

# Robert F Shepherd

## List of Publications by Citations

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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	Multigait soft robot. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2011</b> , 108, 20400-3	11.5	1309
101	Highly stretchable electroluminescent skin for optical signaling and tactile sensing. <i>Science</i> , <b>2016</b> , 351, 1071-4	33.3	841
100	Pneumatic Networks for Soft Robotics that Actuate Rapidly. <i>Advanced Functional Materials</i> , <b>2014</b> , 24, 2163-2170	15.6	763
99	Soft robotics for chemists. <i>Angewandte Chemie - International Edition</i> , <b>2011</b> , 50, 1890-5	16.4	691
98	A Resilient, Untethered Soft Robot. <i>Soft Robotics</i> , <b>2014</b> , 1, 213-223	9.2	612
97	Camouflage and display for soft machines. <i>Science</i> , <b>2012</b> , 337, 828-32	33.3	514
96	Robotic tentacles with three-dimensional mobility based on flexible elastomers. <i>Advanced Materials</i> , <b>2013</b> , 25, 205-12	24	457
95	Soft Robotics: Review of Fluid-Driven Intrinsically Soft Devices; Manufacturing, Sensing, Control, and Applications in Human-Robot Interaction . <i>Advanced Engineering Materials</i> , <b>2017</b> , 19, 1700016	3.5	456
94	Soft Robotics for Chemists. <i>Angewandte Chemie</i> , <b>2011</b> , 123, 1930-1935	3.6	421
93	Optoelectronically innervated soft prosthetic hand via stretchable optical waveguides. <i>Science Robotics</i> , <b>2016</b> , 1,	18.6	386
92	3D printing of soft robotic systems. <i>Nature Reviews Materials</i> , <b>2018</b> , 3, 84-100	73.3	366
91	Directed Colloidal Assembly of 3D Periodic Structures. <i>Advanced Materials</i> , <b>2002</b> , 14, 1279-1283	24	283
90	Direct-Write Assembly of 3D Hydrogel Scaffolds for Guided Cell Growth. <i>Advanced Materials</i> , <b>2009</b> , 21, 2407-2410	24	237
89	Microfluidic assembly of homogeneous and Janus colloid-filled hydrogel granules. <i>Langmuir</i> , <b>2006</b> , 22, 8618-22	4	236
88	3D Microperiodic Hydrogel Scaffolds for Robust Neuronal Cultures. <i>Advanced Functional Materials</i> , <b>2011</b> , 21, 47-54	15.6	188
87	Fugitive Inks for Direct-Write Assembly of Three-Dimensional Microvascular Networks. <i>Advanced Materials</i> , <b>2005</b> , 17, 395-399	24	188
86	Using explosions to power a soft robot. <i>Angewandte Chemie - International Edition</i> , <b>2013</b> , 52, 2892-6	16.4	166

