Robert F Shepherd

List of Publications by Year in Descending Order

102 papers	11,512 citations	45 h-index	107 g-index
112 ext. papers	13,911 ext. citations	14.9 avg, IF	6.56 L-index

#	Paper	IF	Citations
102	Polymer interdigitated pillar electrostatic (PIPE) actuators.. *Microsystems and Nanoengineering*, **2022**, 8, 18	7.7	1
101	Towards enduring autonomous robots via embodied energy.. *Nature*, **2022**, 602, 393-402	50.4	13
100	Pump Up the Jam: Granular Media as a Quasi-Hydraulic Fluid for Independent Control Over Isometric and Isotonic Actuation.. *Advanced Science*, **2022**, e2104402	13.6	1
99	Shaping the future of robotics through materials innovation. *Nature Materials*, **2021**, 20, 1582-1587	27	17
98	Acoustophoretic Liquefaction For 3D Printing Ultrahigh Viscosity Nanoparticle Suspensions. *Advanced Materials*, **2021**, e2106183	24	1
97	The new material science of robots. *Current Opinion in Solid State and Materials Science*, **2021**, 25, 100894	12	1
96	Elastomeric Haptic Devices for Virtual and Augmented Reality. *Advanced Functional Materials*, **2021**, 31, 2009364	15.6	7
95	Digital light processing of liquid crystal elastomers for self-sensing artificial muscles. *Science Advances*, **2021**, 7,	14.3	26
94	High-Bandwidth Nonlinear Control for Soft Actuators with Recursive Network Models. *Springer Proceedings in Advanced Robotics*, **2021**, 589-599	0.6	3
93	Making bioinspired 3D-printed autonomic perspiring hydrogel actuators. *Nature Protocols*, **2021**, 16, 2068-2087	18.8	2
92	Valveless microliter combustion for densely packed arrays of powerful soft actuators. *Proceedings of the National Academy of Sciences of the United States of America*, **2021**, 118,	11.5	4
91	3D Printing of Viscoelastic Suspensions via Digital Light Synthesis for Tough Nanoparticle-Elastomer Composites. *Advanced Materials*, **2020**, 32, e2001646	24	15
90	3D Printed Pyroelectric Lithium-Niobate High Voltages Source with Pull-in Regulated Output **2020**,		2
89	Underactuated fluidic control of a continuous multistable membrane. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 5217-5221	11.5	9
88	Autonomic perspiration in 3D-printed hydrogel actuators. *Science Robotics*, **2020**, 5,	18.6	56
87	A transparent, self-healing and high-□dielectric for low-field-emission stretchable optoelectronics. *Nature Materials*, **2020**, 19, 182-188	27	114
86	Electrohydraulic Tentacle Actuators: Rapid 3D Printing of Electrohydraulic (HASEL) Tentacle Actuators (Adv. Funct. Mater. 40/2020). *Advanced Functional Materials*, **2020**, 30, 2070266	15.6	

85	Stretchable distributed fiber-optic sensors. *Science*, **2020**, 370, 848-852	33.3	90
84	3D printable tough silicone double networks. *Nature Communications*, **2020**, 11, 4000	17.4	38
83	Rapid 3D Printing of Electrohydraulic (HASEL) Tentacle Actuators. *Advanced Functional Materials*, **2020**, 30, 2005244	15.6	14
82	Optical Lace for Synthetic Afferent Neural Networks. *Science Robotics*, **2019**, 4,	18.6	33
81	Bioinspiriertes Design und additive Fertigung von weichen Materialien, Maschinen, Robotern und haptischen Schnittstellen. *Angewandte Chemie*, **2019**, 131, 11300-11324	3.6	2
80	Bio-inspired Design and Additive Manufacturing of Soft Materials, Machines, Robots, and Haptic Interfaces. *Angewandte Chemie - International Edition*, **2019**, 58, 11182-11204	16.4	58
79	Electrolytic vascular systems for energy-dense robots. *Nature*, **2019**, 571, 51-57	50.4	72
78	Hierarchical chemomechanical encoding of multi-responsive hydrogel actuators via 3D printing. *Journal of Materials Chemistry A*, **2019**, 7, 15395-15403	13	40
77	Configurable Tendon Routing in a 3D-printed Soft Actuator for Improved Locomotion in a Multi-Legged Robot **2019**,		4
76	Optical stereolithography of antifouling zwitterionic hydrogels. *Journal of Materials Chemistry B*, **2019**, 7, 2855-2864	7.3	12
75	Resilient Task Planning and Execution for Reactive Soft Robots **2019**,		1
74	A Deformable Interface for Human Touch Recognition Using Stretchable Carbon Nanotube Dielectric Elastomer Sensors and Deep Neural Networks. *Soft Robotics*, **2019**, 6, 611-620	9.2	17
73	Dynamic photovoltaic building envelopes for adaptive energy and comfort management. *Nature Energy*, **2019**, 4, 671-682	62.3	36
72	Addressing sensor drift in a proprioceptive optical foam system **2019**,		1
71	Simple Synthesis of Elastomeric Photomechanical Switches That Self-Heal. *Macromolecular Rapid Communications*, **2019**, 40, e1800815	4.8	15
70	. *IEEE Robotics and Automation Letters*, **2019**, 4, 277-284	4.2	15
69	Untethered Stretchable Displays for Tactile Interaction. *Soft Robotics*, **2019**, 6, 142-149	9.2	9
68	Fluid-driven intrinsically soft robots **2019**, 61-84		4

