Patrick T Mather

List of Publications by Citations

136 papers	12,371 citations	59 h-index	110 g-index
139 ext. papers	13,165 ext. citations	5.4 avg, IF	6.65 L-index

#	Paper	IF	Citations
136	Review of progress in shape-memory polymers. *Journal of Materials Chemistry*, **2007**, 17, 1543		1510
135	Shape Memory Polymer Research. *Annual Review of Materials Research*, **2009**, 39, 445-471	12.8	721
134	Two-Way Reversible Shape Memory in a Semicrystalline Network. *Macromolecules*, **2008**, 41, 184-192	5.5	403
133	Mechanical Relaxation and Microstructure of Poly(norbornyl-POSS) Copolymers. *Macromolecules*, **1999**, 32, 1194-1203	5.5	366
132	Linear/network poly(□caprolactone) blends exhibiting shape memory assisted self-healing (SMASH). *ACS Applied Materials & Interfaces*, **2011**, 3, 152-61	9.5	308
131	POSS Polymers: Physical Properties and Biomaterials Applications. *Polymer Reviews*, **2009**, 49, 25-63	14	305
130	Shape Memory Assisted Self-Healing Coating.. *ACS Macro Letters*, **2013**, 2, 152-156	6.6	277
129	Reinforcement and environmental degradation of nylon-6/clay nanocomposites. *Polymer*, **2001**, 42, 5849-5858	3.9	271
128	Structural development during deformation of polyurethane containing polyhedral oligomeric silsesquioxanes (POSS) molecules. *Polymer*, **2001**, 42, 599-611	3.9	254
127	Shape memory effect exhibited by smectic-C liquid crystalline elastomers. *Journal of the American Chemical Society*, **2003**, 125, 15300-1	16.4	243
126	Chemically Cross-Linked Polycyclooctene: Synthesis, Characterization, and Shape Memory Behavior. *Macromolecules*, **2002**, 35, 9868-9874	5.5	241
125	Triple-Shape Polymeric Composites (TSPCs). *Advanced Functional Materials*, **2010**, 20, 2649-2656	15.6	235
124	Viscoelastic and morphological behavior of hybrid styryl-based polyhedral oligomeric silsesquioxane (POSS) copolymers. *Journal of Polymer Science, Part B: Polymer Physics*, **1998**, 36, 1857-1872	2.6	221
123	Shape memory polymers with built-in threshold temperature sensors. *Journal of Materials Chemistry*, **2008**, 18, 1082		201
122	Conductive shape memory nanocomposites for high speed electrical actuation. *Soft Matter*, **2010**, 6, 2146	3.6	199
121	ABA triblock copolymers containing polyhedral oligomeric silsesquioxane pendant groups: synthesis and unique properties. *Polymer*, **2003**, 44, 2739-2750	3.9	193
120	Dynamic cell behavior on shape memory polymer substrates. *Biomaterials*, **2011**, 32, 2285-93	15.6	182

119	Shape memory and nanostructure in poly(norbornyl-POSS) copolymers. *Polymer International*, **2000**, 49, 453-457	3.3	178
118	Polycaprolactone–POSS Chemical/Physical Double Networks. *Macromolecules*, **2008**, 41, 4730-4738	5.5	173
117	Nanoscale reinforcement of polyhedral oligomeric silsesquioxane (POSS) in polyurethane elastomer. *Polymer International*, **2000**, 49, 437-440	3.3	170
116	Deformation-Induced Color Changes in Mechanochromic Polyethylene Blends. *Macromolecules*, **2007**, 40, 2400-2408	5.5	165
115	A thermoplastic/thermoset blend exhibiting thermal mending and reversible adhesion. *ACS Applied Materials & Interfaces*, **2009**, 1, 612-20	9.5	156
114	Combined One-Way and Two-Way Shape Memory in a Glass-Forming Nematic Network. *Macromolecules*, **2009**, 42, 273-280	5.5	153
113	Nanofiber Network Ion-Exchange Membranes. *Macromolecules*, **2008**, 41, 4569-4572	5.5	152
