## Integrated Multilayered Triboelectric Nanogenerator fo Energy from Human Motions

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**Citation Report** 

#	Article	IF	CITATIONS
1	Triboelectric nanogenerator as self-powered active sensors for detecting liquid/gaseous water/ethanol. Nano Energy, 2013, 2, 693-701.	16.0	250
2	Power-generating shoe insole based on triboelectric nanogenerators for self-powered consumer electronics. Nano Energy, 2013, 2, 688-692.	16.0	292
3	Harmonicâ€Resonatorâ€Based Triboelectric Nanogenerator as a Sustainable Power Source and a Selfâ€Powered Active Vibration Sensor. Advanced Materials, 2013, 25, 6094-6099.	21.0	672
4	A transparent single-friction-surface triboelectric generator and self-powered touch sensor. Energy and Environmental Science, 2013, 6, 3235.	30.8	367
5	Human Skin Based Triboelectric Nanogenerators for Harvesting Biomechanical Energy and as Self-Powered Active Tactile Sensor System. ACS Nano, 2013, 7, 9213-9222.	14.6	667
6	Triboelectric Nanogenerators as New Energy Technology for Self-Powered Systems and as Active Mechanical and Chemical Sensors. ACS Nano, 2013, 7, 9533-9557.	14.6	2,266
7	Water–Solid Surface Contact Electrification and its Use for Harvesting Liquidâ€Wave Energy. Angewandte Chemie - International Edition, 2013, 52, 12545-12549.	13.8	384
8	Cylindrical Rotating Triboelectric Nanogenerator. ACS Nano, 2013, 7, 6361-6366.	14.6	249
9	Investigation of power generation based on stacked triboelectric nanogenerator. Nano Energy, 2013, 2, 1164-1171.	16.0	87
10	Harvesting vibration energy by a triple-cantilever based triboelectric nanogenerator. Nano Research, 2013, 6, 880-886.	10.4	209
11	Self-powered flexible printed circuit board with integrated triboelectric generator. Nano Energy, 2013, 2, 1101-1106.	16.0	108
12	Piezoelectric performance enhancement of ZnO flexible nanogenerator by a CuO–ZnO p–n junction formation. Journal of Materials Chemistry C, 2013, 1, 8103.	5.5	67
13	Harvesting Energy from the Natural Vibration of Human Walking. ACS Nano, 2013, 7, 11317-11324.	14.6	448
14	A Wideband Triboelectric Energy Harvester. Journal of Physics: Conference Series, 2013, 476, 012128.	0.4	9
15	Fabrication of an Ultra-Flexible ZnO Nanogenerator for Harvesting Energy from Respiration. ECS Journal of Solid State Science and Technology, 2013, 2, P400-P404.	1.8	25
17	A Singleâ€Electrode Based Triboelectric Nanogenerator as Selfâ€Powered Tracking System. Advanced Materials, 2013, 25, 6594-6601.	21.0	299
18	Evaluating Triboelectric Properties of Polymer Films: An Incipient Appliance and Case Studies. Recent Patents on Materials Science, 2014, 7, 64-70.	0.5	1
19	A non-resonant, gravity-induced micro triboelectric harvester to collect kinetic energy from low-frequency jiggling movements of human limbs. Journal of Micromechanics and Microengineering,	2.6	13

#	Article	IF	CITATIONS
20	A Three Dimensional Multi‣ayered Sliding Triboelectric Nanogenerator. Advanced Energy Materials, 2014, 4, 1301592.	19.5	106
21	Highly Stretchable Piezoelectricâ€Pyroelectric Hybrid Nanogenerator. Advanced Materials, 2014, 26, 765-769.	21.0	469
22	3D Stack Integrated Triboelectric Nanogenerator for Harvesting Vibration Energy. Advanced Functional Materials, 2014, 24, 4090-4096.	14.9	263
23	Radial-arrayed rotary electrification for high performance triboelectric generator. Nature Communications, 2014, 5, 3426.	12.8	734
24	Multi-layered disk triboelectric nanogenerator for harvesting hydropower. Nano Energy, 2014, 6, 129-136.	16.0	98
25	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
26	PDMS-based Triboelectric and Transparent Nanogenerators with ZnO Nanorod Arrays. ACS Applied Materials & Interfaces, 2014, 6, 6631-6637.	8.0	168