67	Patient-specific design of a soft occluder for the left atrial appendage. *Nature Biomedical Engineering*, **2018**, 2, 8-16	19	38
66	3D printing of soft robotic systems. *Nature Reviews Materials*, **2018**, 3, 84-100	73.3	366
65	Compliant Buckled Foam Actuators and Application in Patient-Specific Direct Cardiac Compression. *Soft Robotics*, **2018**, 5, 99-108	9.2	12
64	Materials for 3D Printing Cardiovascular Devices **2018**, 33-59		
63	A variable shape and variable stiffness controller for haptic virtual interactions **2018**,		9
62	Leveraging fluid resistance in soft robots **2018**,		8
61	Soft optoelectronic sensory foams with proprioception. *Science Robotics*, **2018**, 3,	18.6	68
60	Fiber Embroidery of Self-Sensing Soft Actuators. *Biomimetics*, **2018**, 3,	3.7	16
59	Stereolithography for Personalized Left Atrial Appendage Occluders. *Advanced Materials Technologies*, **2018**, 3, 1800233	6.8	6
58	Elastomeric passive transmission for autonomous force-velocity adaptation applied to 3D-printed prosthetics. *Science Robotics*, **2018**, 3,	18.6	31
57	Flexible and stretchable sensors for fluidic elastomer actuated soft robots. *MRS Bulletin*, **2017**, 42, 138-142	3.2	60
56	Gait Synthesis for Modular Soft Robots. *Springer Proceedings in Advanced Robotics*, **2017**, 669-678	0.6	
55	Soft Robotics: Review of Fluid-Driven Intrinsically Soft Devices; Manufacturing, Sensing, Control, and Applications in Human-Robot Interaction . *Advanced Engineering Materials*, **2017**, 19, 1700016	3.5	456
54	Selective Mineralization of Tough Hydrogel Lumens for Simulating Arterial Plaque . *Advanced Engineering Materials*, **2017**, 19, 1600591	3.5	2
53	Stretchable surfaces with programmable 3D texture morphing for synthetic camouflaging skins. *Science*, **2017**, 358, 210-214	33.3	155
52	Highly Elastic, Transparent, and Conductive 3D-Printed Ionic Composite Hydrogels. *Advanced Functional Materials*, **2017**, 27, 1701807	15.6	122
51	Stretchable Optical Fibers: Threads for Strain-Sensitive Textiles. *Advanced Materials Technologies*, **2017**, 2, 1700087	6.8	42
50	Click chemistry stereolithography for soft robots that self-heal. *Journal of Materials Chemistry B*, **2017**, 5, 6249-6255	7.3	88

49	Stretchable transducers for kinesthetic interactions in virtual reality **2017**,		2
48	. *IEEE Robotics and Automation Magazine*, **2016**, 23, 55-64	3.4	93
47	Sculpting Soft Machines. *Soft Robotics*, **2016**, 3, 101-108	9.2	23
46	Highly stretchable electroluminescent skin for optical signaling and tactile sensing. *Science*, **2016**, 351, 1071-4	33.3	841
45	Morphing Metal and Elastomer Bicontinuous Foams for Reversible Stiffness, Shape Memory, and Self-Healing Soft Machines. *Advanced Materials*, **2016**, 28, 2801-6	24	124
44	Curvature control of soft orthotics via low cost solid-state optics **2016**,		10
43	Optoelectronically innervated soft prosthetic hand via stretchable optical waveguides. *Science Robotics*, **2016**, 1,	18.6	386
42	A Stretchable Multicolor Display and Touch Interface Using Photopatterning and Transfer Printing. *Advanced Materials*, **2016**, 28, 9770-9775	24	102
41	Direct Ink Writing of Silicon Carbide for Microwave Optics. *Advanced Engineering Materials*, **2016**, 18, 39-45	3.5	37
40	3D Printing Soft Materials: What Is Possible?. *Soft Robotics*, **2015**, 2, 3-6	9.2	26
39	Scalable manufacturing of high force wearable soft actuators. *Extreme Mechanics Letters*, **2015**, 3, 89-104	3.9	66
38	Integrated soft sensors and elastomeric actuators for tactile machines with kinesthetic sense. *Extreme Mechanics Letters*, **2015**, 5, 47-53	3.9	102
37	Mechanical Model of Globular Transition in Polymers. *ChemPlusChem*, **2015**, 80, 37-41	2.8	3
36	Poroelastic Foams for Simple Fabrication of Complex Soft Robots. *Advanced Materials*, **2015**, 27, 6334-40	24	88
35	Soft Robotics: Poroelastic Foams for Simple Fabrication of Complex Soft Robots (Adv. Mater. 41/2015). *Advanced Materials*, **2015**, 27, 6333-6333	24	2
34	3D printing antagonistic systems of artificial muscle using projection stereolithography. *Bioinspiration and Biomimetics*, **2015**, 10, 055003	2.6	161
33	A Hybrid Combining Hard and Soft Robots. *Soft Robotics*, **2014**, 1, 70-74	9.2	157
32	Control of soft machines using actuators operated by a Braille display. *Lab on A Chip*, **2014**, 14, 189-99	7.2	56