112	Amphiphilic Telechelics Incorporating Polyhedral Oligosilsesquioxane: 1. Synthesis and Characterization. *Macromolecules*, **2002**, 35, 8378-8384	5.5	142
111	Biodegradable thermoplastic polyurethanes incorporating polyhedral oligosilsesquioxane. *Biomacromolecules*, **2008**, 9, 2458-67	6.9	132
110	Preparation and Characterization of Shape Memory Elastomeric Composites. *Macromolecules*, **2009**, 42, 7251-7253	5.5	131
109	Hybrid epoxy-based thermosets based on polyhedral oligosilsesquioxane: Cure behavior and toughening mechanisms. *Journal of Polymer Science, Part B: Polymer Physics*, **2003**, 41, 3299-3313	2.6	121
108	Rheological Behavior of Entangled Polystyrene–Polyhedral Oligosilsesquioxane (POSS) Copolymers. *Macromolecules*, **2007**, 40, 544-554	5.5	114
107	Two-way reversible shape memory effects in a free-standing polymer composite. *Smart Materials and Structures*, **2011**, 20, 065010	3.4	111
106	PEG–POSS Multiblock Polyurethanes: Synthesis, Characterization, and Hydrogel Formation. *Macromolecules*, **2010**, 43, 7637-7649	5.5	107
105	Effect of Methyl Methacrylate/Polyhedral Oligomeric Silsesquioxane Random Copolymers in Compatibilization of Polystyrene and Poly(methyl methacrylate) Blends. *Macromolecules*, **2002**, 35, 8029-8038	5.5	107
104	Soft shape memory in main-chain liquid crystalline elastomers. *Journal of Materials Chemistry*, **2010**, 20, 3449		106
103	Shape-memory-actuated change in scaffold fiber alignment directs stem cell morphology. *Acta Biomaterialia*, **2013**, 9, 8790-801	10.8	104
102	Welded Electrochromic Conductive Polymer Nanofibers by Electrostatic Spinning. *Advanced Materials*, **2005**, 17, 2177-2180	24	102

101	Tailored drug release from biodegradable stent coatings based on hybrid polyurethanes. *Journal of Controlled Release*, **2009**, 137, 224-33	11.7	100
100	Entanglement-based shape memory polyurethanes: Synthesis and characterization. *Polymer*, **2012**, 53, 5924-5934	3.9	91
99	Antimicrobial properties of nanostructured hydrogel webs containing silver. *Biomacromolecules*, **2009**, 10, 2686-93	6.9	90
98	A functionally graded shape memory polymer. *Soft Matter*, **2011**, 7, 68-74	3.6	87
97	Rheology of highly swollen chitosan/polyacrylate hydrogels. *Polymer*, **1999**, 40, 4593-4602	3.9	83
96	Nanofiber composite membranes with low equivalent weight perfluorosulfonic acid polymers. *Journal of Materials Chemistry*, **2010**, 20, 6282		80
95	Vertex Group Effects in Entangled Polystyrene−Polyhedral Oligosilsesquioxane (POSS) Copolymers. *Macromolecules*, **2009**, 42, 1142-1152	5.5	80
94	Characterization of the cure-state of DGEBA-DDS epoxy using ultrasonic, dynamic mechanical, and thermal probes. *Polymer Engineering and Science*, **2002**, 42, 51-67	2.3	80
93	Water-triggered shape memory of multiblock thermoplastic polyurethanes (TPUs). *RSC Advances*, **2013**, 3, 15783	3.7	78
92	Constitutive Modeling of Shape Memory Effects in Semicrystalline Polymers With Stretch Induced Crystallization. *Journal of Engineering Materials and Technology, Transactions of the ASME*, **2010**, 132,	1.8	76
91	Sulfonated Polysulfone/POSS Nanofiber Composite Membranes for PEM Fuel Cells. *Journal of the Electrochemical Society*, **2010**, 157, B914	3.9	75
90	Microstructure and Phase Behavior of POSS/PCL Shape Memory Nanocomposites. *Macromolecules*, **2011**, 44, 5682-5692	5.5	75
