Chi Zhang

List of Publications by Year
in descending order

136 papers	9,775 citations	28274 55 h-index	38395 95 g-index
137 all docs	137 docs citations	137 times ranked	5556 citing authors

#	Article	IF	Citations
1	Investigating the effect of nanoscale triboelectrification on nanofriction in insulators. Nano Energy, 2022, 91, 106620.	16.0	7
2	Triboelectric Nanogenerators as Active Tactile Stimulators for Multifunctional Sensing and Artificial Synapses. Sensors, 2022, 22, 975.	3.8	12
3	Achieving an ultrahigh direct-current voltage of 130 V by semiconductor heterojunction power generation based on the tribovoltaic effect. Energy and Environmental Science, 2022, 15, 2366-2373.	30.8	52
4	Recent Progress of Switching Power Management for Triboelectric Nanogenerators. Sensors, 2022, 22, 1668.	3.8	15
5	Raindrop energy-powered autonomous wireless hyetometer based on liquidâ€"solid contact electrification. Microsystems and Nanoengineering, 2022, 8, 30.	7.0	33
6	Semiconductor Contactâ€Electrificationâ€Dominated Tribovoltaic Effect for Ultrahigh Power Generation. Advanced Materials, 2022, 34, e2200146.	21.0	52
7	Broadband vibration energy powered autonomous wireless frequency monitoring system based on triboelectric nanogenerators. Nano Energy, 2022, 98, 107209.	16.0	40
8	Electric-Field-Resonance-Based Wireless Triboelectric Nanogenerators and Sensors. ACS Applied Materials & Interfaces, 2022, 14, 794-804.	8.0	18
9	An ultraweak mechanical stimuli actuated single electrode triboelectric nanogenerator with high energy conversion efficiency. Nanoscale, 2022, 14, 7906-7912.	5.6	3
10	Self-Powered and Autonomous Vibrational Wake-Up System Based on Triboelectric Nanogenerators and MEMS Switch. Sensors, 2022, 22, 3752.	3.8	11
11	Friction-Dominated Carrier Excitation and Transport Mechanism for GaN-Based Direct-Current Triboelectric Nanogenerators. ACS Applied Materials & Interfaces, 2022, 14, 24020-24027.	8.0	33
12	Frequency band broadening and charge density enhancement of a vibrational triboelectric nanogenerator with two stoppers. Nano Energy, 2022, 99, 107427.	16.0	24
13	Overview of Human Kinetic Energy Harvesting and Application. ACS Applied Energy Materials, 2022, 5, 7091-7114.	5.1	18
14	Composite film with hollow hierarchical silica/perfluoropolyether filler and surface etching for performance enhanced triboelectric nanogenerators. Chemical Engineering Journal, 2022, 446, 137263.	12.7	25
15	Selfâ€Powered Nonâ€Contact Motion Vector Sensor for Multifunctional Humanâ€"Machine Interface. Small Methods, 2022, 6, .	8.6	21
16	Ferromagneticâ€Based Chargeâ€Accumulation Triboelectric Nanogenerator With Ultrahigh Surface Charge Density. Small, 2022, 18, .	10.0	11
17	Tribo-thermoelectric and tribovoltaic coupling effect at metal-semiconductor interface. Materials Today Physics, 2021, 16, 100295.	6.0	45
18	Dual Mode Rotary Triboelectric Nanogenerator for Collecting Kinetic Energy from Bicycle Brake. Advanced Energy and Sustainability Research, 2021, 2, 2000113.	5.8	19

#	Article	IF	Citations
19	Comparison of applied torque and energy conversion efficiency between rotational triboelectric nanogenerator and electromagnetic generator. IScience, 2021, 24, 102318.	4.1	32
20	MXene based mechanically and electrically enhanced film for triboelectric nanogenerator. Nano Research, 2021, 14, 4833-4840.	10.4	51