85	3D printing antagonistic systems of artificial muscle using projection stereolithography. <i>Bioinspiration and Biomimetics</i> , <b>2015</b> , 10, 055003	2.6	161
84	Pneumatic Energy Sources for Autonomous and Wearable Soft Robotics. <i>Soft Robotics</i> , <b>2014</b> , 1, 263-274	9.2	160
83	A Hybrid Combining Hard and Soft Robots. <i>Soft Robotics</i> , <b>2014</b> , 1, 70-74	9.2	157
82	Stretchable surfaces with programmable 3D texture morphing for synthetic camouflaging skins. <i>Science</i> , <b>2017</b> , 358, 210-214	33.3	155
81	Soft machines that are resistant to puncture and that self seal. <i>Advanced Materials</i> , <b>2013</b> , 25, 6709-13	24	129
80	Morphing Metal and Elastomer Bicontinuous Foams for Reversible Stiffness, Shape Memory, and Self-Healing Soft Machines. <i>Advanced Materials</i> , <b>2016</b> , 28, 2801-6	24	124
79	Highly Elastic, Transparent, and Conductive 3D-Printed Ionic Composite Hydrogels. <i>Advanced Functional Materials</i> , <b>2017</b> , 27, 1701807	15.6	122
78	A transparent, self-healing and high-dielectric for low-field-emission stretchable optoelectronics. <i>Nature Materials</i> , <b>2020</b> , 19, 182-188	27	114
77	Integrated soft sensors and elastomeric actuators for tactile machines with kinesthetic sense. <i>Extreme Mechanics Letters</i> , <b>2015</b> , 5, 47-53	3.9	102
76	A Stretchable Multicolor Display and Touch Interface Using Photopatterning and Transfer Printing. <i>Advanced Materials</i> , <b>2016</b> , 28, 9770-9775	24	102
75	Magnetic Assembly of Soft Robots with Hard Components. <i>Advanced Functional Materials</i> , <b>2014</b> , 24, 2180-2187	24	98
74	. <i>IEEE Robotics and Automation Magazine</i> , <b>2016</b> , 23, 55-64	3.4	93
73	Stretchable distributed fiber-optic sensors. <i>Science</i> , <b>2020</b> , 370, 848-852	33.3	90
72	Click chemistry stereolithography for soft robots that self-heal. <i>Journal of Materials Chemistry B</i> , <b>2017</b> , 5, 6249-6255	7.3	88
71	Poroelastic Foams for Simple Fabrication of Complex Soft Robots. <i>Advanced Materials</i> , <b>2015</b> , 27, 6334-40	24	88
70	Stop-Flow Lithography of Colloidal, Glass, and Silicon Microcomponents. <i>Advanced Materials</i> , <b>2008</b> , 20, 4734-4739	24	78
69	An untethered jumping soft robot <b>2014</b> ,		73
68	Electrolytic vascular systems for energy-dense robots. <i>Nature</i> , <b>2019</b> , 571, 51-57	50.4	72

67	Soft optoelectronic sensory foams with proprioception. <i>Science Robotics</i> , <b>2018</b> , 3,	18.6	68
66	Scalable manufacturing of high force wearable soft actuators. <i>Extreme Mechanics Letters</i> , <b>2015</b> , 3, 89-104,	9	66
65	Using Explosions to Power a Soft Robot. <i>Angewandte Chemie</i> , <b>2013</b> , 125, 2964-2968	3.6	66
64	Biomimetic silicification of 3D polyamine-rich scaffolds assembled by direct ink writing. <i>Soft Matter</i> , <b>2006</b> , 2, 205-209	3.6	66
63	Flexible and stretchable sensors for fluidic elastomer actuated soft robots. <i>MRS Bulletin</i> , <b>2017</b> , 42, 138-142	60	
62	Bio-inspired Design and Additive Manufacturing of Soft Materials, Machines, Robots, and Haptic Interfaces. <i>Angewandte Chemie - International Edition</i> , <b>2019</b> , 58, 11182-11204	16.4	58
61	Using "click-e-bricks" to make 3D elastomeric structures. <i>Advanced Materials</i> , <b>2014</b> , 26, 5991-9	24	58
60	Autonomic perspiration in 3D-printed hydrogel actuators. <i>Science Robotics</i> , <b>2020</b> , 5,	18.6	56
59	Control of soft machines using actuators operated by a Braille display. <i>Lab on A Chip</i> , <b>2014</b> , 14, 189-99	7.2	56
58	Influence of surface traction on soft robot undulation. <i>International Journal of Robotics Research</i> , <b>2013</b> , 32, 1577-1584	5.7	55
57	Stretchable Optical Fibers: Threads for Strain-Sensitive Textiles. <i>Advanced Materials Technologies</i> , <b>2017</b> , 2, 1700087	6.8	42
56	Designing colloidal suspensions for directed materials assembly. <i>Current Opinion in Colloid and Interface Science</i> , <b>2011</b> , 16, 71-79	7.6	42
55	Hierarchical chemomechanical encoding of multi-responsive hydrogel actuators via 3D printing. <i>Journal of Materials Chemistry A</i> , <b>2019</b> , 7, 15395-15403	13	40
54	Elastomeric Tiles for the Fabrication of Inflatable Structures. <i>Advanced Functional Materials</i> , <b>2014</b> , 24, 5541-5549	15.6	40
53	Patient-specific design of a soft occluder for the left atrial appendage. <i>Nature Biomedical Engineering</i> , <b>2018</b> , 2, 8-16	19	38
52	3D printable tough silicone double networks. <i>Nature Communications</i> , <b>2020</b> , 11, 4000	17.4	38
51	Direct Ink Writing of Silicon Carbide for Microwave Optics. <i>Advanced Engineering Materials</i> , <b>2016</b> , 18, 39-45	3.5	37
50	Dynamic photovoltaic building envelopes for adaptive energy and comfort management. <i>Nature Energy</i> , <b>2019</b> , 4, 671-682	62.3	36