89	Polyelectrolyte spin assembly: Influence of ionic strength on the growth of multilayered thin films. *Journal of Polymer Science, Part B: Polymer Physics*, **2004**, 42, 3654-3666	2.6	75
88	Morphology, Microstructure, and Rheology of Amphiphilic Telechelics Incorporating Polyhedral Oligosilsesquioxane. *Macromolecules*, **2006**, 39, 9253-9260	5.5	74
87	Shape memory poly(ε-caprolactone)-co-poly(ethylene glycol) foams with body temperature triggering and two-way actuation. *Journal of Materials Chemistry B*, **2013**, 1, 4916-4920	7.3	73
86	Thermomechanical behavior of shape memory elastomeric composites. *Journal of the Mechanics and Physics of Solids*, **2012**, 60, 67-83	5	72
85	Poly(vinyl alcohol) (PVA)/sulfonated polyhedral oligosilsesquioxane (sPOSS) hybrid membranes for direct methanol fuel cell applications. *Polymers for Advanced Technologies*, **2007**, 18, 535-543	3.2	72
84	Rheo-Optical Evidence of a Flow-Induced Isotropic−Nematic Transition in a Thermotropic Liquid-Crystalline Polymer. *Macromolecules*, **1997**, 30, 7977-7989	5.5	70

83	Modification of bisphenol-A based bismaleimide resin (BPA-BMI) with an allyl-terminated hyperbranched polyimide (AT-PAEKI). *Polymer*, **2006**, 47, 2813-2821	3.9	70
82	PLGA–POSS End-Linked Networks with Tailored Degradation and Shape Memory Behavior. *Macromolecules*, **2009**, 42, 6596-6605	5.5	68
81	Telechelic Poly(ethylene glycol)–POSS Amphiphiles at the Air/Water Interface. *Macromolecules*, **2007**, 40, 682-688	5.5	68
80	High conductivity perfluorosulfonic acid nanofiber composite fuel-cell membranes. *ChemSusChem*, **2010**, 3, 1245-8	8.3	62
79	A thermally responsive, rigid, and reversible adhesive. *Polymer*, **2010**, 51, 1169-1175	3.9	59
78	Amphiphilic telechelics with polyhedral oligosilsesquioxane (POSS) end-groups: Dilute solution viscometry. *Polymer*, **2006**, 47, 6202-6207	3.9	59
77	Mechanisms of triple-shape polymeric composites due to dual thermal transitions. *Soft Matter*, **2013**, 9, 2212	3.6	58
76	Self-Assembly and Chain-Folding in Hybrid Coil–Coil–Cube Triblock Oligomers of Polyethylene-b-Poly(ethylene oxide)-b-Polyhedral Oligomeric Silsesquioxane. *Macromolecules*, **2007**, 40, 5460-5470	5.5	58
75	Polyhedral oligomeric silsesquioxane (POSS) suppresses enzymatic degradation of PCL-based polyurethanes. *Biomacromolecules*, **2011**, 12, 3066-77	6.9	57
74	Properties of triple shape memory composites prepared via polymerization-induced phase separation. *Soft Matter*, **2014**, 10, 3112-21	3.6	56
73	Optically transparent self-reinforced poly(ethylene terephthalate) composites: molecular orientation and mechanical properties. *Polymer*, **2005**, 46, 761-773	3.9	54
72	Molecular dynamics simulations of multilayer polyelectrolyte films: effect of electrostatic and short-range interactions. *Langmuir*, **2006**, 22, 9994-10002	4	53
71	Anhydride-Based Reconfigurable Shape Memory Elastomers. *ACS Macro Letters*, **2016**, 5, 203-207	6.6	51
70	A New Hyperbranched Poly(arylene–ether–ketone–imide): Synthesis, Chain-End Functionalization, and Blending with a Bis(maleimide). *Macromolecules*, **2002**, 35, 4951-4959	5.5	51
69	Nanoscale Order and Crystallization in POSS–PCL Shape Memory Molecular Networks. *Macromolecules*, **2015**, 48, 5770-5779	5.5	50
68	In vitro wrinkle formation via shape memory dynamically aligns adherent cells. *Soft Matter*, **2013**, 9, 4705	3.6	49
