## Direct 3D Printing of Highly Anisotropic, Flexible, Cons Multidirectional Proprioception in Soft Robots

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**Citation Report** 

#	Article	IF	CITATIONS
1	Shape Memory Polyurethane Microcapsules with Active Deformation. ACS Applied Materials & Interfaces, 2020, 12, 47059-47064.	4.0	31
2	Wearable Temperature Sensors with Enhanced Sensitivity by Engineering Microcrack Morphology in PEDOT:PSS–PDMS Sensors. ACS Applied Materials & Interfaces, 2020, 12, 36578-36588.	4.0	93
3	Characterizing the Electrical Properties of Anisotropic, 3D-Printed Conductive Sheets for Sensor Applications. IEEE Sensors Journal, 2020, 20, 14218-14227.	2.4	17
4	Mixed-mode fracture behavior of 3D-printed PLA with zigzag filling. Green Materials, 2021, 9, 29-36.	1.1	8
5	A Review of Extrusion-Based 3D Printing for the Fabrication of Electro- and Biomechanical Sensors. IEEE Sensors Journal, 2021, 21, 12900-12912.	2.4	49
6	Anisotropic conductive networks for multidimensional sensing. Materials Horizons, 2021, 8, 2615-2653.	6.4	30
7	A Review on Materials and Technologies for Organic Largeâ€Area Electronics. Advanced Materials Technologies, 2021, 6, 2001016.	3.0	27
8	Synergy of Porous Structure and Microstructure in Piezoresistive Material for High-Performance and Flexible Pressure Sensors. ACS Applied Materials & amp; Interfaces, 2021, 13, 19211-19220.	4.0	123
9	Effects of 3D Printing-Line Directions for Stretchable Sensor Performances. Materials, 2021, 14, 1791.	1.3	10
10	Recent Advances of 4D Printing Technologies Toward Soft Tactile Sensors. Frontiers in Materials, 2021, 8, .	1.2	21
11	A Wearable Sensor Based on Gold Nanowires/Textile and Its Integrated Smart Glove for Motion Monitoring and Gesture Expression. Energy Technology, 2021, 9, 2100166.	1.8	32
12	Recent Progress in 3D Printing of Smart Structures: Classification, Challenges, and Trends. Advanced Intelligent Systems, 2021, 3, 2000271.	3.3	16
13	Reviews on Machine Learning Approaches for Process Optimization in Noncontact Direct Ink Writing. ACS Applied Materials & Interfaces, 2021, 13, 53323-53345.	4.0	27
14	Materials, Electrical Performance, Mechanisms, Applications, and Manufacturing Approaches for Flexible Strain Sensors. Nanomaterials, 2021, 11, 1220.	1.9	35
15	Artificial Intelligence of Things (AIoT) Enabled Virtual Shop Applications Using Selfâ€Powered Sensor Enhanced Soft Robotic Manipulator. Advanced Science, 2021, 8, e2100230.	5.6	138
16	Modelling of Anisotropic Electrical Conduction in Layered Structures 3D-Printed with Fused Deposition Modelling. Sensors, 2021, 21, 3710.	2.1	20
17	Reconfigurable Magnetic Origami Actuators with Onâ€Board Sensing for Guided Assembly. Advanced Materials, 2021, 33, e2008751.	11.1	39
18	3D Printing of Multilayered and Multimaterial Electronics: A Review. Advanced Electronic Materials, 2021, 7, 2100445.	2.6	119