49	Optical Lace for Synthetic Afferent Neural Networks. <i>Science Robotics</i> , <b>2019</b> , 4,	18.6	33
48	Elastomeric passive transmission for autonomous force-velocity adaptation applied to 3D-printed prosthetics. <i>Science Robotics</i> , <b>2018</b> , 3,	18.6	31
47	3D Printing Soft Materials: What Is Possible?. <i>Soft Robotics</i> , <b>2015</b> , 2, 3-6	9.2	26
46	Digital light processing of liquid crystal elastomers for self-sensing artificial muscles. <i>Science Advances</i> , <b>2021</b> , 7,	14.3	26
45	Sculpting Soft Machines. <i>Soft Robotics</i> , <b>2016</b> , 3, 101-108	9.2	23
44	A Deformable Interface for Human Touch Recognition Using Stretchable Carbon Nanotube Dielectric Elastomer Sensors and Deep Neural Networks. <i>Soft Robotics</i> , <b>2019</b> , 6, 611-620	9.2	17
43	Shaping the future of robotics through materials innovation. <i>Nature Materials</i> , <b>2021</b> , 20, 1582-1587	27	17
42	Fiber Embroidery of Self-Sensing Soft Actuators. <i>Biomimetics</i> , <b>2018</b> , 3,	3.7	16
41	3D Printing of Viscoelastic Suspensions via Digital Light Synthesis for Tough Nanoparticle-Elastomer Composites. <i>Advanced Materials</i> , <b>2020</b> , 32, e2001646	24	15
40	Simple Synthesis of Elastomeric Photomechanical Switches That Self-Heal. <i>Macromolecular Rapid Communications</i> , <b>2019</b> , 40, e1800815	4.8	15
39	. <i>IEEE Robotics and Automation Letters</i> , <b>2019</b> , 4, 277-284	4.2	15
38	Analog modeling of Worm-Like Chain molecules using macroscopic beads-on-a-string. <i>Physical Chemistry Chemical Physics</i> , <b>2012</b> , 14, 9041-6	3.6	14
37	Rapid 3D Printing of Electrohydraulic (HASEL) Tentacle Actuators. <i>Advanced Functional Materials</i> , <b>2020</b> , 30, 2005244	15.6	14
36	Towards enduring autonomous robots via embodied energy.. <i>Nature</i> , <b>2022</b> , 602, 393-402	50.4	13
35	Optical stereolithography of antifouling zwitterionic hydrogels. <i>Journal of Materials Chemistry B</i> , <b>2019</b> , 7, 2855-2864	7.3	12
34	Compliant Buckled Foam Actuators and Application in Patient-Specific Direct Cardiac Compression. <i>Soft Robotics</i> , <b>2018</b> , 5, 99-108	9.2	12
33	Air-powered soft robots for K-12 classrooms <b>2013</b> ,		11
32	Curvature control of soft orthotics via low cost solid-state optics <b>2016</b> ,		10

