Duncan J Maitland

List of Publications by Year
in descending order

95 papers	4,559 citations	147801 31 h-index	106344 65 g-index
96 all docs	96 docs citations	96 times ranked	3826 citing authors

#	Article	IF	Citations
1	Biomedical applications of thermally activated shape memory polymers. Journal of Materials Chemistry, 2010, 20, 3356.	6.7	395
2	Inductively Heated Shape Memory Polymer for the Magnetic Actuation of Medical Devices. IEEE Transactions on Biomedical Engineering, 2006, 53, 2075-2083.	4.2	313
3	Photothermal properties of shape memory polymer micro-actuators for treating stroke. Lasers in Surgery and Medicine, 2002, 30, 1-11.	2.1	282
4	A pH-responsive supramolecular polymer gel as an enteric elastomer for use in gastric devices. Nature Materials, 2015, 14, 1065-1071.	27.5	268
5	Laser-activated shape memory polymer intravascular thrombectomy device. Optics Express, 2005, 13, 8204.	3.4	236
6	Low density biodegradable shape memory polyurethane foams for embolic biomedical applications. Acta Biomaterialia, 2014, 10, 67-76.	8.3	155
7	Shape-memory behavior of thermally stimulated polyurethane for medical applications. Journal of Applied Polymer Science, 2007, 103, 3882-3892.	2.6	145
8	Mechanical Properties of Mechanical Actuator for Treating Ischemic Stroke. Biomedical Microdevices, 2002, 4, 89-96.	2.8	135
9	A shape memory foam composite with enhanced fluid uptake and bactericidal properties as a hemostatic agent. Acta Biomaterialia, 2017, 47, 91-99.	8.3	133
10	Threeâ€Dimensional Flexible Electronics Enabled by Shape Memory Polymer Substrates for Responsive Neural Interfaces. Macromolecular Materials and Engineering, 2012, 297, 1193-1202.	3.6	120
11	Fabrication and in vitro deployment of a laser-activated shape memory polymer vascular stent. BioMedical Engineering OnLine, 2007, 6, 43.	2.7	116
12	Ultra low density and highly crosslinked biocompatible shape memory polyurethane foams. Journal of Polymer Science, Part B: Polymer Physics, 2012, 50, 724-737.	2.1	114
13	Shape Memory Polymer Stent With Expandable Foam: A New Concept for Endovascular Embolization of Fusiform Aneurysms. IEEE Transactions on Biomedical Engineering, 2007, 54, 1157-1160.	4.2	111
14	<i>In vivo</i> response to an implanted shape memory polyurethane foam in a porcine aneurysm model. Journal of Biomedical Materials Research - Part A, 2014, 102, 1231-1242.	4.0	110
15	Prototype laser-activated shape memory polymer foam device for embolic treatment of aneurysms. Journal of Biomedical Optics, 2007, 12, 030504.	2.6	94
16	Shape memory polymers based on uniform aliphatic urethane networks. Journal of Applied Polymer Science, 2007, 106, 540-551.	2.6	92
17	Opacification of Shape Memory Polymer Foam Designed for Treatment of Intracranial Aneurysms. Annals of Biomedical Engineering, 2012, 40, 883-897.	2.5	91
18	Porous Shape-Memory Polymers. Polymer Reviews, 2013, 53, 41-75.	10.9	84

