

Chi Zhang

List of Publications by Year in descending order

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136
papers

9,775
citations

28190

55
h-index

38300

95
g-index

137
all docs

137
docs citations

137
times ranked

5556
citing authors

#	ARTICLE	IF	CITATIONS
1	Theoretical Comparison, Equivalent Transformation, and Conjunction Operations of Electromagnetic Induction Generator and Triboelectric Nanogenerator for Harvesting Mechanical Energy. <i>Advanced Materials</i> , 2014, 26, 3580-3591.	11.1	482
2	Liquidâ€Metal Electrode for Highâ€Performance Triboelectric Nanogenerator at an Instantaneous Energy Conversion Efficiency of 70.6%. <i>Advanced Functional Materials</i> , 2015, 25, 3718-3725.	7.8	427
3	Screen-Printed Washable Electronic Textiles as Self-Powered Touch/Gesture Tribo-Sensors for Intelligent Humanâ€Machine Interaction. <i>ACS Nano</i> , 2018, 12, 5190-5196.	7.3	386
4	Woven Structured Triboelectric Nanogenerator for Wearable Devices. <i>ACS Applied Materials & Interfaces</i> , 2014, 6, 14695-14701.	4.0	317
5	Universal power management strategy for triboelectric nanogenerator. <i>Nano Energy</i> , 2017, 37, 168-176.	8.2	312
6	Ultrahigh charge density realized by charge pumping at ambient conditions for triboelectric nanogenerators. <i>Nano Energy</i> , 2018, 49, 625-633.	8.2	261
7	Spherical triboelectric nanogenerator integrated with power management module for harvesting multidirectional water wave energy. <i>Energy and Environmental Science</i> , 2020, 13, 277-285.	15.6	252
8	Stretchable Triboelectricâ€Photonic Smart Skin for Tactile and Gesture Sensing. <i>Advanced Materials</i> , 2018, 30, e1800066.	11.1	205
9	Structural Optimization of Triboelectric Nanogenerator for Harvesting Water Wave Energy. <i>ACS Nano</i> , 2015, 9, 12562-12572.	7.3	192
10	Triboelectric Nanogenerator Networks Integrated with Power Management Module for Water Wave Energy Harvesting. <i>Advanced Functional Materials</i> , 2019, 29, 1807241.	7.8	190
11	Rotatingâ€Diskâ€Based Directâ€Current Triboelectric Nanogenerator. <i>Advanced Energy Materials</i> , 2014, 4, 1301798.	10.2	180
12	Integrated triboelectric nanogenerator array based on air-driven membrane structures for water wave energy harvesting. <i>Nano Energy</i> , 2017, 31, 351-358.	8.2	162
13	Self-Powered Electrostatic Adsorption Face Mask Based on a Triboelectric Nanogenerator. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 7126-7133.	4.0	157
14	High power triboelectric nanogenerator based on printed circuit board (PCB) technology. <i>Nano Research</i> , 2015, 8, 722-730.	5.8	155
15	Multilayer wavy-structured robust triboelectric nanogenerator for harvesting water wave energy. <i>Nano Energy</i> , 2016, 22, 87-94.	8.2	154
16	Self-powered intelligent buoy system by water wave energy for sustainable and autonomous wireless sensing and data transmission. <i>Nano Energy</i> , 2019, 61, 1-9.	8.2	153
17	Remarkable merits of triboelectric nanogenerator than electromagnetic generator for harvesting small-amplitude mechanical energy. <i>Nano Energy</i> , 2019, 61, 111-118.	8.2	144
18	Multilayered electret films based triboelectric nanogenerator. <i>Nano Research</i> , 2016, 9, 1442-1451.	5.8	142