67	Molecular dynamics simulations of layer-by-layer assembly of polyelectrolytes at charged surfaces: effects of chain degree of polymerization and fraction of charged monomers. *Langmuir*, **2005**, 21, 6113-22	4	49
66	Mesogen-jacketed liquid crystalline polymers via stable free radical polymerization. *Macromolecular Chemistry and Physics*, **1999**, 200, 2338-2344	2.6	48

65	Photo-induced bending in a light-activated polymer laminated composite. *Soft Matter*, **2015**, 11, 2673-82	3.6	46
64	Synthesis and characterization of fluorinated benzoxazole polymers with high Tg and low dielectric constant. *Journal of Polymer Science Part A*, **2000**, 38, 1991-2003	2.5	46
63	Thermally modulated nanostructure of poly(ε-caprolactone)-POSS multiblock thermoplastic polyurethanes. *Polymer*, **2013**, 54, 3350-3362	3.9	41
62	Morphological and Rheological Responses to Shear Start-up and Flow Reversal of Thermotropic Liquid-Crystalline Polymers. *Macromolecules*, **2000**, 33, 7594-7608	5.5	40
61	Entanglement-Based Thermoplastic Shape Memory Polymeric Particles with Photothermal Actuation for Biomedical Applications. *ACS Applied Materials & Interfaces*, **2018**, 10, 13333-13341	9.5	39
60	Metallo-Responsive Liquid Crystalline Monomers and Polymers. *Chemistry of Materials*, **2011**, 23, 3525-3533	9.6	39
59	Reversible actuation in main-chain liquid crystalline elastomers with varying crosslink densities. *Polymer*, **2014**, 55, 5897-5907	3.9	38
58	A finite deformation thermomechanical constitutive model for triple shape polymeric composites based on dual thermal transitions. *International Journal of Solids and Structures*, **2014**, 51, 2777-2790	3.1	38
57	Tailored Phase Transitions via Mixed-Mesogen Liquid Crystalline Polymers with Silicon-Based Spacers. *Macromolecules*, **2005**, 38, 4103-4113	5.5	38
56	Soft bacterial polyester-based shape memory nanocomposites featuring reconfigurable nanostructure. *Journal of Polymer Science, Part B: Polymer Physics*, **2012**, 50, 387-393	2.6	37
55	Dual-Spun Shape Memory Elastomeric Composites. *ACS Macro Letters*, **2015**, 4, 436-440	6.6	36
54	Biodegradable Thermoplastic Elastomers Incorporating POSS: Synthesis, Microstructure, and Mechanical Properties. *Macromolecules*, **2016**, 49, 3769-3779	5.5	32
53	Combined effect of spin speed and ionic strength on polyelectrolyte spin assembly. *Langmuir*, **2007**, 23, 12589-97	4	31
52	A hydrogel-forming liquid crystalline elastomer exhibiting soft shape memory. *Journal of Polymer Science, Part B: Polymer Physics*, **2016**, 54, 38-52	2.6	31
51	Blends of Paclitaxel with POSS-Based Biodegradable Polyurethanes: Morphology, Miscibility, and Specific Interactions. *Macromolecules*, **2010**, 43, 4991-4999	5.5	30
50	Thermoviscoplastic behaviors of anisotropic shape memory elastomeric composites for cold programmed non-affine shape change. *Journal of the Mechanics and Physics of Solids*, **2015**, 85, 219-244	5	27
49	Rapid synthesis of polymer-silica hybrid nanofibers by biomimetic mineralization. *Polymer*, **2009**, 50, 1214-1222	3.9	27
48	Preparation and characterization of triple shape memory composite foams. *Soft Matter*, **2014**, 10, 8066-74	3.6	25

47	Improved synthesis of functionalized mesogenic 2,6-bisbenzimidazolylpyridine ligands. *Tetrahedron* , **2008**, 64, 8488-8495	2.4	25
