Mengdi Han

List of Publications by Year
in descending order

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Version: 2024-02-01

92 papers	6,849 citations	50276 46 h-index	60623 81 g-index
108 all docs	108 docs citations	108 times ranked	6409 citing authors

#	Article	IF	Citations
1	Nanomaterials based flexible devices for monitoring and treatment of cardiovascular diseases (CVDs). Nano Research, 2023, 16, 3939-3955.	10.4	5
2	Mechanically Guided Hierarchical Assembly of 3D Mesostructures. Advanced Materials, 2022, 34, e2109416.	21.0	17
3	Self-Powered Tactile Sensor for Gesture Recognition Using Deep Learning Algorithms. ACS Applied Materials & Interfaces, 2022, 14, 25629-25637.	8.0	34
4	Submillimeter-scale multimaterial terrestrial robots. Science Robotics, 2022, 7, .	17.6	57
5	High-density stretchable microelectrode array based on multilayer serpentine interconnections. Journal of Micromechanics and Microengineering, 2022, 32, 084002.	2.6	3
6	Integrated, Transparent Silicon Carbide Electronics and Sensors for Radio Frequency Biomedical Therapy. ACS Nano, 2022, 16, 10890-10903.	14.6	17
7	Design, manufacturing and applications of wearable triboelectric nanogenerators. Nano Energy, 2021, 81, 105627.	16.0	86
8	Wireless, implantable catheter-type oximeter designed for cardiac oxygen saturation. Science Advances, 2021, 7, .	10.3	45
9	Three-dimensional, multifunctional neural interfaces for cortical spheroids and engineered assembloids. Science Advances, 2021, 7, .	10.3	128
10	Portable and wearable self-powered systems based on emerging energy harvesting technology. Microsystems and Nanoengineering, 2021, 7, 25.	7.0	194
11	Self-Powered Intelligent Human-Machine Interaction for Handwriting Recognition. Research, 2021, 2021, 4689869.	5.7	21
12	Efficient Manufacturing of Microdome Array for Advanced Electronic and Optical Devicesâ€. , 2021, , .		0
13	Synergistic photoactuation of bilayered spiropyran hydrogels for predictable origami-like shape change. Matter, 2021, 4, 1377-1390.	10.0	57
14	Magnetic, conductive textile for multipurpose protective clothing and hybrid energy harvesting. Applied Physics Letters, 2021, 118, .	3.3	7
15	Wireless multilateral devices for optogenetic studies of individual and social behaviors. Nature Neuroscience, 2021, 24, 1035-1045.	14.8	98
16	Compliant 3D frameworks instrumented with strain sensors for characterization of millimeter-scale engineered muscle tissues. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	30
17	Miniaturized electromechanical devices for the characterization of the biomechanics of deep tissue. Nature Biomedical Engineering, 2021, 5, 759-771.	22.5	65
18	Soft Humanâ€"Machine Interface with Triboelectric Patterns and Archimedes Spiral Electrodes for Enhanced Motion Detection. Advanced Functional Materials, 2021, 31, 2103075.	14.9	26

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19	Mechanics of encapsulated three-dimensional structures for simultaneous sensing of pressure and shear stress. Journal of the Mechanics and Physics of Solids, 2021, 151, 104400.	4.8	10
20	Photocurable bioresorbable adhesives as functional interfaces between flexible bioelectronic devices and soft biological tissues. Nature Materials, 2021, 20, 1559-1570.	27.5	114
21	3D Temporaryâ€Magnetized Soft Robotic Structures for Enhanced Energy Harvesting. Advanced Materials, 2021, 33, e2102691.	21.0	23
22	Battery-free, wireless soft sensors for continuous multi-site measurements of pressure and temperature from patients at risk for pressure injuries. Nature Communications, 2021, 12, 5008.	12.8	83
23	Complex 3D microfluidic architectures formed by mechanically guided compressive buckling. Science Advances, 2021, 7, eabj3686.	10.3	41
24	Nanofabrication approaches for functional three-dimensional architectures. Nano Today, 2020, 30, 100825.	11.9	37
25	Soft Sign Language Interpreter on Your Skin. Matter, 2020, 3, 337-338.	10.0	8
26	Catheter-integrated soft multilayer electronic arrays for multiplexed sensing and actuation during cardiac surgery. Nature Biomedical Engineering, 2020, 4, 997-1009.	22.5	175
27	Wireless sensors for continuous, multimodal measurements at the skin interface with lower limb prostheses. Science Translational Medicine, 2020, 12, .	12.4	93
28	Hybrid energy cells based on triboelectric nanogenerator: From principle to system. Nano Energy, 2020, 75, 104980.	16.0	71
29	The effect of defects on the cyclic behavior of polymeric 3D kirigami structures. Extreme Mechanics Letters, 2020, 36, 100650.	4.1	11
30	Three-dimensional electronic scaffolds for monitoring and regulation of multifunctional hybrid tissues. Extreme Mechanics Letters, 2020, 35, 100634.	4.1	38
31	Self-Powered Multifunctional Electronic Skin for a Smart Anti-Counterfeiting Signature System. ACS Applied Materials & Interfaces, 2020, 12, 22357-22364.	8.0	51
32	Mechanics of buckled serpentine structures formed via mechanics-guided, deterministic three-dimensional assembly. Journal of the Mechanics and Physics of Solids, 2019, 125, 736-748.	4.8	29
33	Multimodal Sensing with a Three-Dimensional Piezoresistive Structure. ACS Nano, 2019, 13, 10972-10979.	14.6	134
34	Buckling and twisting of advanced materials into morphable 3D mesostructures. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 13239-13248.	7.1	81
35	Fabrication and Mechanical Cycling of Polymer Microscale Architectures for 3D MEMS Sensors. Advanced Engineering Materials, 2019, 21, 1801254.	3.5	9
36	Self-powered digital-analog hybrid electronic skin for noncontact displacement sensing. Nano Energy, 2019, 58, 121-129.	16.0	48