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19	Triboelectric Nanogenerators as a Self-Powered 3D Acceleration Sensor. ACS Applied Materials & Interfaces, 2015, 7, 19076-19082.	4.0	141
20	Efficient Storing Energy Harvested by Triboelectric Nanogenerators Using a Safe and Durable All-Solid-State Sodium-Ion Battery. Advanced Science, 2017, 4, 1700072.	5.6	140
21	Removal of Particulate Matter Emissions from a Vehicle Using a Self-Powered Triboelectric Filter. ACS Nano, 2015, 9, 12552-12561.	7.3	133
22	Contact Electrification Field-Effect Transistor. ACS Nano, 2014, 8, 8702-8709.	7.3	123
23	Efficient Charging of Li-Ion Batteries with Pulsed Output Current of Triboelectric Nanogenerators. Advanced Science, 2016, 3, 1500255.	5.6	122
24	Micro/nano-structures-enhanced triboelectric nanogenerators by femtosecond laser direct writing. Nano Energy, 2019, 62, 638-644.	8.2	121
25	Tribovoltaic Effect on Metal-Semiconductor Interface for Direct-Current Low-Impedance Triboelectric Nanogenerators. Advanced Energy Materials, 2020, 10, 1903713.	10.2	115
26	Conjunction of triboelectric nanogenerator with induction coils as wireless power sources and self-powered wireless sensors. Nature Communications, 2020, 11, 58.	5.8	114
27	Tribotronic Transistor Array as an Active Tactile Sensing System. ACS Nano, 2016, 10, 10912-10920.	7.3	112
28	Triboelectric micromotors actuated by ultralow frequency mechanical stimuli. Nature Communications, 2019, 10, 2309.	5.8	112
29	Tribotronics—A new field by coupling triboelectricity and semiconductor. Nano Today, 2016, 11, 521-536.	6.2	110
30	Torus structured triboelectric nanogenerator array for water wave energy harvesting. Nano Energy, 2019, 58, 499-507.	8.2	109
31	Self-Powered Tactile Sensor with Learning and Memory. ACS Nano, 2020, 14, 1390-1398.	7.3	107
32	Flexible Organic Tribotronic Transistor Memory for a Visible and Wearable Touch Monitoring System. Advanced Materials, 2016, 28, 106-110.	11.1	98
33	MoS ₂ Tribotronic Transistor for Smart Tactile Switch. Advanced Functional Materials, 2016, 26, 2104-2109.	7.8	96
34	Compressible hexagonal-structured triboelectric nanogenerators for harvesting tire rotation energy. Extreme Mechanics Letters, 2018, 18, 1-8.	2.0	96
35	Breeze-Wind-Energy-Powered Autonomous Wireless Anemometer Based on Rolling Contact-Electrification. ACS Energy Letters, 2021, 6, 2343-2350.	8.8	96
36	Cover-sheet-based nanogenerator for charging mobile electronics using low-frequency body motion/vibration. Nano Energy, 2014, 9, 121-127.	8.2	95