27	A power-transformed-and-managed triboelectric nanogenerator and its applications in a self-powered wireless sensing node. Nanotechnology, 2014, 25, 225402.	2.6	89
28	Membraneâ€Based Selfâ€Powered Triboelectric Sensors for Pressure Change Detection and Its Uses in Security Surveillance and Healthcare Monitoring. Advanced Functional Materials, 2014, 24, 5807-5813.	14.9	250
29	Topographically-Designed Triboelectric Nanogenerator via Block Copolymer Self-Assembly. Nano Letters, 2014, 14, 7031-7038.	9.1	310
30	Hydrophobic Sponge Structureâ€Based Triboelectric Nanogenerator. Advanced Materials, 2014, 26, 5037-5042.	21.0	426
31	An electrospun nanowire-based triboelectric nanogenerator and its application in a fully self-powered UV detector. Nanoscale, 2014, 6, 7842-7846.	5.6	209
32	Energy Harvesting from the Mixture of Water and Ethanol Flowing through Three-Dimensional Graphene Foam. Journal of Physical Chemistry C, 2014, 118, 8783-8787.	3.1	29
33	Wireless biomechanical power harvesting via flexible magnetostrictive ribbons. Energy and Environmental Science, 2014, 7, 2243.	30.8	7
34	Flexible interdigital-electrodes-based triboelectric generators for harvesting sliding and rotating mechanical energy. Journal of Materials Chemistry A, 2014, 2, 19427-19434.	10.3	48
35	Stretchable Energyâ€Harvesting Tactile Electronic Skin Capable of Differentiating Multiple Mechanical Stimuli Modes. Advanced Materials, 2014, 26, 7324-7332.	21.0	481
36	Enhancing the performance of triboelectric nanogenerator through prior-charge injection and its application on self-powered anticorrosion. Nano Energy, 2014, 10, 37-43.	16.0	119
37	Electret Film-Enhanced Triboelectric Nanogenerator Matrix for Self-Powered Instantaneous Tactile Imaging. ACS Applied Materials & Interfaces, 2014, 6, 3680-3688.	8.0	118

#	Article	IF	CITATIONS
38	Dipole-moment-induced effect on contact electrification for triboelectric nanogenerators. Nano Research, 2014, 7, 990-997.	10.4	180
39	Fiberâ€Based Wearable Electronics: A Review of Materials, Fabrication, Devices, and Applications. Advanced Materials, 2014, 26, 5310-5336.	21.0	1,689
40	Static Electricity Powered Copper Oxide Nanowire Microbicidal Electroporation for Water Disinfection. Nano Letters, 2014, 14, 5603-5608.	9.1	118
41	3D Fiber-Based Hybrid Nanogenerator for Energy Harvesting and as a Self-Powered Pressure Sensor. ACS Nano, 2014, 8, 10674-10681.	14.6	258
43	Surface Engineering of Triboelectric Nanogenerator with an Electrodeposited Gold Nanoflower Structure. Scientific Reports, 2015, 5, 13866.	3.3	51
44	Direct probing of contact electrification by using optical second harmonic generation technique. Scientific Reports, 2015, 5, 13019.	3.3	16
45	Preliminary study on triboelectric generator harvesting energy from breathing motion. , 2015, , .		1
46	Performance Enhancement of Electronic and Energy Devices via Block Copolymer Selfâ€Assembly. Advanced Materials, 2015, 27, 3982-3998.	21.0	91
47	Design Considerations for Unconventional Electrochemical Energy Storage Architectures. Advanced Energy Materials, 2015, 5, 1402115.	19.5	271
48	An Allâ€Solidâ€State Flexible Piezoelectric Highâ€ <i>k</i> Film Functioning as Both a Generator and In Situ Storage Unit. Advanced Functional Materials, 2015, 25, 7029-7037.	14.9	50
49	Foldable and portable triboelectric-electromagnetic generator for scavenging motion energy and as a sensitive gas flow sensor for detecting breath personality. Nanotechnology, 2015, 26, 475402.	2.6	15
50	Coupling of Piezoelectric and Triboelectric Effects: from Theoretical Analysis to Experimental Verification. Advanced Electronic Materials, 2015, 1, 1500187.	5.1	50