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37	Three-dimensional piezoelectric polymer microsystems for vibrational energy harvesting, robotic interfaces and biomedical implants. Nature Electronics, 2019, 2, 26-35.	26.0	322
38	All-in-one self-powered flexible microsystems based on triboelectric nanogenerators. Nano Energy, 2018, 47, 410-426.	16.0	249
39	Two-dimensional materials in functional three-dimensional architectures with applications in photodetection and imaging. Nature Communications, 2018, 9, 1417.	12.8	189
40	Morphable 3D mesostructures and microelectronic devices by multistable buckling mechanics. Nature Materials, 2018, 17, 268-276.	27.5	297
41	Fabrication and Deformation of 3D Multilayered Kirigami Microstructures. Small, 2018, 14, e1703852.	10.0	28
42	Selfâ€Powered Noncontact Electronic Skin for Motion Sensing. Advanced Functional Materials, 2018, 28, 1704641.	14.9	83
43	An analytic model of two-level compressive buckling with applications in the assembly of free-standing 3D mesostructures. Soft Matter, 2018, 14, 8828-8837.	2.7	10
44	Fabric-based self-powered noncontact smart gloves for gesture recognition. Journal of Materials Chemistry A, 2018, 6, 20277-20288.	10.3	36
45	Semiconductor Nanomembrane Materials for High-Performance Soft Electronic Devices. Journal of the American Chemical Society, 2018, 140, 9001-9019.	13.7	34
46	Thin, Millimeter Scale Fingernail Sensors for Thermal Characterization of Nail Bed Tissue. Advanced Functional Materials, 2018, 28, 1801380.	14.9	12
47	Self-powered wireless smart patch for healthcare monitoring. Nano Energy, 2017, 32, 479-487.	16.0	90
48	3D Tunable, Multiscale, and Multistable Vibrational Microâ€Platforms Assembled by Compressive Buckling. Advanced Functional Materials, 2017, 27, 1605914.	14.9	43
49	Flexible fiber-based hybrid nanogenerator for biomechanical energy harvesting and physiological monitoring. Nano Energy, 2017, 38, 43-50.	16.0	201
50	Deterministic assembly of 3D mesostructures in advanced materials via compressive buckling: A short review of recent progress. Extreme Mechanics Letters, 2017, 11, 96-104.	4.1	68
51	A wave-shaped hybrid piezoelectric and triboelectric nanogenerator based on P(VDF-TrFE) nanofibers. Nanoscale, 2017, 9, 1263-1270.	5.6	111
52	Three-dimensional mesostructures as high-temperature growth templates, electronic cellular scaffolds, and self-propelled microrobots. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E9455-E9464.	7.1	129
53	Inorganic semiconducting materials for flexible and stretchable electronics. Npj Flexible Electronics, 2017, 1, .	10.7	144
54	Fingertip-inspired electronic skin based on triboelectric sliding sensing and porous piezoresistive pressure detection. Nano Energy, 2017, 40, 65-72.	16.0	120