21	Frequency Band Characteristics of a Triboelectric Nanogenerator and Ultra-Wide-Band Vibrational Energy Harvesting. ACS Applied Materials & Interfaces, 2021, 13, 26084-26092.	8.0	53
22	Effects of interfacial acidâ€“base on the performance of contactâ€“separation mode triboelectric nanogenerator. Materials Today Energy, 2021, 20, 100686.	4.7	8
23	Bioinspired designs and biomimetic applications of triboelectric nanogenerators. Nano Energy, 2021, 84, 105865.	16.0	53
24	Breeze-Wind-Energy-Powered Autonomous Wireless Anemometer Based on Rolling Contact-Electrification. ACS Energy Letters, 2021, 6, 2343-2350.	17.4	96
25	TENG-Bot: Triboelectric nanogenerator powered soft robot made of uni-directional dielectric elastomer. Nano Energy, 2021, 85, 106012.	16.0	55
26	<scp>Oneâ€stop</scp> fabrication of triboelectric nanogenerator based on <scp>3D</scp> printing. EcoMat, 2021, 3, e12130.	11.9	23
27	Scalable fabrication of stretchable and washable textile triboelectric nanogenerators as constant power sources for wearable electronics. Nano Energy, 2021, 88, 106247.	16.0	66
28	A Near-Zero Power Triboelectric Wake-Up System for Autonomous Beaufort Scale of Wind Force Monitoring. Nanoenergy Advances, 2021, 1, 121-130.	7.7	14
29	Multidimensional Force Sensors Based on Triboelectric Nanogenerators for Electronic Skin. ACS Applied Materials & Interfaces, 2021, 13, 56320-56328.	8.0	30
30	A Leaf-Shaped Triboelectric Nanogenerator for Multiple Ambient Mechanical Energy Harvesting. IEEE Transactions on Power Electronics, 2020, 35, 25-32.	7.9	36
31	Conjunction of triboelectric nanogenerator with induction coils as wireless power sources and self-powered wireless sensors. Nature Communications, 2020, 11, 58.	12.8	114
32	Spherical triboelectric nanogenerator integrated with power management module for harvesting multidirectional water wave energy. Energy and Environmental Science, 2020, 13, 277-285.	30.8	252
33	Dynamic wear sensor array based on single-electrode triboelectric nanogenerators. Nano Energy, 2020, 68, 104303.	16.0	18
34	Self-Powered Tactile Sensor with Learning and Memory. ACS Nano, 2020, 14, 1390-1398.	14.6	107
35	Overview of Power Management for Triboelectric Nanogenerators. Advanced Intelligent Systems, 2020, 2, 1900129.	6.1	40
36	Overview of micro/nano-wind energy harvesters and sensors. Nanoscale, 2020, 12, 23929-23944.	5.6	38

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37	Material Recognition Sensor Array by Electrostatic Induction and Triboelectric Effects. Advanced Materials Technologies, 2020, 5, 2000641.	5.8	15
38	Triboelectric effect-modulated varifocal liquid lens. Microsystems and Nanoengineering, 2020, 6, 61.	7.0	18
39	Network Topology Optimization of Triboelectric Nanogenerators for Effectively Harvesting Ocean Wave Energy. IScience, 2020, 23, 101848.	4.1	29
40	Vibrational Triboelectric Nanogenerator-Based Multinode Self-Powered Sensor Network for Machine Fault Detection. IEEE/ASME Transactions on Mechatronics, 2020, 25, 2188-2196.	5.8	35
41	Highâ€Resolution Monolithic Integrated Tribotronic InGaZnO Thinâ€Film Transistor Array for Tactile Detection. Advanced Functional Materials, 2020, 30, 2002613.	14.9	30
42	Sustained energy harvesting from ambient humidity. Science Bulletin, 2020, 65, 1783-1784.	9.0	0