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37	Self-powered velocity and trajectory tracking sensor array made of planar triboelectric nanogenerator pixels. <i>Nano Energy</i> , 2014, 9, 325-333.	8.2	95
38	Harvesting energy from automobile brake in contact and non-contact mode by conjunction of triboelectrication and electrostatic-induction processes. <i>Nano Energy</i> , 2014, 6, 59-65.	8.2	93
39	Active Micro-Actuators for Optical Modulation Based on a Planar Sliding Triboelectric Nanogenerator. <i>Advanced Materials</i> , 2015, 27, 719-726.	11.1	93
40	A power-transformed-and-managed triboelectric nanogenerator and its applications in a self-powered wireless sensing node. <i>Nanotechnology</i> , 2014, 25, 225402.	1.3	89
41	Au nanocomposite enhanced electret film for triboelectric nanogenerator. <i>Nano Research</i> , 2018, 11, 3096-3105.	5.8	89
42	Enhancing Output Power of Cylindrical Triboelectric Nanogenerators by Segmentation Design and Multilayer Integration. <i>Advanced Functional Materials</i> , 2014, 24, 6684-6690.	7.8	86
43	Transparent paper-based triboelectric nanogenerator as a page mark and anti-theft sensor. <i>Nano Research</i> , 2014, 7, 1215-1223.	5.8	81
44	Tribotronic Enhanced Photoresponsivity of a MoS ₂ Phototransistor. <i>Advanced Science</i> , 2016, 3, 1500419.	5.6	77
45	Small-Sized, Lightweight, and Flexible Triboelectric Nanogenerator Enhanced by PTFE/PDMS Nanocomposite Electret. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 20370-20377.	4.0	75
46	Flexible Organic Tribotronic Transistor for Pressure and Magnetic Sensing. <i>ACS Nano</i> , 2017, 11, 11566-11573.	7.3	74
47	Scalable fabrication of stretchable and washable textile triboelectric nanogenerators as constant power sources for wearable electronics. <i>Nano Energy</i> , 2021, 88, 106247.	8.2	66
48	Complementary power output characteristics of electromagnetic generators and triboelectric generators. <i>Nanotechnology</i> , 2014, 25, 135402.	1.3	64
49	An alginate film-based degradable triboelectric nanogenerator. <i>RSC Advances</i> , 2018, 8, 6719-6726.	1.7	64
50	Mechanosensation-Active Matrix Based on Direct-Contact Tribotronic Planar Graphene Transistor Array. <i>ACS Nano</i> , 2018, 12, 9381-9389.	7.3	64
51	Organic Tribotronic Transistor for Contact-Electrification-Gated Light-Emitting Diode. <i>Advanced Functional Materials</i> , 2015, 25, 5625-5632.	7.8	63
52	Flexible transparent tribotronic transistor for active modulation of conventional electronics. <i>Nano Energy</i> , 2017, 31, 533-540.	8.2	62
53	Triboelectric nanogenerators enabled sensing and actuation for robotics. <i>Nano Energy</i> , 2019, 65, 104005.	8.2	62
54	Tribotronic Logic Circuits and Basic Operations. <i>Advanced Materials</i> , 2015, 27, 3533-3540.	11.1	61

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55	Flexible Drug Release Device Powered by Triboelectric Nanogenerator. <i>Advanced Functional Materials</i> , 2020, 30, 1909886.	7.8	60
56	Wind-driven self-powered wireless environmental sensors for Internet of Things at long distance. <i>Nano Energy</i> , 2020, 73, 104819.	8.2	58
57	TENG-Bot: Triboelectric nanogenerator powered soft robot made of uni-directional dielectric elastomer. <i>Nano Energy</i> , 2021, 85, 106012.	8.2	55
58	Piezotronic Effect on ZnO Nanowire Film Based Temperature Sensor. <i>ACS Applied Materials & Interfaces</i> , 2014, 6, 5955-5961.	4.0	53
59	Frequency Band Characteristics of a Triboelectric Nanogenerator and Ultra-Wide-Band Vibrational Energy Harvesting. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 26084-26092.	4.0	53
60	Bioinspired designs and biomimetic applications of triboelectric nanogenerators. <i>Nano Energy</i> , 2021, 84, 105865.	8.2	53
61	Recent Advances in Stretchable Supercapacitors Enabled by Low-Dimensional Nanomaterials. <i>Small</i> , 2018, 14, e1803976.	5.2	52
62	Achieving an ultrahigh direct-current voltage of 130 V by semiconductor heterojunction power generation based on the tribovoltaic effect. <i>Energy and Environmental Science</i> , 2022, 15, 2366-2373.	15.6	52
63	Semiconductor Contact-Electrification-Dominated Tribovoltaic Effect for Ultrahigh Power Generation. <i>Advanced Materials</i> , 2022, 34, e2200146.	11.1	52
64	Tribotronic Phototransistor for Enhanced Photodetection and Hybrid Energy Harvesting. <i>Advanced Functional Materials</i> , 2016, 26, 2554-2560.	7.8	51
65	MXene based mechanically and electrically enhanced film for triboelectric nanogenerator. <i>Nano Research</i> , 2021, 14, 4833-4840.	5.8	51
66	Interdigitated Electrode-Based Triboelectric Sliding Sensor for Security Monitoring. <i>Advanced Materials Technologies</i> , 2018, 3, 1800189.	3.0	50
67	Stretchable and Tailorable Triboelectric Nanogenerator Constructed by Nanofibrous Membrane for Energy Harvesting and Self-Powered Biomechanical Monitoring. <i>Advanced Materials Technologies</i> , 2018, 3, 1700370.	3.0	47
68	Improved Triboelectric Nanogenerator Output Performance through Polymer Nanocomposites Filled with Core-shell-Structured Particles. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 25683-25688.	4.0	47
69	Tribo-thermoelectric and tribovoltaic coupling effect at metal-semiconductor interface. <i>Materials Today Physics</i> , 2021, 16, 100295.	2.9	45
70	A ball-bearing structured triboelectric nanogenerator for nondestructive damage and rotating speed measurement. <i>Nanotechnology</i> , 2016, 27, 085401.	1.3	44
71	Overview of Power Management for Triboelectric Nanogenerators. <i>Advanced Intelligent Systems</i> , 2020, 2, 1900129.	3.3	40
72	Broadband vibration energy powered autonomous wireless frequency monitoring system based on triboelectric nanogenerators. <i>Nano Energy</i> , 2022, 98, 107209.	8.2	40

