17, 1757-1769.	1.4	23
25	Prediction of fibre architecture and adaptation in diseased carotid bifurcations. Biomechanics and Modeling in Mechanobiology, 2011, 10, 831-843.	1.4	22
26	An investigation into the critical role of fibre orientation in the ultimate tensile strength and stiffness of human carotid plaque caps. Acta Biomaterialia, 2021, 124, 291-300.	4.1	22
27	A remodelling metric for angular fibre distributions and its application to diseased carotid bifurcations. Biomechanics and Modeling in Mechanobiology, 2012, 11, 869-882.	1.4	18
28	Plastic strains during stent deployment have a critical influence on the rate of corrosion in absorbable magnesium stents. Medical and Biological Engineering and Computing, 2017, 55, 1261-1275.	1.6	18
29	Imaging Arterial Fibres Using Diffusion Tensor Imagingâ€"Feasibility Study and Preliminary Results. Eurasip Journal on Advances in Signal Processing, 2010, 2010, .	1.0	17
30	Imaging and finite element analysis: A methodology for non-invasive characterization of aortic tissue. Medical Engineering and Physics, 2015, 37, 48-54.	0.8	17
31	Quantifying the ultrastructure of carotid arteries using high-resolution micro-diffusion tensor imagingâ€"comparison of intact versus open cut tissue. Physics in Medicine and Biology, 2017, 62, 8850-8868.	1.6	17
32	Strain mediated enzymatic degradation of arterial tissue: Insights into the role of the non-collagenous tissue matrix and collagen crimp. Acta Biomaterialia, 2018, 77, 301-310.	4.1	17
33	Nonâ€linear microscopy of smooth muscle cells in artificial extracellular matrices made of cellulose. Journal of Biophotonics, 2012, 5, 404-414.	1.1	16
34	Cyclic strain amplitude dictates the growth response of vascular smooth muscle cells in vitro: role in in-stent restenosis and inhibition with a sirolimus drug-eluting stent. Biomechanics and Modeling in Mechanobiology, 2013, 12, 671-683.	1.4	15
35	Surface Modification of Absorbable Magnesium Stents by Reactive Ion Etching. Plasma Chemistry and Plasma Processing, 2013, 33, 1137-1152.	1.1	14
36	Collagen fibre-mediated mechanical damage increases calcification of bovine pericardium for use in bioprosthetic heart valves. Acta Biomaterialia, 2021, 128, 384-392.	4.1	14

#	Article	IF	Citations
37	Compliance properties of a composite electrospun fibre â€“ hydrogel blood vessel scaffold. Materials Letters, 2016, 178, 296-299.	1.3	13
38	Optimisation of a novel glass-alginate hydrogel for the treatment of intracranial aneurysms. Carbohydrate Polymers, 2017, 176, 227-235.	5.1	12
39	Bovine Pericardium of High Fibre Dispersion Has High Fatigue Life and Increased Collagen Content; Potentially an Untapped Source of Heart Valve Leaflet Tissue. Annals of Biomedical Engineering, 2021, 49, 1022-1032.	1.3	12
40	A Biomechanical and Microstructural Analysis of Bovine and Porcine Pericardium for Use in Bioprosthetic Heart Valves. Structural Heart, 0, , 1-11.	0.2	9
41	The use of small angle light scattering in assessing strain induced collagen degradation in arterial tissue ex vivo. Journal of Biomechanics, 2018, 81, 155-160.	0.9	8
42	Mechanical Characterization and Modeling of the Porcine Cerebral Meninges. Frontiers in Bioengineering and Biotechnology, 2020, 8, 801.	2.0	8
43	Pressure-induced collagen degradation in arterial tissue as a potential mechanism for degenerative arterial disease progression. Journal of the Mechanical Behavior of Biomedical Materials, 2020, 109, 103771.	1.5	7
44	In Vitro Corrosion and Biological Assessment of Bioabsorbable WE43 Mg Alloy Specimens. Journal of Manufacturing and Materials Processing, 2017, 1, 8.	1.0	6
45	Evaluation of a Validation Method for MR Imaging-Based Motion Tracking Using Image Simulation. Eurasip Journal on Advances in Signal Processing, 2009, 2010, .	1.0	5
46	Resident multipotent vascular stem cells exhibit amplitude dependent strain avoidance similar to that of vascular smooth muscle cells. Biochemical and Biophysical Research Communications, 2020, 521, 762-768.	1.0	5
47	Quantitative susceptibility mapping of carotid arterial tissue ex vivo: Assessing sensitivity to vessel microstructural composition. Magnetic Resonance in Medicine, 2021, 86, 2512-2527.	1.9	5
48	Surface modification of a novel glass to optimise strength and deliverability of an injectable alginate composite. Journal of Materials Science, 2017, 52, 13700-13710.	1.7	4
49	Assessment of mechanical indicators of carotid plaque vulnerability: Geometrical curvature metric, plaque stresses and damage in tissue fibres. Journal of the Mechanical Behavior of Biomedical Materials, 2020, 103, 103573.	1.5	4
50	Exploring arterial tissue microstructural organization using non-Gaussian diffusion magnetic resonance schemes. Scientific Reports, 2021, 11, 22247.	1.6	4
51	Development of a Collagen Fibre Remodelling Rupture Risk Metric for Potentially Vulnerable Carotid Artery Atherosclerotic Plaques. Frontiers in Physiology, 2021, 12, 718470.	1.3	3
52	Finite element modelling of medical devices. Medical Engineering and Physics, 2009, 31, 419.	0.8	2
53	Hemodynamic Control of Vascular Smooth Muscle Function. , 2012, , 1231-1242.		2
54	Multiscale Modeling in Vascular Disease and Tissue Engineering. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2013, , 241-258.	0.7	2

#	Article	IF	Citations
55	An in-silico Investigation Into the Role of Strain and Structure on Vascular Smooth Muscle Cell Growth. Frontiers in Bioengineering and Biotechnology, 2021, 9, 641794.	2.0	2
56	Investigation into early stage fatigue-damage accumulation in glutaraldehyde-fixed bovine pericardium using a novel equibiaxial bulge inflation system. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 121, 104588.	1.5	2
57	Patient Specific Computational Modeling in Cardiovascular Mechanics. Lecture Notes in Computational Vision and Biomechanics, 2012, , 61-79.	0.5	2
58	Bacterial Cellulose: A Potential Vascular Graft and Tissue Engineering Scaffold. , 2009, , .		1
59	Computational analysis of the role of mechanosensitive Notch signaling in arterial adaptation to hypertension. Journal of the Mechanical Behavior of Biomedical Materials, 2022, 133, 105325.	1.5	1
60	Patient Specific Finite Element Modelling of the Carotid Bifurcation. , 2009, , .		0
61	An Anisotropic Structural Model of the Aortic Wall Based on Tensile Tests and Non-Invasive 3D Fibre Analysis Using Diffusion Tensor Imaging. , 2009, , .		0
62	Injury Driven Biological Model of Restenotic Lesion Development Predicts the Effects of Stent Geometry on Restenosis. , 2009, , .		0
63	Mechanical Characterization of Fresh Human Carotid Atherosclerotic Plaque. , 2009, , .		0