51	A Novel Arch-Shape Nanogenerator Based on Piezoelectric and Triboelectric Mechanism for Mechanical Energy Harvesting. Nanomaterials, 2015, 5, 36-46.	4.1	49
52	An Integrated Flexible Harvester Coupled Triboelectric and Piezoelectric Mechanisms Using PDMS/MWCNT and PVDF. Journal of Microelectromechanical Systems, 2015, 24, 513-515.	2.5	30
53	Highly Stretchable 2D Fabrics for Wearable Triboelectric Nanogenerator under Harsh Environments. ACS Nano, 2015, 9, 6394-6400.	14.6	310
54	Metal-free and non-fluorine paper-based generator. Nano Energy, 2015, 14, 236-244.	16.0	32
55	Teflon coated threadâ€shaped contact electrification fibre. Micro and Nano Letters, 2015, 10, 318-320.	1.3	1
56	A universal self-charging system driven by random biomechanical energy for sustainable operation of mobile electronics. Nature Communications, 2015, 6, 8975.	12.8	526

#	Article	IF	CITATIONS
57	Paper-Based Origami Triboelectric Nanogenerators and Self-Powered Pressure Sensors. ACS Nano, 2015, 9, 901-907.	14.6	252
58	Wearable electrode-free triboelectric generator for harvesting biomechanical energy. Nano Energy, 2015, 12, 19-25.	16.0	127
59	High-performance nanopattern triboelectric generator by block copolymer lithography. Nano Energy, 2015, 12, 331-338.	16.0	146
60	Development of a Broadband Triboelectric Energy Harvester With SU-8 Micropillars. Journal of Microelectromechanical Systems, 2015, 24, 91-99.	2.5	77
61	Nanopatterned Textile-Based Wearable Triboelectric Nanogenerator. ACS Nano, 2015, 9, 3501-3509.	14.6	612
62	Hybridized Electromagnetic–Triboelectric Nanogenerator for Scavenging Biomechanical Energy for Sustainably Powering Wearable Electronics. ACS Nano, 2015, 9, 3521-3529.	14.6	233
63	Low temperature dependence of triboelectric effect for energy harvesting and self-powered active sensing. Applied Physics Letters, 2015, 106, .	3.3	51
64	Triboelectric energy harvester based on wearable textile platforms employing various surface morphologies. Nano Energy, 2015, 12, 410-418.	16.0	157
65	Energy harvesting from human motion: exploiting swing and shock excitations. Smart Materials and Structures, 2015, 24, 025029.	3.5	189
66	Flowâ€Driven Triboelectric Generator for Directly Powering a Wireless Sensor Node. Advanced Materials, 2015, 27, 240-248.	21.0	167
67	A Motion―and Soundâ€Activated, 3Dâ€Printed, Chalcogenideâ€Based Triboelectric Nanogenerator. Advanced Materials, 2015, 27, 2367-2376.	21.0	83
68	Molecularly Engineered Surface Triboelectric Nanogenerator by Self-Assembled Monolayers (METS). Chemistry of Materials, 2015, 27, 4749-4755.	6.7	111
69	Novel Spiral-Like Electrode Structure Design for Realization of Two Modes of Energy Harvesting. ACS Applied Materials & Interfaces, 2015, 7, 16450-16457.	8.0	11
70	Largely Improving the Robustness and Lifetime of Triboelectric Nanogenerators through Automatic Transition between Contact and Noncontact Working States. ACS Nano, 2015, 9, 7479-7487.	14.6	100
71	Progress in triboelectric nanogenerators as a new energy technology and self-powered sensors. Energy and Environmental Science, 2015, 8, 2250-2282.	30.8	1,723
72	Paper-Based ZnO Nanogenerator Using Contact Electrification and Piezoelectric Effects. Journal of Microelectromechanical Systems, 2015, 24, 519-521.	2.5	17
73	A multi-layered interdigitative-electrodes-based triboelectric nanogenerator for harvesting hydropower. Nano Energy, 2015, 15, 256-265.	16.0	89
74	A hybrid fibers based wearable fabric piezoelectric nanogenerator for energy harvesting application. Nano Energy, 2015, 13, 298-305.	16.0	175