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73	Triboelectrification induced UV emission from plasmon discharge. <i>Nano Research</i> , 2015, 8, 219-226.	5.8	39
74	Overview of micro/nano-wind energy harvesters and sensors. <i>Nanoscale</i> , 2020, 12, 23929-23944.	2.8	38
75	A Leaf-Shaped Triboelectric Nanogenerator for Multiple Ambient Mechanical Energy Harvesting. <i>IEEE Transactions on Power Electronics</i> , 2020, 35, 25-32.	5.4	36
76	Tribotronics for Active Mechanosensation and Self-Powered Microsystems. <i>Advanced Functional Materials</i> , 2019, 29, 1808114.	7.8	35
77	Vibrational Triboelectric Nanogenerator-Based Multinode Self-Powered Sensor Network for Machine Fault Detection. <i>IEEE/ASME Transactions on Mechatronics</i> , 2020, 25, 2188-2196.	3.7	35
78	A self-powered and high-voltage-isolated organic optical communication system based on triboelectric nanogenerators and solar cells. <i>Nano Energy</i> , 2019, 56, 391-399.	8.2	34
79	Raindrop energy-powered autonomous wireless hyetometer based on liquid-solids contact electrification. <i>Microsystems and Nanoengineering</i> , 2022, 8, 30.	3.4	33
80	Friction-Dominated Carrier Excitation and Transport Mechanism for GaN-Based Direct-Current Triboelectric Nanogenerators. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 24020-24027.	4.0	33
81	Self-Powered Hall Vehicle Sensors Based on Triboelectric Nanogenerators. <i>Advanced Materials Technologies</i> , 2018, 3, 1800140.	3.0	32
82	Comparison of applied torque and energy conversion efficiency between rotational triboelectric nanogenerator and electromagnetic generator. <i>IScience</i> , 2021, 24, 102318.	1.9	32
83	Flexure hinges based triboelectric nanogenerator by 3D printing. <i>Extreme Mechanics Letters</i> , 2018, 20, 38-45.	2.0	31
84	Tribotronic Tuning Diode for Active Analog Signal Modulation. <i>ACS Nano</i> , 2017, 11, 882-888.	7.3	30
85	Soft Tubular Triboelectric Nanogenerator for Biomechanical Energy Harvesting. <i>Advanced Sustainable Systems</i> , 2018, 2, 1800081.	2.7	30
86	High-Resolution Monolithic Integrated Tribotronic InGaZnO Thin-Film Transistor Array for Tactile Detection. <i>Advanced Functional Materials</i> , 2020, 30, 2002613.	7.8	30
87	Intrinsically Stretchable Organic-Tribotronic-Transistor for Tactile Sensing. <i>Research</i> , 2020, 2020, 1398903.	2.8	30
88	Multidimensional Force Sensors Based on Triboelectric Nanogenerators for Electronic Skin. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 56320-56328.	4.0	30
89	Recent progress in piezotronics and tribotronics. <i>Nanotechnology</i> , 2019, 30, 042001.	1.3	29
90	Network Topology Optimization of Triboelectric Nanogenerators for Effectively Harvesting Ocean Wave Energy. <i>IScience</i> , 2020, 23, 101848.	1.9	29