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19	The effect of moisture absorption on the physical properties of polyurethane shape memory polymer foams. Smart Materials and Structures, 2011, 20, 085010.	3.5	78
20	Laser-activated shape memory polymer microactuator for thrombus removal following ischemic stroke: preliminary in vitro analysis. IEEE Journal of Selected Topics in Quantum Electronics, 2005, 11, 892-901.	2.9	72
21	A Processable Shape Memory Polymer System for Biomedical Applications. Advanced Healthcare Materials, 2015, 4, 1386-1398.	7.6	66
22	Porous shape memory polymers: Design and applications. Journal of Polymer Science, Part B: Polymer Physics, 2016, 54, 1300-1318.	2.1	65
23	A Shape Memory Polymer Dialysis Needle Adapter for the Reduction of Hemodynamic Stress Within Arteriovenous Grafts. IEEE Transactions on Biomedical Engineering, 2007, 54, 1722-1724.	4.2	60
24	Postâ€polymerization crosslinked polyurethane shape memory polymers. Journal of Applied Polymer Science, 2011, 121, 144-153.	2.6	60
25	Design and verification of a shape memory polymer peripheral occlusion device. Journal of the Mechanical Behavior of Biomedical Materials, 2016, 63, 195-206.	3.1	49
26	Comparison of shape memory polymer foam versus bare metal coil treatments in an <i>in vivo</i> porcine sidewall aneurysm model. , 2017, 105, 1892-1905.		48
27	<i>In vitro</i> and <i>in vivo</i> evaluation of a shape memory polymer foamâ€overâ€wire embolization device delivered in saccular aneurysm models. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2016, 104, 1407-1415.	3.4	47
28	Shape memory polyurethanes with oxidation-induced degradation: In vivo and in vitro correlations for endovascular material applications. Acta Biomaterialia, 2017, 59, 33-44.	8.3	47
29	Controlling the Actuation Rate of Lowâ€Density Shapeâ€Memory Polymer Foams in Water. Macromolecular Chemistry and Physics, 2013, 214, 1204-1214.	2.2	46
30	Reticulation of low density shape memory polymer foam with an in vivo demonstration of vascular occlusion. Journal of the Mechanical Behavior of Biomedical Materials, 2014, 40, 102-114.	3.1	38
31	Thermomechanical properties, collapse pressure, and expansion of shape memory polymer neurovascular stent prototypes. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2009, 90B, 421-429.	3.4	35
32	Virtual Treatment of Basilar Aneurysms Using Shape Memory Polymer Foam. Annals of Biomedical Engineering, 2013, 41, 725-743.	2.5	32
33	<i>In vivo</i> comparison of shape memory polymer foamâ€coated and bare metal coils for aneurysm occlusion in the rabbit elastase model. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2019, 107, 2466-2475.	3.4	32
34	Biodegradable shape memory polymer foams with appropriate thermal properties for hemostatic applications. Journal of Biomedical Materials Research - Part A, 2020, 108, 1281-1294.	4.0	32
35	Effects of Isophorone Diisocyanate on the Thermal and Mechanical Properties of Shapeâ€Memory Polyurethane Foams. Macromolecular Chemistry and Physics, 2014, 215, 2420-2429.	2.2	31
36	Injectable polyMIPE scaffolds for soft tissue regeneration. Polymer, 2014, 55, 426-434.	3.8	31

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37	Rapidly-cured isosorbide-based cross-linked polycarbonate elastomers. Polymer Chemistry, 2016, 7, 2639-2644.	3.9	31
38	Tungsten-loaded SMP foam nanocomposites with inherent radiopacity and tunable thermo-mechanical properties. Polymers for Advanced Technologies, 2016, 27, 195-203.	3.2	30
39	Solvent stimulated actuation of polyurethane-based shape memory polymer foams using dimethyl sulfoxide and ethanol. Smart Materials and Structures, 2016, 25, 075014.	3.5	29
40	The effect of free radical inhibitor on the sensitized radiation crosslinking and thermal processing stabilization of polyurethane shape memory polymers. Radiation Physics and Chemistry, 2013, 83, 111-121.	2.8	28
41	Multifunctional Shapeâ€Memory Polymer Foams with Bioâ€inspired Antimicrobials. ChemPhysChem, 2018, 19, 1999-2008.	2.1	28
42	Two-year performance study of porous, thermoset, shape memory polyurethanes intended for vascular medical devices. Smart Materials and Structures, 2017, 26, 035054.	3.5	27
43	Electron Beam Crosslinked Polyurethane Shape Memory Polymers with Tunable Mechanical Properties. Macromolecular Chemistry and Physics, 2013, 214, 1258-1272.	2.2	25
44	Microscopic Assessment of Healing and Effectiveness of a Foam-Based Peripheral Occlusion Device. ACS Biomaterials Science and Engineering, 2020, 6, 2588-2599.	5.2	25
45	Design and biocompatibility of endovascular aneurysm filling devices. Journal of Biomedical Materials Research - Part A, 2015, 103, 1577-1594.	4.0	23
46	Estimation of aneurysm wall stresses created by treatment with a shape memory polymer foam device. Biomechanics and Modeling in Mechanobiology, 2012, 11, 715-729.	2.8	22
47	In vitro performance of a shape memory polymer foam-coated coil embolization device. Medical Engineering and Physics, 2017, 49, 56-62.	1.7	21
48	Improving the Oxidative Stability of Shape Memory Polyurethanes Containing Tertiary Amines by the Presence of Isocyanurate Triols. Macromolecules, 2018, 51, 9078-9087.	4.8	21
49	Porous media properties of reticulated shape memory polymer foams and mock embolic coils for aneurysm treatment. BioMedical Engineering OnLine, 2013, 12, 103.	2.7	18
50	Shape memory polymers with visible and near-infrared imaging modalities: synthesis, characterization and in vitro analysis. RSC Advances, 2017, 7, 19742-19753.	3.6	18
51	Polyurethane Microparticles for Stimuli Response and Reduced Oxidative Degradation in Highly Porous Shape Memory Polymers. ACS Applied Materials & Interfaces, 2018, 10, 32998-33009.	8.0	18
52	A Structural Approach to Establishing a Platform Chemistry for the Tunable, Bulk Electron Beam Cross-Linking of Shape Memory Polymer Systems. Macromolecules, 2013, 46, 8905-8916.	4.8	17
53	Modification of shape memory polymer foams using tungsten, aluminum oxide, and silicon dioxide nanoparticles. RSC Advances, 2016, 6, 918-927.	3.6	17
54	Shape memory polymers with enhanced visibility for magnetic resonance- and X-ray imaging modalities. Acta Biomaterialia, 2017, 54, 45-57.	8.3	17