#	Article	IF	CITATIONS
75	Stretchableâ€Rubberâ€Based Triboelectric Nanogenerator and Its Application as Selfâ€Powered Body Motion Sensors. Advanced Functional Materials, 2015, 25, 3688-3696.	14.9	320
76	High-performance flexible lead-free nanocomposite piezoelectric nanogenerator for biomechanical energy harvesting and storage. Nano Energy, 2015, 15, 177-185.	16.0	200
77	Triboelectric Generators and Sensors for Self-Powered Wearable Electronics. ACS Nano, 2015, 9, 3421-3427.	14.6	239
78	Impact of contact pressure on output voltage of triboelectric nanogenerator based on deformation of interfacial structures. Nano Energy, 2015, 17, 63-71.	16.0	126
79	Simple triboelectric generator applied on macro-sized surface patterns and test-bed device to control humidity. , 2015, , .		2
80	Folded Elastic Strip-Based Triboelectric Nanogenerator for Harvesting Human Motion Energy for Multiple Applications. ACS Applied Materials & Interfaces, 2015, 7, 20469-20476.	8.0	50
81	Mesoporous pores impregnated with Au nanoparticles as effective dielectrics for enhancing triboelectric nanogenerator performance in harsh environments. Energy and Environmental Science, 2015, 8, 3006-3012.	30.8	315
82	3-Dimensional broadband energy harvester based on internal hydrodynamic oscillation with a package structure. Nano Energy, 2015, 17, 82-90.	16.0	60
83	A high performance triboelectric nanogenerator for self-powered non-volatile ferroelectric transistor memory. Nanoscale, 2015, 7, 17306-17311.	5.6	46
84	Shape memory polymer-based self-healing triboelectric nanogenerator. Energy and Environmental Science, 2015, 8, 3605-3613.	30.8	210
85	Pyro-paraelectricity: a new effect in hetergeneous material architectures. Proceedings of SPIE, 2015, , .	0.8	0
86	Toward Flexible and Wearable Humanâ€Interactive Healthâ€Monitoring Devices. Advanced Healthcare Materials, 2015, 4, 487-500.	7.6	289
87	Wearable Triboelectric Generator for Powering the Portable Electronic Devices. ACS Applied Materials & amp; Interfaces, 2015, 7, 18225-18230.	8.0	133
88	Triboelectric nanogenerators as a new energy technology: From fundamentals, devices, to applications. Nano Energy, 2015, 14, 126-138.	16.0	574
89	Controllable fabrication of ultrafine oblique organic nanowire arrays and their application in energy harvesting. Nanoscale, 2015, 7, 1285-1289.	5.6	23
90	Improving energy conversion efficiency for triboelectric nanogenerator with capacitor structure by maximizing surface charge density. Nanoscale, 2015, 7, 1896-1903.	5.6	222
91	Single-electrode-based rotationary triboelectric nanogenerator and its applications as self-powered contact area and eccentric angle sensors. Nano Energy, 2015, 11, 323-332.	16.0	91
92	Facile fabrication and characterization of arch-shaped triboelectric nanogenerator with a graphite top electrode. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 401-405.	1.8	16

#	Article	IF	CITATIONS
93	High performance triboelectric nanogenerators based on large-scale mass-fabrication technologies. Nano Energy, 2015, 11, 304-322.	16.0	191
94	Recent Progress in Triboelectric Nanogenerators as a Renewable and Sustainable Power Source. Journal of Nanomaterials, 2016, 2016, 1-24.	2.7	53
95	Flexible Nanogenerators for Energy Harvesting and Selfâ€Powered Electronics. Advanced Materials, 2016, 28, 4283-4305.	21.0	1,438
96	Flexible Integrated Electrical Cables Based on Biocomposites for Synchronous Energy Transmission and Storage. Advanced Functional Materials, 2016, 26, 3472-3479.	14.9	72
97	A Novel Triboelectric Generator Based on the Combination of a Waterwheelâ€Like Electrode with a Spring Steel Plate For Efficient Harvesting of Lowâ€Velocity Rotational Motion Energy. Advanced Electronic Materials, 2016, 2, 1500448.	5.1	16