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91	Polymer nanocomposite-enabled high-performance triboelectric nanogenerator with self-healing capability. RSC Advances, 2018, 8, 30661-30668.	1.7	28
92	A Two-Dimensional Micro Scanner Integrated with a Piezoelectric Actuator and Piezoresistors. Sensors, 2009, 9, 631-644.	2.1	26
93	A Self-Powered Lantern Based on a Triboelectric-Photovoltaic Hybrid Nanogenerator. Advanced Materials Technologies, 2018, 3, 1700371.	3.0	26
94	Composite film with hollow hierarchical silica/perfluoropolyether filler and surface etching for performance enhanced triboelectric nanogenerators. Chemical Engineering Journal, 2022, 446, 137263.	6.6	25
95	Monocharged Electret Generator for Wearable Energy Harvesting Applications. Advanced Sustainable Systems, 2018, 2, 1700178.	2.7	24
96	Frequency band broadening and charge density enhancement of a vibrational triboelectric nanogenerator with two stoppers. Nano Energy, 2022, 99, 107427.	8.2	24
97	One-stop fabrication of triboelectric nanogenerator based on 3D printing. EcoMat, 2021, 3, e12130.	6.8	23
98	Embedded Triboelectric Active Sensors for Real-Time Pneumatic Monitoring. ACS Applied Materials & Interfaces, 2017, 9, 32352-32358.	4.0	22
99	Self-Powered Non-Contact Motion Vector Sensor for Multifunctional Human-Machine Interface. Small Methods, 2022, 6, .	4.6	21
100	Triboelectric Nanogenerators. Micro/Nano Technologies, 2018, , 1335-1376.	0.1	20
101	Tribotronic triggers and sequential logic circuits. Nano Research, 2017, 10, 3534-3542.	5.8	19
102	Dual Mode Rotary Triboelectric Nanogenerator for Collecting Kinetic Energy from Bicycle Brake. Advanced Energy and Sustainability Research, 2021, 2, 2000113.	2.8	19
103	Lithium-Ion Batteries: Charged by Triboelectric Nanogenerators with Pulsed Output Based on the Enhanced Cycling Stability. ACS Applied Materials & Interfaces, 2018, 10, 8676-8684.	4.0	18
104	Electric Field Stiffening Effect in <i>c</i> -Oriented Aluminum Nitride Piezoelectric Thin Films. ACS Applied Materials & Interfaces, 2018, 10, 1819-1827.	4.0	18
105	Triboelectric Effect-Driven Liquid Metal Actuators. Soft Robotics, 2019, 6, 664-670.	4.6	18
106	Dynamic wear sensor array based on single-electrode triboelectric nanogenerators. Nano Energy, 2020, 68, 104303.	8.2	18
107	Triboelectric effect-modulated varifocal liquid lens. Microsystems and Nanoengineering, 2020, 6, 61.	3.4	18
108	Electric-Field-Resonance-Based Wireless Triboelectric Nanogenerators and Sensors. ACS Applied Materials & Interfaces, 2022, 14, 794-804.	4.0	18