#	Article	IF	CITATIONS
19	Highly Sensitive and Stretchable c-MWCNTs/PPy Embedded Multidirectional Strain Sensor Based on Double Elastic Fabric for Human Motion Detection. Nanomaterials, 2021, 11, 2333.	1.9	12
20	Conductive Polymer Nanocomposites for Stretchable Electronics: Material Selection, Design, and Applications. ACS Applied Materials & Interfaces, 2021, 13, 43831-43854.	4.0	81
21	Integration of sensing and shape-deforming capabilities for a bioinspired soft robot. Composites Part B: Engineering, 2021, 223, 109116.	5.9	31
22	Enabling contactless rapid on-demand debonding and rebonding using hysteresis heating of ferrimagnetic nanoparticles. Materials and Design, 2021, 210, 110076.	3.3	6
23	Ultra-highly stretchable and anisotropic SEBS/F127 fiber films equipped with an adaptive deformable carbon nanotube layer for dual-mode strain sensing. Journal of Materials Chemistry A, 2021, 9, 18294-18305.	5.2	28
24	Novel Resistive Sensor Design Utilizing the Geometric Freedom of Additive Manufacturing. Applied Sciences (Switzerland), 2021, 11, 113.	1.3	15
25	From Bioinspiration to Computer Generation: Developments in Autonomous Soft Robot Design. Advanced Intelligent Systems, 2022, 4, 2100086.	3.3	47
26	Low-entropy structured wearable film sensor with piezoresistive-piezoelectric hybrid effect for 3D mechanical signal screening. Nano Energy, 2021, 90, 106603.	8.2	41
27	Simulation of piezoresistance and deformation behavior of a flexible 3D printed sensor considering the nonlinear mechanical behavior of materials. Sensors and Actuators A: Physical, 2021, 332, 113214.	2.0	10
28	A triple-layer structure flexible sensor based on nano-sintered silver for power electronics with high temperature resistance and high thermal conductivity. Chemical Engineering Journal, 2022, 432, 134431.	6.6	12
29	In-Situ Monitoring of Layer-Wise Fabrication by Electrical Resistance Measurements in 3D Printing. , 2020, , .		0
30	Design of 4D printed shape-changing tracheal stent and remote controlling actuation. International Journal of Smart and Nano Materials, 2021, 12, 375-389.	2.0	46
31	DC Electric Metamaterial Behaviour in Tuned Fused Deposition Modelling Prints. , 2021, , .		1
32	Wireless Readout of Resistive Sensors. IEEE Sensors Journal, 2022, 22, 4235-4245.	2.4	6
33	Paper-based flexible strain and pressure sensor with enhanced mechanical strength and super-hydrophobicity that can work under water. Journal of Materials Chemistry C, 2022, 10, 3908-3918.	2.7	22
34	Highly sensitive, direction-aware, and transparent strain sensor based on oriented electrospun nanofibers for wearable electronic applications. Chemical Engineering Journal, 2022, 435, 135004.	6.6	42
35	An ultra-wide sensing range film strain sensor based on a branch-shaped PAN-based carbon nanofiber and carbon black synergistic conductive network for human motion detection and human–machine interfaces. Journal of Materials Chemistry C, 2022, 10, 6296-6305.	2.7	15
36	Multifunctional Electronic Skins Enable Robots to Safely and Dexterously Interact with Human. Advanced Science, 2022, 9, e2104969.	5.6	31

CITATION REPORT

#	Article	IF	CITATIONS
37	Sustainable Macromolecular Materials in Flexible Electronics. Macromolecular Materials and Engineering, 2022, 307, .	1.7	4
38	Emerging Research in Conductive Materials for Fused Filament Fabrication: A Critical Review. Advanced Engineering Materials, 2022, 24, .	1.6	15
39	Epidermisâ€Like High Performance Wearable Strain Sensor for Fullâ€Range Monitoring of the Human Activities. Macromolecular Materials and Engineering, 2022, 307, .	1.7	10
40	4D printing of electroactive shape-changing composite structures and their programmable behaviors. Composites Part A: Applied Science and Manufacturing, 2022, 157, 106925.	3.8	31
41	Wearable Pressure Sensors Based on MXene/Tissue Papers for Wireless Human Health Monitoring. ACS Applied Materials & Interfaces, 2021, 13, 60531-60543.	4.0	121
42	Electrically, Thermally, and Mechanically Anisotropic Gels with a Wide Operational Temperature Range. Advanced Functional Materials, 2022, 32, .	7.8	9
44	Induction of anisotropic motions in dielectric elastomer actuators by additive manufacturing. , 2022, ,		0
45	Ultra-sensitive, stretchable, and bidirectional wearable strain sensor for human motion detection. Journal of Materials Chemistry C, 2022, 10, 7076-7086.	2.7	13
46	Rational design of self-powered sensors with polymer nanocomposites for human–machine interaction. Chinese Journal of Aeronautics, 2022, 35, 155-177.	2.8	6
47	High-resolution flexible electronic devices by electrohydrodynamic jet printing: From materials toward applications. Science China Materials, 2022, 65, 2089-2109.	3.5	19
48	Unidirectional, highly linear strain sensors with thickness-engineered conductive films for precision control of soft machines. Journal of Materials Chemistry A, 2022, 10, 13673-13684.	5.2	13
49	Soft Pneumatic Actuators: A Review of Design, Fabrication, Modeling, Sensing, Control and Applications. IEEE Access, 2022, 10, 59442-59485.	2.6	72
50	Simple method to construct a directional strain sensor based on d-Mo2CTX@orthotropic textile network structure. Materials Letters, 2022, 323, 132559.	1.3	4
51	Heterogeneous carbon/silicone composite for ultrasensitive anisotropic strain sensor with loading-direction-perception capability. Composites Science and Technology, 2022, 227, 109565.	3.8	7
52	Conductive Compliant Mechanisms: Geometric Tuning of 3d Printed Flexural Sensors. SSRN Electronic Journal, 0, , .	0.4	0
53	3D Printing of Robotic Soft Grippers: Toward Smart Actuation and Sensing. Advanced Materials Technologies, 2022, 7, .	3.0	36
54	Inkjet Printing of Functional Inks for Smart Products. , 0, , .		2
55	A high-sensitivity thin-film MWNT@PDA-AgNP nanocomposite sensor for acquiring microscopic deformations. Composites Science and Technology, 2022, 229, 109689.	3.8	2