98	Selfâ€Powered Electrochemistry for the Oxidation of Organic Molecules by a Crossâ€Linked Triboelectric Nanogenerator. Advanced Materials, 2016, 28, 5188-5194.	21.0	31
99	Effect of garment design on piezoelectricity harvesting from joint movement. Smart Materials and Structures, 2016, 25, 035012.	3.5	29
100	Predicting the Output of a Triboelectric Energy Harvester Undergoing Mechanical Pressure. , 2016, , .		0
101	Charge collection kinetics on ferroelectric polymer surface using charge gradient microscopy. Scientific Reports, 2016, 6, 25087.	3.3	14
102	Triboelectric contact surface charge modulation and piezoelectric charge inducement using polarized composite thin film for performance enhancement of triboelectric generators. Nano Energy, 2016, 25, 225-231.	16.0	55
103	A Flexible and Transparent Graphene-Based Triboelectric Nanogenerator. IEEE Nanotechnology Magazine, 2016, 15, 435-441.	2.0	42
104	Controlled synthesis of Se-supported Au/Pd nanoparticles with photo-assisted electrocatalytic activity and their application in self-powered sensing systems. Nano Energy, 2016, 22, 564-571.	16.0	39
105	Triboelectric Nanogenerator: Vertical Contact-Separation Mode. Green Energy and Technology, 2016, , 23-47.	0.6	40
107	Flexible and biocompatible polypropylene ferroelectret nanogenerator (FENG): On the path toward wearable devices powered by human motion. Nano Energy, 2016, 30, 649-657.	16.0	78
108	Energy Harvesters for Wearable and Stretchable Electronics: From Flexibility to Stretchability. Advanced Materials, 2016, 28, 9881-9919.	21.0	407
109	Design of simulation experiments to predict triboelectric generator output using structural parameters. Simulation Modelling Practice and Theory, 2016, 68, 95-107.	3.8	22
110	High-performance triboelectric nanogenerators with artificially well-tailored interlocked interlocked interfaces. Nano Energy, 2016, 27, 595-601.	16.0	66
111	All-Elastomer-Based Triboelectric Nanogenerator as a Keyboard Cover To Harvest Typing Energy. ACS Nano, 2016, 10, 7973-7981.	14.6	96

#	Article	IF	CITATIONS
112	Double-induced-mode integrated triboelectric nanogenerator based on spring steel to maximize space utilization. Nano Research, 2016, 9, 3355-3363.	10.4	32
113	Triboelectric Nanogenerators Driven Selfâ€Powered Electrochemical Processes for Energy and Environmental Science. Advanced Energy Materials, 2016, 6, 1600665.	19.5	394
114	Highly reliable wind-rolling triboelectric nanogenerator operating in a wide wind speed range. Scientific Reports, 2016, 6, 33977.	3.3	84
115	3D Carbon Electrode Based Triboelectric Nanogenerator. Advanced Materials Technologies, 2016, 1, 1600160.	5.8	16
116	Mechanically Robust Silver Nanowires Network for Triboelectric Nanogenerators. Advanced Functional Materials, 2016, 26, 7717-7724.	14.9	71
117	Conformal, graphene-based triboelectric nanogenerator for self-powered wearable electronics. Nano Energy, 2016, 27, 298-305.	16.0	152
118	Tribotronics—A new field by coupling triboelectricity and semiconductor. Nano Today, 2016, 11, 521-536.	11.9	110
119	Triboelectric–thermoelectric hybrid nanogenerator for harvesting frictional energy. Smart Materials and Structures, 2016, 25, 125007.	3.5	49
120	A highly shape-adaptive, stretchable design based on conductive liquid for energy harvesting and self-powered biomechanical monitoring. Science Advances, 2016, 2, e1501624.	10.3	274
121	Boosted output performance of triboelectric nanogenerator via electric double layer effect. Nature Communications, 2016, 7, 12985.	12.8	336