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55	Deterministic Integration of Biological and Soft Materials onto 3D Microscale Cellular Frameworks. Advanced Biology, 2017, 1, 1700068.	3.0	18
56	Engineered Elastomer Substrates for Guided Assembly of Complex 3D Mesostructures by Spatially Nonuniform Compressive Buckling. Advanced Functional Materials, 2017, 27, 1604281.	14.9	50
57	Guided Formation of 3D Helical Mesostructures by Mechanical Buckling: Analytical Modeling and Experimental Validation. Advanced Functional Materials, 2016, 26, 2909-2918.	14.9	70
58	Asymmetrical Triboelectric Nanogenerator with Controllable Direct Electrostatic Discharge. Advanced Functional Materials, 2016, 26, 5524-5533.	14.9	43
59	Single-Step Fluorocarbon Plasma Treatment-Induced Wrinkle Structure for High-Performance Triboelectric Nanogenerator. Small, 2016, 12, 229-236.	10.0	134
60	Controlled Mechanical Buckling for Origamiâ€Inspired Construction of 3D Microstructures in Advanced Materials. Advanced Functional Materials, 2016, 26, 2629-2639.	14.9	231
61	Highly compressionâ€tolerant folded carbon nanotube/paper as solidâ€state supercapacitor electrode. Micro and Nano Letters, 2016, 11, 586-590.	1.3	12
62	Integrated self-charging power unit with flexible supercapacitor and triboelectric nanogenerator. Journal of Materials Chemistry A, 2016, 4, 14298-14306.	10.3	117
63	Mechanical assembly of complex, 3D mesostructures from releasable multilayers of advanced materials. Science Advances, 2016, 2, e1601014.	10.3	200
64	A flexible large-area triboelectric generator by low-cost roll-to-roll process for location-based monitoring. Sensors and Actuators A: Physical, 2016, 247, 206-214.	4.1	35
65	Self-Powered Analogue Smart Skin. ACS Nano, 2016, 10, 4083-4091.	14.6	153
66	A single-electrode wearable triboelectric nanogenerator based on conductive & stretchable fabric. , 2016, , .		13
67	Implantable and self-powered blood pressure monitoring based on a piezoelectric thinfilm: Simulated, in vitro and in vivo studies. Nano Energy, 2016, 22, 453-460.	16.0	149
68	A Keyboard-Based r-Shaped Triboelectric Generator for Active Noise-Free Recording. Materials Research Society Symposia Proceedings, 2015, 1782, 29-34.	0.1	0
69	Coupling of Piezoelectric and Triboelectric Effects: from Theoretical Analysis to Experimental Verification. Advanced Electronic Materials, 2015, 1, 1500187.	5.1	50
70	Wafer-level fabrication of a triboelectric energy harvester. , 2015, , .		0
71	Electrification based devices with encapsulated liquid for energy harvesting, multifunctional sensing, and self-powered visualized detection. Journal of Materials Chemistry A, 2015, 3, 7382-7388.	10.3	39
72	A novel discharge system based on jagged electrodes with controllable spacing. , 2015, , .		0

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73	Jagged discharge electrodes powered by triboelectric generator. Micro and Nano Letters, 2015, 10, 537-540.	1.3	2
74	Wearable electrode-free triboelectric generator for harvesting biomechanical energy. Nano Energy, 2015, 12, 19-25.	16.0	127
75	A flexible and implantable piezoelectric generator harvesting energy from the pulsation of ascending aorta: in vitro and in vivo studies. Nano Energy, 2015, 12, 296-304.	16.0	148
76	A cubic triboelectric generator as a self-powered orientation sensor. Science China Technological Sciences, 2015, 58, 842-847.	4.0	16
77	A high-efficiency transparent electrification-based generator for harvesting droplet energy. , 2015, , .		5
78	Thermal Conductivity of Graphene Nanoribbons with Regular Isotopic Modification. Journal of Computational and Theoretical Nanoscience, 2014, 11, 348-352.	0.4	6
79	Note: A cubic electromagnetic harvester that convert vibration energy from all directions. Review of Scientific Instruments, 2014, 85, 076109.	1.3	9
80	An unmovable single-layer triboloelectric generator driven by sliding friction. Nano Energy, 2014, 9, 401-407.	16.0	18
81	Design and Fabrication of Integrated Magnetic MEMS Energy Harvester for Low Frequency Applications. Journal of Microelectromechanical Systems, 2014, 23, 204-212.	2.5	82
82	Springless cubic harvester for converting three dimensional vibration energy. , 2014, , .		5
83	Analysis of an in-plane electromagnetic energy harvester with integrated magnet array. Sensors and Actuators A: Physical, 2014, 219, 38-46.	4.1	29
84	Single-friction-surface triboelectric generator with human body conduit. Applied Physics Letters, 2014, 104, .	3.3	47
85	Low frequency wide bandwidth MEMS energy harvester based on spiral-shaped PVDF cantilever. Science China Technological Sciences, 2014, 57, 1068-1072.	4.0	34
86	Fabrication of silicon hierarchical nanopillar arrays based on nanosphere lithography. Micro and Nano Letters, 2014, 9, 655-659.	1.3	3
87	Magnetic-assisted triboelectric nanogenerators as self-powered visualized omnidirectional tilt sensing system. Scientific Reports, 2014, 4, 4811.	3.3	89
88	Low-frequency wide-band hybrid energy harvester based on piezoelectric and triboelectric mechanism. Science China Technological Sciences, 2013, 56, 1835-1841.	4.0	66
89	A transparent single-friction-surface triboelectric generator and self-powered touch sensor. Energy and Environmental Science, 2013, 6, 3235.	30.8	367
90	r-Shaped Hybrid Nanogenerator with Enhanced Piezoelectricity. ACS Nano, 2013, 7, 8554-8560.	14.6	225

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91	Investigation and characterization of an arc-shaped piezoelectric generator. Science China Technological Sciences, 2013, 56, 2636-2641.	4.0	9
92	Self-powered flexible printed circuit board with integrated triboelectric generator. Nano Energy, 2013, 2, 1101-1106.	16.0	108