31	Pneumatic Networks for Soft Robotics that Actuate Rapidly. *Advanced Functional Materials*, **2014**, 24, 2163-2170	15.6	763
30	Using "click-e-bricks" to make 3D elastomeric structures. *Advanced Materials*, **2014**, 26, 5991-9	24	58
29	A Resilient, Untethered Soft Robot. *Soft Robotics*, **2014**, 1, 213-223	9.2	612
28	Energy for Biomimetic Robots: Challenges and Solutions. *Soft Robotics*, **2014**, 1, 106-109	9.2	8
27	Magnetic Assembly of Soft Robots with Hard Components. *Advanced Functional Materials*, **2014**, 24, 2180-2187	15.6	98
26	Pneumatic Energy Sources for Autonomous and Wearable Soft Robotics. *Soft Robotics*, **2014**, 1, 263-274	9.2	160
25	Elastomeric Tiles for the Fabrication of Inflatable Structures. *Advanced Functional Materials*, **2014**, 24, 5541-5549	15.6	40
24	An untethered jumping soft robot **2014**,		73
23	Soft machines that are resistant to puncture and that self seal. *Advanced Materials*, **2013**, 25, 6709-13	24	129
22	Using explosions to power a soft robot. *Angewandte Chemie - International Edition*, **2013**, 52, 2892-6	16.4	166
21	Robotic tentacles with three-dimensional mobility based on flexible elastomers. *Advanced Materials*, **2013**, 25, 205-12	24	457
20	Influence of surface traction on soft robot undulation. *International Journal of Robotics Research*, **2013**, 32, 1577-1584	5.7	55
19	Air-powered soft robots for K-12 classrooms **2013**,		11
18	Using Explosions to Power a Soft Robot. *Angewandte Chemie*, **2013**, 125, 2964-2968	3.6	66
17	Analog modeling of Worm-Like Chain molecules using macroscopic beads-on-a-string. *Physical Chemistry Chemical Physics*, **2012**, 14, 9041-6	3.6	14
16	Camouflage and display for soft machines. *Science*, **2012**, 337, 828-32	33.3	514
15	Structural evolution of cuboidal granular media. *Soft Matter*, **2012**, 8, 4795	3.6	9
14	3D Microperiodic Hydrogel Scaffolds for Robust Neuronal Cultures. *Advanced Functional Materials*, **2011**, 21, 47-54	15.6	188

13	3D Microperiodic Hydrogel Scaffolds for Robust Neuronal Cultures. *Advanced Functional Materials*, **2011**, 21, 46-46	15.6	1
12	Titelbild: Soft Robotics for Chemists (Angew. Chem. 8/2011). *Angewandte Chemie*, **2011**, 123, 1765-1765	3.6	8
11	Soft Robotics for Chemists. *Angewandte Chemie*, **2011**, 123, 1930-1935	3.6	421
10	Cover Picture: Soft Robotics for Chemists (Angew. Chem. Int. Ed. 8/2011). *Angewandte Chemie - International Edition*, **2011**, 50, 1727-1727	16.4	
9	Soft robotics for chemists. *Angewandte Chemie - International Edition*, **2011**, 50, 1890-5	16.4	691
8	Multigait soft robot. *Proceedings of the National Academy of Sciences of the United States of America* , **2011**, 108, 20400-3	11.5	1309
7	Designing colloidal suspensions for directed materials assembly. *Current Opinion in Colloid and Interface Science*, **2011**, 16, 71-79	7.6	42
6	Direct-Write Assembly of 3D Hydrogel Scaffolds for Guided Cell Growth. *Advanced Materials*, **2009**, 21, 2407-2410	24	237
5	Stop-Flow Lithography of Colloidal, Glass, and Silicon Microcomponents. *Advanced Materials*, **2008**, 20, 4734-4739	24	78
4	Biomimetic silicification of 3D polyamine-rich scaffolds assembled by direct ink writing. *Soft Matter*, **2006**, 2, 205-209	3.6	66
3	Microfluidic assembly of homogeneous and Janus colloid-filled hydrogel granules. *Langmuir*, **2006**, 22, 8618-22	4	236
2	Fugitive Inks for Direct-Write Assembly of Three-Dimensional Microvascular Networks. *Advanced Materials*, **2005**, 17, 395-399	24	188
1	Directed Colloidal Assembly of 3D Periodic Structures. *Advanced Materials*, **2002**, 14, 1279-1283	24	283