122	Hybrid Energy Cell with Hierarchical Nano/Micro-Architectured Polymer Film to Harvest Mechanical, Solar, and Wind Energies Individually/Simultaneously. ACS Applied Materials & Interfaces, 2016, 8, 30165-30175.	8.0	46
123	Preparation of ZnO Nanorod/Graphene/ZnO Nanorod Epitaxial Double Heterostructure for Piezoelectrical Nanogenerator by Using Preheating Hydrothermal. Journal of Visualized Experiments, 2016, , e53491.	0.3	3
124	Control of Triboelectrification by Engineering Surface Dipole and Surface Electronic State. ACS Applied Materials & Interfaces, 2016, 8, 18519-18525.	8.0	100
125	Magneticâ€Assisted Noncontact Triboelectric Nanogenerator Converting Mechanical Energy into Electricity and Light Emissions. Advanced Materials, 2016, 28, 2744-2751.	21.0	138
126	Magnetic leathers. RSC Advances, 2016, 6, 6496-6503.	3.6	8
127	Kinematic design for high performance triboelectric nanogenerators with enhanced working frequency. Nano Energy, 2016, 21, 19-25.	16.0	40
128	Triboelectric generator for wearable devices fabricated using a casting method. RSC Advances, 2016, 6, 10094-10098.	3.6	25
129	Protein-based contact electrification and its uses for mechanical energy harvesting and humidity detecting. Nano Energy, 2016, 21, 238-246.	16.0	96

#	Article	IF	CITATIONS
130	A triboelectric textile templated by a three-dimensionally penetrated fabric. Journal of Materials Chemistry A, 2016, 4, 6077-6083.	10.3	71
131	Fluoroalkylsilane-Modified Textile-Based Personal Energy Management Device for Multifunctional Wearable Applications. ACS Applied Materials & Interfaces, 2016, 8, 4676-4683.	8.0	130
132	Improving the surface charge density of a contact-separation-based triboelectric nanogenerator by modifying the surface morphology. Microelectronic Engineering, 2016, 159, 102-107.	2.4	82
133	Self-packaging elastic bellows-type triboelectric nanogenerator. Nano Energy, 2016, 20, 84-93.	16.0	37
134	Flexible High-Performance Lead-Free Na <sub>0.47</sub> K <sub>0.47</sub> Li <sub>0.06</sub> NbO <sub>3</sub> Microcube-Structure-Based Piezoelectric Energy Harvester. ACS Applied Materials & Interfaces, 2016, 8, 1766-1773.	8.0	70
135	Mechatronics: Ideas, Challenges, Solutions and Applications. Advances in Intelligent Systems and Computing, 2016, , .	0.6	1
136	Energy-Harvesting Applications and Efficient Power Processing. The Frontiers Collection, 2016, , 275-300.	0.2	2
137	An intelligent skin based self-powered finger motion sensor integrated with triboelectric nanogenerator. Nano Energy, 2016, 19, 532-540.	16.0	178
138	Reduced graphene-oxide acting as electron-trapping sites in the friction layer for giant triboelectric enhancement. Nano Energy, 2017, 32, 542-550.	16.0	163
139	A self-powered sensor with super-hydrophobic nanostructure surfaces for synchronous detection and electricity generation. Nano Energy, 2017, 33, 288-292.	16.0	26
140	A microcrystalline cellulose ingrained polydimethylsiloxane triboelectric nanogenerator as a self-powered locomotion detector. Journal of Materials Chemistry C, 2017, 5, 1810-1815.	5.5	60
141	A sustainable freestanding biomechanical energy harvesting smart backpack as a portable-wearable power source. Journal of Materials Chemistry C, 2017, 5, 1488-1493.	5.5	62
142	Development of battery-free neural interface and modulated control of tibialis anterior muscle via common peroneal nerve based on triboelectric nanogenerators (TENGs). Nano Energy, 2017, 33, 1-11.	16.0	124
143	Comb-shaped electrode-based triboelectric nanogenerators for bi-directional mechanical energy harvesting. Microelectronic Engineering, 2017, 174, 46-51.	2.4	9
144	Sustainable Energy Source for Wearable Electronics Based on Multilayer Elastomeric Triboelectric Nanogenerators. Advanced Energy Materials, 2017, 7, 1602832.	19.5	129