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55	Revealing the glass transition in shape memory polymers using Brillouin spectroscopy. Applied Physics Letters, 2017, 111, 241904.	3.3	17
56	Shape memory polymer (SMP) scaffolds with improved self-fitting properties. Journal of Materials Chemistry B, 2021, 9, 3826-3837.	5.8	16
57	In Vitro Study of Transcatheter Delivery of a Shape Memory Polymer Foam Embolic Device for Treating Cerebral Aneurysms. Journal of Medical Devices, Transactions of the ASME, 2013, 7, .	0.7	15
58	Examination of radioâ€opacity enhancing additives in shape memory polyurethane foams. Journal of Applied Polymer Science, 2015, 132, .	2.6	14
59	Shape memory polymer therapeutic devices for stroke. , 2005, , .		13
60	Magnetic resonance flow velocity and temperature mapping of a shape memory polymer foam device. BioMedical Engineering OnLine, 2009, 8, 42.	2.7	13
61	Microâ€CT and histopathology methods to assess host response of aneurysms treated with shape memory polymer foamâ€coated coils versus bare metal coil occlusion devices. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2020, 108, 2238-2249.	3.4	13
62	Highly Cross-Linked Shape Memory Polymers with Tunable Oxidative and Hydrolytic Degradation Rates and Selected Products Based on Succinic Acid. ACS Applied Bio Materials, 2019, 2, 454-463.	4.6	12
63	Cold Plasma Reticulation of Shape Memory Embolic Tissue Scaffolds. Macromolecular Rapid Communications, 2016, 37, 1945-1951.	3.9	11
64	Shape memory polyurethaneâ€urea foams with improved toughness. Journal of Applied Polymer Science, 2019, 136, 47268.	2.6	11
65	Development of siloxane-based amphiphiles as cell stabilizers for porous shape memory polymer systems. Journal of Colloid and Interface Science, 2016, 478, 334-343.	9.4	10
66	Increased X-ray Visualization of Shape Memory Polymer Foams by Chemical Incorporation of Iodine Motifs. Polymers, 2017, 9, 381.	4.5	10
67	Improved oxidative biostability of porous shape memory polymers by substituting triethanolamine for glycerol. Journal of Applied Polymer Science, 2019, 136, 47857.	2.6	10
68	Shape Memory Polymer Foams Synthesized Using Glycerol and Hexanetriol for Enhanced Degradation Resistance. Polymers, 2020, 12, 2290.	4.5	10
69	Three-dimensional bioprinting of aneurysm-bearing tissue structure for endovascular deployment of embolization coils. Biofabrication, 2021, 13, 015006.	7.1	10
70	Mechanical and in vitro evaluation of an experimental canine patent ductus arteriosus occlusion device. Journal of the Mechanical Behavior of Biomedical Materials, 2016, 59, 156-167.	3.1	9
71	Effects of Sterilization on Shape Memory Polyurethane Embolic Foam Devices. Journal of Medical Devices, Transactions of the ASME, 2017, 11, 0310111-310119.	0.7	8
72	Fabrication and Characterization of Optical Tissue Phantoms Containing Macrostructure. Journal of Visualized Experiments, 2018, , .	0.3	7