31	Underactuated fluidic control of a continuous multistable membrane. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2020</b> , 117, 5217-5221	11.5	9
30	A variable shape and variable stiffness controller for haptic virtual interactions <b>2018</b> ,		9
29	Structural evolution of cuboidal granular media. <i>Soft Matter</i> , <b>2012</b> , 8, 4795	3.6	9
28	Untethered Stretchable Displays for Tactile Interaction. <i>Soft Robotics</i> , <b>2019</b> , 6, 142-149	9.2	9
27	Leveraging fluid resistance in soft robots <b>2018</b> ,		8
26	Energy for Biomimetic Robots: Challenges and Solutions. <i>Soft Robotics</i> , <b>2014</b> , 1, 106-109	9.2	8
25	Titelbild: Soft Robotics for Chemists (Angew. Chem. 8/2011). <i>Angewandte Chemie</i> , <b>2011</b> , 123, 1765-1765	3.6	8
24	Elastomeric Haptic Devices for Virtual and Augmented Reality. <i>Advanced Functional Materials</i> , <b>2021</b> , 31, 2009364	15.6	7
23	Stereolithography for Personalized Left Atrial Appendage Occluders. <i>Advanced Materials Technologies</i> , <b>2018</b> , 3, 1800233	6.8	6
22	Configurable Tendon Routing in a 3D-printed Soft Actuator for Improved Locomotion in a Multi-Legged Robot <b>2019</b> ,		4
21	Fluid-driven intrinsically soft robots <b>2019</b> , 61-84		4
20	Valveless microliter combustion for densely packed arrays of powerful soft actuators. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2021</b> , 118,	11.5	4
19	Mechanical Model of Globular Transition in Polymers. <i>ChemPlusChem</i> , <b>2015</b> , 80, 37-41	2.8	3
18	High-Bandwidth Nonlinear Control for Soft Actuators with Recursive Network Models. <i>Springer Proceedings in Advanced Robotics</i> , <b>2021</b> , 589-599	0.6	3
17	Selective Mineralization of Tough Hydrogel Lumens for Simulating Arterial Plaque . <i>Advanced Engineering Materials</i> , <b>2017</b> , 19, 1600591	3.5	2
16	Bioinspiriertes Design und additive Fertigung von weichen Materialien, Maschinen, Robotern und haptischen Schnittstellen. <i>Angewandte Chemie</i> , <b>2019</b> , 131, 11300-11324	3.6	2
15	3D Printed Pyroelectric Lithium-Niobate High Voltages Source with Pull-in Regulated Output <b>2020</b> ,		2
14	Stretchable transducers for kinesthetic interactions in virtual reality <b>2017</b> ,		2

13	Soft Robotics: Poroelastic Foams for Simple Fabrication of Complex Soft Robots (Adv. Mater. 41/2015). <i>Advanced Materials</i> , <b>2015</b> , 27, 6333-6333	24	2
12	Making bioinspired 3D-printed autonomic perspiring hydrogel actuators. <i>Nature Protocols</i> , <b>2021</b> , 16, 2068-2087	18.8	2
11	Resilient Task Planning and Execution for Reactive Soft Robots <b>2019</b> ,		1
10	3D Microperiodic Hydrogel Scaffolds for Robust Neuronal Cultures. <i>Advanced Functional Materials</i> , <b>2011</b> , 21, 46-46	15.6	1
9	Polymer interdigitated pillar electrostatic (PIPE) actuators.. <i>Microsystems and Nanoengineering</i> , <b>2022</b> , 8, 18	7.7	1
8	Acoustophoretic Liquefaction For 3D Printing Ultrahigh Viscosity Nanoparticle Suspensions. <i>Advanced Materials</i> , <b>2021</b> , e2106183	24	1
7	Addressing sensor drift in a proprioceptive optical foam system <b>2019</b> ,		1
6	The new material science of robots. <i>Current Opinion in Solid State and Materials Science</i> , <b>2021</b> , 25, 1008942		1
5	Pump Up the Jam: Granular Media as a Quasi-Hydraulic Fluid for Independent Control Over Isometric and Isotonic Actuation.. <i>Advanced Science</i> , <b>2022</b> , e2104402	13.6	1
4	Gait Synthesis for Modular Soft Robots. <i>Springer Proceedings in Advanced Robotics</i> , <b>2017</b> , 669-678	0.6	
3	Materials for 3D Printing Cardiovascular Devices <b>2018</b> , 33-59		
2	Cover Picture: Soft Robotics for Chemists (Angew. Chem. Int. Ed. 8/2011). <i>Angewandte Chemie - International Edition</i> , <b>2011</b> , 50, 1727-1727	16.4	
1	Electrohydraulic Tentacle Actuators: Rapid 3D Printing of Electrohydraulic (HASEL) Tentacle Actuators (Adv. Funct. Mater. 40/2020). <i>Advanced Functional Materials</i> , <b>2020</b> , 30, 2070266	15.6	