145	Triboelectric Nanogenerator Using Microdomeâ€Patterned PDMS as a Wearable Respiratory Energy Harvester. Advanced Materials Technologies, 2017, 2, 1700014.	5.8	38
146	Overview of Energy Harvesting Technologies. Springer Theses, 2017, , 9-37.	0.1	6
147	High performance lithium-sulfur batteries for storing pulsed energy generated by triboelectric nanogenerators. Scientific Reports, 2017, 7, 425.	3.3	11

# 148	ARTICLE Efficient Storing Energy Harvested by Triboelectric Nanogenerators Using a Safe and Durable Allâ€Solidâ€State Sodiumâ€ion Battery. Advanced Science, 2017, 4, 1700072.	IF 11.2	CITATIONS
149	A smart mobile pouch as a biomechanical energy harvester towards self-powered smart wireless power transfer applications. Nanoscale, 2017, 9, 9818-9824.	5.6	50
150	Nanogenerators for Human Body Energy Harvesting. Trends in Biotechnology, 2017, 35, 610-624.	9.3	149
151	Progress in triboelectric nanogenerators as self-powered smart sensors. Journal of Materials Research, 2017, 32, 1628-1646.	2.6	150
152	Magnetically levitated/piezoelectric/triboelectric hybrid generator as a power supply for the temperature sensor. Science China Technological Sciences, 2017, 60, 1068-1074.	4.0	9
153	A Facile Method and Novel Mechanism Using Microneedleâ€Structured PDMS for Triboelectric Generator Applications. Small, 2017, 13, 1700373.	10.0	39
154	Hourglass Triboelectric Nanogenerator as a "Direct Current―Power Source. Advanced Energy Materials, 2017, 7, 1700644.	19.5	34
155	Robust nanogenerators based on graft copolymers via control of dielectrics for remarkable output power enhancement. Science Advances, 2017, 3, e1602902.	10.3	204
156	Light-transformable and -healable triboelectric nanogenerators. Nano Energy, 2017, 38, 412-418.	16.0	24
157	Cam-based sustainable triboelectric nanogenerators with a resolution-free 3D-printed system. Nano Energy, 2017, 38, 326-334.	16.0	50
158	Research Update: Recent progress in the development of effective dielectrics for high-output triboelectric nanogenerator. APL Materials, 2017, 5, .	5.1	51
159	Recent Progress on Piezoelectric and Triboelectric Energy Harvesters in Biomedical Systems. Advanced Science, 2017, 4, 1700029.	11.2	405
160	Triboelectric Devices for Power Generation and Self-Powered Sensing Applications. Springer Theses, 2017, , .	0.1	9
161	Nanogenerators: An emerging technology towards nanoenergy. APL Materials, 2017, 5, .	5.1	164
162	Antibacterial Composite Film-Based Triboelectric Nanogenerator for Harvesting Walking Energy. ACS Applied Materials & Interfaces, 2017, 9, 11882-11888.	8.0	110
163	Flexible Triboelectric Nanogenerator Based on Carbon Nanotubes for Selfâ€Powered Weighing. Advanced Engineering Materials, 2017, 19, 1600710.	3.5	42
164	A stretchable fiber nanogenerator for versatile mechanical energy harvesting and self-powered full-range personal healthcare monitoring. Nano Energy, 2017, 41, 511-518.	16.0	124
165	Reviving Vibration Energy Harvesting and Self-Powered Sensing by a Triboelectric Nanogenerator. Joule, 2017, 1, 480-521.	24.0	748

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166	Nature-Inspired Structural Materials for Flexible Electronic Devices. Chemical Reviews, 2017, 117, 12893-12941.	47.7	578
167	Surface structural analysis of a friction layer for a triboelectric nanogenerator. Nano Energy, 2017, 42, 34-42.	16.0	89
168	Harvesting electrical energy from carbon nanotube yarn twist. Science, 2017, 357, 773-778.	12.6	306
169	Size effect on the output of a miniaturized triboelectric nanogenerator based on superimposed electrode layers. Nano Energy, 2017, 41, 128-138.	16.0	34