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73	A computational thrombus formation model: application to an idealized two-dimensional aneurysm treated with bare metal coils. Biomechanics and Modeling in Mechanobiology, 2018, 17, 1821-1838.	2.8	7
74	Silicone membranes to inhibit water uptake into thermoset polyurethane shapeâ€memory polymer conductive composites. Journal of Applied Polymer Science, 2015, 132, .	2.6	6
75	Perceptions of transcatheter device closure of patent ductus arteriosus in veterinary cardiology and evaluation of a canine model to simulate device placement: a preliminary study. Journal of Veterinary Cardiology, 2017, 19, 268-275.	0.9	6
76	Macrophage activation in response to shape memory polymer f<scp>oamâ€coated</scp> aneurysm occlusion devices. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2022, 110, 1535-1544.	3.4	6
77	Feasibility of Crosslinked Acrylic Shape Memory Polymer for a Thrombectomy Device. Smart Materials Research, 2014, 2014, 1-12.	0.5	5
78	Embolic applications of shape memory polyurethane scaffolds. , 2016, , 561-597.		5
79	Particulate Release From Nanoparticle-Loaded Shape Memory Polymer Foams. Journal of Medical Devices, Transactions of the ASME, 2017, 11, 0110091-110099.	0.7	5
80	Controlling the Physical Properties of Random Network Based Shape Memory Polymer Foams. Materials Research Society Symposia Proceedings, 2010, 1274, 1.	0.1	4
81	Computational study of clot formation in aneurysms treated with shape memory polymer foam. Medical Engineering and Physics, 2020, 75, 65-71.	1.7	3
82	In vitro cytocompatibility testing of oxidative degradation products. Journal of Bioactive and Compatible Polymers, 2021, 36, 197-211.	2.1	3
83	Controlling Morphology and Physio-Chemical Properties of Stimulus-Responsive Polyurethane Foams by Altering Chemical Blowing Agent Content. Polymers, 2022, 14, 2288.	4.5	3
84	Development and Characterization of Oxidatively Responsive Thiolâ€“Ene Networks for Bone Graft Applications. ACS Applied Bio Materials, 2022, 5, 2633-2642.	4.6	3
85	Design and Realization of Biomedical Devices Based on Shape Memory Polymers. Materials Research Society Symposia Proceedings, 2009, 1190, 100.	0.1	2
86	An experimental canine patent ductus arteriosus occlusion device based on shape memory polymer foam in a nitinol cage. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 75, 279-292.	3.1	2
87	Chemical Modifications of Porous Shape Memory Polymers for Enhanced X-ray and MRI Visibility. Molecules, 2020, 25, 4660.	3.8	2
88	The Distribution and Role of M1 and M2 Macrophages in Aneurysm Healing after Platinum Coil Embolization. American Journal of Neuroradiology, 2020, 41, 1657-1662.	2.4	2
89	Correlation of light microscopic findings with transmission electron microscopy within a vascular occlusion device. Cardiovascular Pathology, 2021, 50, 107288.	1.6	2
90	Mechanical and Shape Memory Properties of Electrospun Polyurethane with Thiol-Ene Crosslinking. Nanomaterials, 2022, 12, 406.	4.1	2

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91	Design and Characterization of an Endovascular Mechanical Thrombectomy Device1. Journal of Medical Devices, Transactions of the ASME, 2014, 8, .	0.7	1
92	Recycling: A Highâ€Performance Recycling Solution for Polystyrene Achieved by the Synthesis of Renewable Poly(thioether) Networks Derived from <scp>d</scp>â€Limonene (Adv. Mater. 10/2014). Advanced Materials, 2014, 26, 1551-1551.	21.0	1
93	Enhanced X-ray Visibility of Shape Memory Polymer Foam Using Iodine Motifs and Tantalum Microparticles. Journal of Composites Science, 2021, 5, 14.	3.0	1
94	Theoretical error of sectional method for estimation of shape memory polyurethane foam mass loss. Journal of Colloid and Interface Science, 2022, 625, 237-247.	9.4	1
95	Characterization of plasma deposited hydrocarbon diffusion barriers for embolic foam devices. , 2015, , .		0