43	Flexible Drug Release Device Powered by Triboelectric Nanogenerator. Advanced Functional Materials, 2020, 30, 1909886.	14.9	60
44	Nanoscale triboelectrification gated transistor. Nature Communications, 2020, 11, 1054.	12.8	15
45	Wind-driven self-powered wireless environmental sensors for Internet of Things at long distance. Nano Energy, 2020, 73, 104819.	16.0	58
46	Tribovoltaic Effect on Metalâ€"Semiconductor Interface for Directâ€Current Lowâ€Impedance Triboelectric Nanogenerators. Advanced Energy Materials, 2020, 10, 1903713.	19.5	115
47	Intrinsically Stretchable Organic-Tribotronic-Transistor for Tactile Sensing. Research, 2020, 2020, 1398903.	5.7	30
48	Triboelectric nanogenerators enabled sensing and actuation for robotics. Nano Energy, 2019, 65, 104005.	16.0	62
49	Triboelectric Effect-Driven Liquid Metal Actuators. Soft Robotics, 2019, 6, 664-670.	8.0	18
50	Torus structured triboelectric nanogenerator array for water wave energy harvesting. Nano Energy, 2019, 58, 499-507.	16.0	109
51	Triboelectric micromotors actuated by ultralow frequency mechanical stimuli. Nature Communications, 2019, 10, 2309.	12.8	112
52	Micro/nano-structures-enhanced triboelectric nanogenerators by femtosecond laser direct writing. Nano Energy, 2019, 62, 638-644.	16.0	121
53	Small-Sized, Lightweight, and Flexible Triboelectric Nanogenerator Enhanced by PTFE/PDMS Nanocomposite Electret. ACS Applied Materials & Interfaces, 2019, 11, 20370-20377.	8.0	75
54	Remarkable merits of triboelectric nanogenerator than electromagnetic generator for harvesting small-amplitude mechanical energy. Nano Energy, 2019, 61, 111-118.	16.0	144

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55	Self-powered intelligent buoy system by water wave energy for sustainable and autonomous wireless sensing and data transmission. Nano Energy, 2019, 61, 1-9.	16.0	153
56	Recent progress in piezotronics and tribotronics. Nanotechnology, 2019, 30, 042001.	2.6	29
57	A self-powered and high-voltage-isolated organic optical communication system based on triboelectric nanogenerators and solar cells. Nano Energy, 2019, 56, 391-399.	16.0	34
58	Triboelectric Nanogenerator Networks Integrated with Power Management Module for Water Wave Energy Harvesting. Advanced Functional Materials, 2019, 29, 1807241.	14.9	190
59	Tribotronics for Active Mechanosensation and Selfâ€Powered Microsystems. Advanced Functional Materials, 2019, 29, 1808114.	14.9	35
60	Monocharged Electret Generator for Wearable Energy Harvesting Applications. Advanced Sustainable Systems, 2018, 2, 1700178.	5.3	24
61	An alginate film-based degradable triboelectric nanogenerator. RSC Advances, 2018, 8, 6719-6726.	3.6	64
62	Stretchable and Tailorable Triboelectric Nanogenerator Constructed by Nanofibrous Membrane for Energy Harvesting and Selfâ€Powered Biomechanical Monitoring. Advanced Materials Technologies, 2018, 3, 1700370.	5.8	47
63	Self-Powered Electrostatic Adsorption Face Mask Based on a Triboelectric Nanogenerator. ACS Applied Materials & Interfaces, 2018, 10, 7126-7133.	8.0	157
64	Flexure hinges based triboelectric nanogenerator by 3D printing. Extreme Mechanics Letters, 2018, 20, 38-45.	4.1	31
65	Lithium-Ion Batteries: Charged by Triboelectric Nanogenerators with Pulsed Output Based on the Enhanced Cycling Stability. ACS Applied Materials & Interfaces, 2018, 10, 8676-8684.	8.0	18