CITATION REPORT

# ARTICLE

IF CITATIONS

## 56 基于Te-PEDOT:PSSå∰çƒç"μæœ−™çš"柔性压力/æ,©åº¦ä¼æ"Ÿç³»ç»Ÿ. Zhongguo Kexue Jishu Kexue/ScienttaSinica T⊉chnologic

58	Carbon Nanotubeâ€Based Strain Sensors: Structures, Fabrication, and Applications. Advanced Materials Technologies, 2023, 8, .	3.0	29
59	An ultrasensitive and stretchable strain sensor based on a microcrack structure for motion monitoring. Microsystems and Nanoengineering, 2022, 8, .	3.4	20
60	Printable Carbon Nanotube-Liquid Elastomer-Based Multifunctional Adhesive Sensors for Monitoring Physiological Parameters. ACS Applied Materials & Interfaces, 2022, 14, 45921-45933.	4.0	12
61	Advanced Functional Composite Materials toward E‧kin for Health Monitoring and Artificial Intelligence. Advanced Materials Technologies, 2023, 8, .	3.0	24
62	Electrically conductive and 3D-printable copolymer/MWCNT nanocomposites for strain sensing. Composites Science and Technology, 2023, 232, 109850.	3.8	12
63	Porous AgNWs/Poly(vinylidene fluoride) Composite-Based Flexible Piezoresistive Sensor with High Sensitivity and Wide Pressure Ranges. ACS Applied Materials & Interfaces, 2022, 14, 55119-55129.	4.0	21
64	Advances in Carbon-Based Resistance Strain Sensors. ACS Applied Electronic Materials, 2023, 5, 674-689.	2.0	11
65	Agar-based soft tactile transducer with embedded optical fiber specklegram sensor. Results in Optics, 2023, 10, 100345.	0.9	4
66	Carbon-Based Piezoresistive Polymer Nanocomposites by Extrusion Additive Manufacturing: Process, Material Design, and Current Progress. 3D Printing and Additive Manufacturing, 0, , .	1.4	2
67	Open challenges and future opportunities in fused deposition modeling of composite materials. , 2023, , 289-329.		0
68	Fused deposition modeling of polymer-matrix composites with discrete ceramic fillers. , 2023, , 129-175.		0
69	Fused deposition modeling of composite materials at a glance – supplementary tables. , 2023, , 329-445.		1
70	Screen printing of stretchable silver nanomaterial inks for a stable human–machine interface. Journal of Materials Chemistry C, 2023, 11, 5009-5017.	2.7	2
71	Recent Progress of Tactile and Force Sensors for Human–Machine Interaction. Sensors, 2023, 23, 1868.	2.1	14
72	Ultra-sensitive, Multi-directional Flexible Strain Sensors Based on an MXene Film with Periodic Wrinkles. ACS Applied Materials & Interfaces, 2023, 15, 8345-8354.	4.0	23
73	Recent Advances in Perceptive Intelligence for Soft Robotics. Advanced Intelligent Systems, 2023, 5, .	3.3	7
74	Soft Mechanosensing via 3D Printing: A review. Advanced Intelligent Systems, 2023, 5, .	3.3	3

#	Article		IF	CITATIONS
75	Fabrication Approaches of Soft Electronics. ACS Applied Electronic Materials, 2023, 5,	1376-1393.	2.0	7
76	Preparation of Thermoplastic Polyurethane/Multi-Walled Carbon Nanotubes Composit High Resilience Performance via Fused Filament Fabrication and CO2 Foaming Techniq 2023, 15, 1535.	e Foam with ue. Polymers,	2.0	3
77	3D-printing-assisted flexible pressure sensor with a concentric circle pattern and high s health monitoring. Microsystems and Nanoengineering, 2023, 9, .	ensitivity for	3.4	17
78	Flexible Tactile Sensors Based on 3D Printed Moulds. Lecture Notes in Electrical Engine 421-430.	ering, 2023, ,	0.3	1
79	Exploring Force Sensing With 3-D Printing: A Study on Constriction Resistance and Co Phenomena. , 2023, 7, 1-4.	ntact		1
85	Emerging interactively stretchable electronics with optical and electrical dual-signal fee on structural color materials. Nano Research, 2024, 17, 1837-1855.	edbacks based	5.8	1
98	Advancements in material extrusion based three-dimensional printing of sensors: a rev International Journal on Interactive Design and Manufacturing, 2024, 18, 627-648.	iew.	1.3	2