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109	Overview of Human Kinetic Energy Harvesting and Application. ACS Applied Energy Materials, 2022, 5, 7091-7114.	2.5	18
110	Tribotronic bipolar junction transistor for mechanical frequency monitoring and use as touch switch. Microsystems and Nanoengineering, 2018, 4, 25.	3.4	16
111	Study on a Two-Dimensional Scanning Micro-Mirror and Its Application in a MOEMS Target Detector. Sensors, 2010, 10, 6848-6860.	2.1	15
112	Material Recognition Sensor Array by Electrostatic Induction and Triboelectric Effects. Advanced Materials Technologies, 2020, 5, 2000641.	3.0	15
113	Nanoscale triboelectrification gated transistor. Nature Communications, 2020, 11, 1054.	5.8	15
114	Recent Progress of Switching Power Management for Triboelectric Nanogenerators. Sensors, 2022, 22, 1668.	2.1	15
115	Liquid Metal Gated Tribotronic Transistors as an Electronic Gradiometer for Angle Measurement. Advanced Electronic Materials, 2018, 4, 1800269.	2.6	14
116	A Near-Zero Power Triboelectric Wake-Up System for Autonomous Beaufort Scale of Wind Force Monitoring. Nanoenergy Advances, 2021, 1, 121-130.	3.6	14
117	Tribotronic transistor sensor for enhanced hydrogen detection. Nano Research, 2017, 10, 3857-3864.	5.8	12
118	Theoretical Study of Slidingâ€Electrificationâ€Gated Tribotronic Transistors and Logic Device. Advanced Electronic Materials, 2018, 4, 1700337.	2.6	12
119	Triboelectric Nanogenerators as Active Tactile Stimulators for Multifunctional Sensing and Artificial Synapses. Sensors, 2022, 22, 975.	2.1	12
120	Self-Powered and Autonomous Vibrational Wake-Up System Based on Triboelectric Nanogenerators and MEMS Switch. Sensors, 2022, 22, 3752.	2.1	11
121	Ferromagneticâ€Based Chargeâ€Accumulation Triboelectric Nanogenerator With Ultrahigh Surface Charge Density. Small, 2022, 18, .	5.2	11
122	A 2D resonant MEMS scanner with an ultra-compact wedge-like multiplied angle amplification for miniature LIDAR application. , 2016, , .		8
123	Effects of interfacial acidâ€base on the performance of contactâ€separation mode triboelectric nanogenerator. Materials Today Energy, 2021, 20, 100686.	2.5	8
124	Investigating the effect of nanoscale triboelectrification on nanofriction in insulators. Nano Energy, 2022, 91, 106620.	8.2	7
125	An automatic exposure algorithm based on information entropy. , 2006, , .		6
126	Design of space target detection system based on a two-dimensional scanning micro-mirror. , 2009, , .		3

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127	An ultraweak mechanical stimuli actuated single electrode triboelectric nanogenerator with high energy conversion efficiency. <i>Nanoscale</i> , 2022, 14, 7906-7912.	2.8	3
128	Piezoresistor design for deflection angles decoupling measurement of two-dimensional MOEMS scanning mirror. , 2007, , .		2
129	Multisource Energy Harvester with Coupling Structure and Multiplexing Mechanism. <i>Advanced Materials Interfaces</i> , 0, , 2200468.	1.9	2
130	Experimental research on temperature characteristics of two-dimensional micro scanner. <i>Procedia Engineering</i> , 2010, 5, 568-571.	1.2	1
131	Design and Simulation of Electromagnetic Two-Dimensional MOEMS Scanning Mirror. <i>Key Engineering Materials</i> , 0, 483, 185-189.	0.4	1
132	Design and Experiment of Phase Laser Ranging System Based on MEMS Mirror for Scanning Detection. <i>Key Engineering Materials</i> , 0, 645-646, 1099-1104.	0.4	1
133	Research on Two-Dimensional Scanning Characteristics of MEMS Resonant Mirror. <i>Key Engineering Materials</i> , 0, 503, 24-28.	0.4	0
134	Fabrication and Packaging of Electromagnetic 2D MEMS Scanning Mirror. <i>Key Engineering Materials</i> , 0, 609-610, 1165-1169.	0.4	0
135	Sustained energy harvesting from ambient humidity. <i>Science Bulletin</i> , 2020, 65, 1783-1784.	4.3	0
136	Triboelectric Nanogenerators. <i>Toxinology</i> , 2017, , 1-42.	0.2	0