66	A Selfâ€Powered Lantern Based on a Triboelectricâ€“Photovoltaic Hybrid Nanogenerator. Advanced Materials Technologies, 2018, 3, 1700371.	5.8	26
67	Electric Field Stiffening Effect in c-Oriented Aluminum Nitride Piezoelectric Thin Films. ACS Applied Materials & Interfaces, 2018, 10, 1819-1827.	8.0	18
68	Stretchable Triboelectricâ€“Photonic Smart Skin for Tactile and Gesture Sensing. Advanced Materials, 2018, 30, e1800066.	21.0	205
69	Au nanocomposite enhanced electret film for triboelectric nanogenerator. Nano Research, 2018, 11, 3096-3105.	10.4	89
70	Theoretical Study of Slidingâ€Electrificationâ€Gated Tribotronic Transistors and Logic Device. Advanced Electronic Materials, 2018, 4, 1700337.	5.1	12
71	Compressible hexagonal-structured triboelectric nanogenerators for harvesting tire rotation energy. Extreme Mechanics Letters, 2018, 18, 1-8.	4.1	96
72	Recent Advances in Stretchable Supercapacitors Enabled by Lowâ€Dimensional Nanomaterials. Small, 2018, 14, e1803976.	10.0	52

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73	Tribotronic bipolar junction transistor for mechanical frequency monitoring and use as touch switch. Microsystems and Nanoengineering, 2018, 4, 25.	7.0	16
74	Mechanosensation-Active Matrix Based on Direct-Contact Tribotronic Planar Graphene Transistor Array. ACS Nano, 2018, 12, 9381-9389.	14.6	64
75	Polymer nanocomposite-enabled high-performance triboelectric nanogenerator with self-healing capability. RSC Advances, 2018, 8, 30661-30668.	3.6	28
76	Screen-Printed Washable Electronic Textiles as Self-Powered Touch/Gesture Tribo-Sensors for Intelligent Humanâ€"Machine Interaction. ACS Nano, 2018, 12, 5190-5196.	14.6	386
77	Liquid Metal Gated Tribotronic Transistors as an Electronic Gradienter for Angle Measurement. Advanced Electronic Materials, 2018, 4, 1800269.	5.1	14
78	Triboelectric Nanogenerators. Micro/Nano Technologies, 2018, , 1335-1376.	0.1	20
79	Selfâ€Powered Hall Vehicle Sensors Based on Triboelectric Nanogenerators. Advanced Materials Technologies, 2018, 3, 1800140.	5.8	32
80	Improved Triboelectric Nanogenerator Output Performance through Polymer Nanocomposites Filled with Coreâ€"shell-Structured Particles. ACS Applied Materials & Interfaces, 2018, 10, 25683-25688.	8.0	47
81	Ultrahigh charge density realized by charge pumping at ambient conditions for triboelectric nanogenerators. Nano Energy, 2018, 49, 625-633.	16.0	261
82	Soft Tubular Triboelectric Nanogenerator for Biomechanical Energy Harvesting. Advanced Sustainable Systems, 2018, 2, 1800081.	5.3	30
83	Interdigitated Electrodeâ€Based Triboelectric Sliding Sensor for Security Monitoring. Advanced Materials Technologies, 2018, 3, 1800189.	5.8	50
84	Efficient Storing Energy Harvested by Triboelectric Nanogenerators Using a Safe and Durable Allâ€Solidâ€State Sodiumâ€Ion Battery. Advanced Science, 2017, 4, 1700072.	11.2	140
85	Universal power management strategy for triboelectric nanogenerator. Nano Energy, 2017, 37, 168-176.	16.0	312
86	Flexible transparent tribotronic transistor for active modulation of conventional electronics. Nano Energy, 2017, 31, 533-540.	16.0	62
87	Tribotronic triggers and sequential logic circuits. Nano Research, 2017, 10, 3534-3542.	10.4	19
88	Tribotronic Tuning Diode for Active Analog Signal Modulation. ACS Nano, 2017, 11, 882-888.	14.6	30