46	Synthesis and characterization of a zwitterionic hydrogel blend with low coefficient of friction. *Acta Biomaterialia*, **2016**, 46, 245-255	10.8	25
45	Enzymatically triggered shape memory polymers. *Acta Biomaterialia*, **2019**, 84, 88-97	10.8	25
44	Mechanically programmed shape change in laminated elastomeric composites. *Soft Matter*, **2015**, 11, 5754-64	3.6	23
43	Design strategies for shape memory polymers. *Current Opinion in Chemical Engineering*, **2013**, 2, 103-111	5.4	23
42	Fabrication of Polymeric Coatings with Controlled Microtopographies Using an Electrospraying Technique. *PLoS ONE*, **2015**, 10, e0129960	3.7	22
41	Interwoven polymer composites via dual-electrospinning with shape memory and self-healing properties. *MRS Communications*, **2015**, 5, 211-221	2.7	21
40	Nafion Nanofiber Membranes. *ECS Transactions*, **2009**, 25, 1451-1458	1	21
39	Osteogenic Capacity of Human Adipose-Derived Stem Cells is Preserved Following Triggering of Shape Memory Scaffolds. *Tissue Engineering - Part A*, **2016**, 22, 1026-35	3.9	18
38	Evolution of microstructure during shape memory cycling of a main-chain liquid crystalline elastomer. *Polymer*, **2013**, 54, 2808-2820	3.9	18
37	Shape Memory RGD-Containing Networks: Synthesis, Characterization, and Application in Cell Culture. *Macromolecular Symposia*, **2011**, 309-310, 162-172	0.8	18
36	Synthesis and thermal properties of thermosetting bis-benzocyclobutene□erminated arylene ether monomers. *Journal of Polymer Science Part A*, **1998**, 36, 2637-2651	2.5	18
35	Effect of stoichiometry on liquid crystalline supramolecular polymers formed with complementary nucleobase pair interactions. *Journal of Polymer Science Part A*, **2006**, 44, 5049-5059	2.5	18
34	Comparative analysis of shape memory-based self-healing coatings. *Journal of Polymer Science, Part B: Polymer Physics*, **2016**, 54, 1415-1426	2.6	16
33	Synthesis and Characterization of Unsaturated Thermotropic Polyesters Prepared via Acyclic Diene Metathesis Polymerization. *Macromolecules*, **2004**, 37, 5239-5249	5.5	15
32	Progressive Myofibril Reorganization of Human Cardiomyocytes on a Dynamic Nanotopographic Substrate. *ACS Applied Materials & Interfaces*, **2020**, 12, 21450-21462	9.5	14
31	Anisotropic Shape-Memory Elastomeric Composites: Fabrication and Testing. *Macromolecular Chemistry and Physics*, **2013**, 214, 1247-1257	2.6	14
30	Odd□Even Effect of Flexible Spacer Length on Flow-Induced Isotropic-to-Nematic Transition in Segmented Thermotropic Polymers. *Macromolecules*, **2002**, 35, 1326-1335	5.5	14

29	The shape-memory effect in ionic elastomers: fixation through ionic interactions. *Soft Matter*, **2017**, 13, 2983-2994	3.6	13
28	A latent crosslinkable PCL-based polyurethane: Synthesis, shape memory, and enzymatic degradation. *Journal of Materials Research*, **2018**, 33, 2463-2476	2.5	12
27	Molecular Composite Coatings on Nafion Using Layer-by-Layer Self-Assembly. *ACS Applied Materials & Interfaces*, **2015**, 7, 10365-73	9.5	11
26	Crosslinkable liquid crystalline copolymers with variable isotropization temperature. *Journal of Materials Chemistry*, **2012**, 22, 14518		11
25	Interfacial Tension of a Liquid Crystalline Polymer in an Isotropic Polymer Matrix. *Macromolecules*, **2005**, 38, 7343-7351	5.5	11
24	Non-uniform curvature and anisotropic deformation control wrinkling patterns on tori. *Soft Matter*, **2019**, 15, 5204-5210	3.6	10