89	Embedded Triboelectric Active Sensors for Real-Time Pneumatic Monitoring. ACS Applied Materials & Interfaces, 2017, 9, 32352-32358.	8.0	22
90	Tribotronic transistor sensor for enhanced hydrogen detection. Nano Research, 2017, 10, 3857-3864.	10.4	12

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91	Flexible Organic Tribotronic Transistor for Pressure and Magnetic Sensing. ACS Nano, 2017, 11, 11566-11573.	14.6	74
92	Integrated triboelectric nanogenerator array based on air-driven membrane structures for water wave energy harvesting. Nano Energy, 2017, 31, 351-358.	16.0	162
93	Triboelectric Nanogenerators. Toxinology, 2017, , 1-42.	0.2	0
94	MoS₂ Tribotronic Transistor for Smart Tactile Switch. Advanced Functional Materials, 2016, 26, 2104-2109.	14.9	96
95	Tribotronic Phototransistor for Enhanced Photodetection and Hybrid Energy Harvesting. Advanced Functional Materials, 2016, 26, 2554-2560.	14.9	51
96	A 2D resonant MEMS scanner with an ultra-compact wedge-like multiplied angle amplification for miniature LIDAR application. , 2016, , .		8
97	Multilayered electret films based triboelectric nanogenerator. Nano Research, 2016, 9, 1442-1451.	10.4	142
98	Tribotronic Enhanced Photoresponsivity of a MoS₂ Phototransistor. Advanced Science, 2016, 3, 1500419.	11.2	77
99	Tribotronicsâ€"A new field by coupling triboelectricity and semiconductor. Nano Today, 2016, 11, 521-536.	11.9	110
100	Tribotronic Transistor Array as an Active Tactile Sensing System. ACS Nano, 2016, 10, 10912-10920.	14.6	112
101	Efficient Charging of Liâ€Ion Batteries with Pulsed Output Current of Triboelectric Nanogenerators. Advanced Science, 2016, 3, 1500255.	11.2	122
102	Flexible Organic Tribotronic Transistor Memory for a Visible and Wearable Touch Monitoring System. Advanced Materials, 2016, 28, 106-110.	21.0	98
103	Multilayer wavy-structured robust triboelectric nanogenerator for harvesting water wave energy. Nano Energy, 2016, 22, 87-94.	16.0	154
104	A ball-bearing structured triboelectric nanogenerator for nondestructive damage and rotating speed measurement. Nanotechnology, 2016, 27, 085401.	2.6	44
105	Liquidâ€Metal Electrode for Highâ€Performance Triboelectric Nanogenerator at an Instantaneous Energy Conversion Efficiency of 70.6%. Advanced Functional Materials, 2015, 25, 3718-3725.	14.9	427
106	Organic Tribotronic Transistor for Contactâ€Electrificationâ€Gated Lightâ€Emitting Diode. Advanced Functional Materials, 2015, 25, 5625-5632.	14.9	63
107	Removal of Particulate Matter Emissions from a Vehicle Using a Self-Powered Triboelectric Filter. ACS Nano, 2015, 9, 12552-12561.	14.6	133
108	Structural Optimization of Triboelectric Nanogenerator for Harvesting Water Wave Energy. ACS Nano, 2015, 9, 12562-12572.	14.6	192

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109	Triboelectrification induced UV emission from plasmon discharge. Nano Research, 2015, 8, 219-226.	10.4	39
110	Active Microâ€Actuators for Optical Modulation Based on a Planar Sliding Triboelectric Nanogenerator. Advanced Materials, 2015, 27, 719-726.	21.0	93
111	High power triboelectric nanogenerator based on printed circuit board (PCB) technology. Nano Research, 2015, 8, 722-730.	10.4	155
112	Tribotronic Logic Circuits and Basic Operations. Advanced Materials, 2015, 27, 3533-3540.	21.0	61
113	Triboelectric Nanogenerators as a Self-Powered 3D Acceleration Sensor. ACS Applied Materials & Interfaces, 2015, 7, 19076-19082.	8.0	141
114	Enhancing Output Power of Cylindrical Triboelectric Nanogenerators by Segmentation Design and Multilayer Integration. Advanced Functional Materials, 2014, 24, 6684-6690.	14.9	86
115	Complementary power output characteristics of electromagnetic generators and triboelectric generators. Nanotechnology, 2014, 25, 135402.	2.6	64
116	Theoretical Comparison, Equivalent Transformation, and Conjunction Operations of Electromagnetic Induction Generator and Triboelectric Nanogenerator for Harvesting Mechanical Energy. Advanced Materials, 2014, 26, 3580-3591.	21.0	482
117	Harvesting energy from automobile brake in contact and non-contact mode by conjunction of triboelectrication and electrostatic-induction processes. Nano Energy, 2014, 6, 59-65.	16.0	93
118	A power-transformed-and-managed triboelectric nanogenerator and its applications in a self-powered wireless sensing node. Nanotechnology, 2014, 25, 225402.	2.6	89
119	Woven Structured Triboelectric Nanogenerator for Wearable Devices. ACS Applied Materials & Interfaces, 2014, 6, 14695-14701.	8.0	317
120	Piezotronic Effect on ZnO Nanowire Film Based Temperature Sensor. ACS Applied Materials & Interfaces, 2014, 6, 5955-5961.	8.0	53
121	Contact Electrification Field-Effect Transistor. ACS Nano, 2014, 8, 8702-8709.	14.6	123
122	Cover-sheet-based nanogenerator for charging mobile electronics using low-frequency body motion/vibration. Nano Energy, 2014, 9, 121-127.	16.0	95
123	Transparent paper-based triboelectric nanogenerator as a page mark and anti-theft sensor. Nano Research, 2014, 7, 1215-1223.	10.4	81
124	Rotatingâ€Diskâ€Based Directâ€Current Triboelectric Nanogenerator. Advanced Energy Materials, 2014, 4, 1301798.	19.5	180
125	Self-powered velocity and trajectory tracking sensor array made of planar triboelectric nanogenerator pixels. Nano Energy, 2014, 9, 325-333.	16.0	95
126	Experimental research on temperature characteristics of two-dimensional micro scanner. Procedia Engineering, 2010, 5, 568-571.	1.2	1

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127	Study on a Two-Dimensional Scanning Micro-Mirror and Its Application in a MOEMS Target Detector. Sensors, 2010, 10, 6848-6860.	3.8	15
128	Design of space target detection system based on a two-dimensional scanning micro-mirror. , 2009, , .		3
129	A Two-Dimensional Micro Scanner Integrated with a Piezoelectric Actuator and Piezoresistors. Sensors, 2009, 9, 631-644.	3.8	26
130	Piezoresistor design for deflection angles decoupling measurement of two-dimensional MOEMS scanning mirror. , 2007, , .		2
131	An automatic exposure algorithm based on information entropy. , 2006, , .		6
132	Design and Simulation of Electromagnetic Two-Dimensional MOEMS Scanning Mirror. Key Engineering Materials, 0, 483, 185-189.	0.4	1
133	Research on Two-Dimensional Scanning Characteristics of MEMS Resonant Mirror. Key Engineering Materials, 0, 503, 24-28.	0.4	0
134	Fabrication and Packaging of Electromagnetic 2D MEMS Scanning Mirror. Key Engineering Materials, 0, 609-610, 1165-1169.	0.4	0
135	Design and Experiment of Phase Laser Ranging System Based on MEMS Mirror for Scanning Detection. Key Engineering Materials, 0, 645-646, 1099-1104.	0.4	1
136	Multisource Energy Harvester with Coupling Structure and Multiplexing Mechanism. Advanced Materials Interfaces, 0, , 2200468.	3.7	2