23	Optical and Mechanical Rheometry of Semiflexible Main-Chain Thermotropic Liquid-Crystalline Polymers with Varying Pendant Groups. *Macromolecules*, **2000**, 33, 7922-7930	5.5	10
22	Phase behavior and rheology of blends containing polycarbonate and a thermotropic polyester. *Journal of Applied Polymer Science*, **1996**, 59, 243-250	2.9	10
21	Synthesis and characterization of a semiflexible liquid crystalline polyester with a broad nematic region. *Liquid Crystals*, **1994**, 17, 811-826	2.3	9
20	Hot-compacted interwoven webs of biodegradable polymers. *Polymer*, **2016**, 101, 127-138	3.9	8
19	Polypeptide-catalyzed biosilicification of dentin surfaces. *Journal of Dental Research*, **2009**, 88, 377-81	8.1	8
18	Thermally crosslinkable thermotropic copolyesters: synthesis, characterization, and processing. *Polymer*, **1997**, 38, 6009-6022	3.9	8
17	Tuning of reversible actuation via ROMP-based copolymerization semicrystalline polymers. *Polymer* , **2018**, 156, 228-239	3.9	8
16	In vivo kinetic degradation analysis and biocompatibility of aliphatic polyester polyurethanes. *Journal of Biomedical Materials Research - Part A*, **2010**, 94, 333-43	5.4	6
15	Phase Behavior, Rheology, and Morphology of Binary Blends of Semiflexible Main-Chain Thermotropic Liquid-Crystalline Polymers. *Macromolecules*, **2001**, 34, 7152-7161	5.5	5
14	Mechanics and tribology of a zwitterionic polymer blend: Impact of molecular weight. *Materials Science and Engineering C*, **2020**, 111, 110736	8.3	4
13	Composite Membranes for Hydrogen/Air PEM Fuel Cells. *ECS Transactions*, **2007**, 11, 79-87	1	4
12	Crystallization of POSS in a PEG-Based Multiblock Polyurethane: Toward A Hybrid Hydrogel. *Materials Research Society Symposia Proceedings*, **2004**, 847, 59		4

11	Mid-wavelength IR (MWIR) polarizers from glassy cholesteric liquid crystals. *Liquid Crystals*, **1999**, 26, 557-565	2.3	4
10	Dynamic covalent exchange in poly(thioether anhydrides). *Polymer Chemistry*, **2020**, 11, 7551-7561	4.9	4
9	Synthesis and Characterization of Zwitterionic Polymer Brush Functionalized Hydrogels with Ionic Responsive Coefficient of Friction. *Langmuir*, **2020**, 36, 3932-3940	4	3
8	Ternary Polymeric Composites Exhibiting Bulk and Surface Quadruple-Shape Memory Properties. *ChemPhysChem*, **2018**, 19, 2014-2024	3.2	2
7	A programmable shape-changing scaffold for regenerative medicine **2012**,		2
6	In vivo kinetic degradation analysis and biocompatibility of aliphatic polyester polyurethanes. *Journal of Biomedical Materials Research - Part A*, **2010**, 94A, n/a-n/a	5.4	2
5	The origin of stress-oscillation damping during start-up and reversal of torsional shearing of nematics. *Rheologica Acta*, **1997**, 36, 485-497	2.3	2
4	Profiling the responsiveness of focal adhesions of human cardiomyocytes to extracellular dynamic nano-topography.. *Bioactive Materials*, **2022**, 10, 367-377	16.7	2
3	Rheological and mechanical relaxation behavior of a thermally crosslinkable poly(ethylene terephthalate). *Polymer Engineering and Science*, **1998**, 38, 1174-1184	2.3	1
2	Rheological characterization of asphalt in a temperature-gradient combinatorial squeeze-flow setup. *Rheologica Acta*, **2007**, 46, 1075-1082	2.3	1
1	Directed Mineralization on Polyelectrolyte Multilayer Films. *Materials Research Society Symposia Proceedings*, **2006**, 975, 1		