170	Ultrasensitive triboelectric nanogenerator for weak ambient energy with rational unipolar stacking structure and low-loss power management. Nano Energy, 2017, 41, 351-358.	16.0	19
171	Bioinspired stretchable triboelectric nanogenerator as energy-harvesting skin for self-powered electronics. Nano Energy, 2017, 39, 429-436.	16.0	147
172	A double human skin contact based sandwich structured triboelectric micro-generator. , 2017, , .		0
173	Triboelectric Nanogenerator Using Lithium Niobate Thin Film. Journal of Physics: Conference Series, 2017, 867, 012014.	0.4	1
174	3D Orthogonal Woven Triboelectric Nanogenerator for Effective Biomechanical Energy Harvesting and as Selfâ€Powered Active Motion Sensors. Advanced Materials, 2017, 29, 1702648.	21.0	321
175	Triboelectric nanogenerators as flexible power sources. Npj Flexible Electronics, 2017, 1, .	10.7	295
176	A novel retractable spring-like-electrode triboelectric nanogenerator with highly-effective energy harvesting and conversion for sensing road conditions. RSC Advances, 2017, 7, 50993-51000.	3.6	15
177	Fully stretchable and highly durable triboelectric nanogenerators based on gold-nanosheet electrodes for self-powered human-motion detection. Nano Energy, 2017, 42, 300-306.	16.0	126
178	Generation of electrical power under human skin by subdermal solar cell arrays for implantable bioelectronic devices. Biosensors and Bioelectronics, 2017, 92, 364-371.	10.1	40
179	Flexible Transparent Triboelectric Nanogenerators with Graphene and Indium Tin Oxide Electrode Structures. Energy Technology, 2017, 5, 599-603.	3.8	11
180	Stretchable and flexible cylindrical-fiber-based triboelectric nanogenerator. , 2017, , .		0
181	Relationship between triboelectric charge and contact force for two triboelectric layers. Journal of Electrostatics, 2017, 90, 147-152.	1.9	60
182	Wearable Biomechanical Energy Harvesting Technologies. Energies, 2017, 10, 1483.	3.1	144
183	WearETE: A Scalable Wearable E-Textile Triboelectric Energy Harvesting System for Human Motion Scavenging. Sensors, 2017, 17, 2649.	3.8	16

#	Article	IF	CITATIONS
184	Energy Harvesting and Magneto-Inductive Communications With Molecular Magnets on Vibrating Graphene and Biomedical Applications in the Kilohertz to Terahertz Band. IEEE Transactions on Molecular, Biological, and Multi-Scale Communications, 2017, 3, 194-206.	2.1	6
185	All-in-one self-powered flexible microsystems based on triboelectric nanogenerators. Nano Energy, 2018, 47, 410-426.	16.0	249
186	Metal-free, flexible triboelectric generator based on MWCNT mesh film and PDMS layers. Applied Surface Science, 2018, 442, 693-699.	6.1	33
187	Triboelectric nanogenerator as a new technology for effective PM2.5 removing with zero ozone emission. Progress in Natural Science: Materials International, 2018, 28, 99-112.	4.4	37
188	Human Body as a Power Source for Biomechanical Energy Scavenging Based on Electrodeâ€Free Triboelectric Nanogenerators. Energy Technology, 2018, 6, 2053-2057.	3.8	10
189	Battery-Free Electronic Smart Toys: A Step toward the Commercialization of Sustainable Triboelectric Nanogenerators. ACS Sustainable Chemistry and Engineering, 2018, 6, 6110-6116.	6.7	39
190	Flexure hinges based triboelectric nanogenerator by 3D printing. Extreme Mechanics Letters, 2018, 20, 38-45.	4.1	31
191	Triboelectrificationâ€Enabled Selfâ€Powered Data Storage. Advanced Science, 2018, 5, 1700658.	11.2	20
192	A Selfâ€Powered Portable Power Bank Based on a Hybridized Nanogenerator. Advanced Materials Technologies, 2018, 3, 1700209.	5.8	15
193	Triboelectric nanogenerator based on immersion precipitation derived highly porous ethyl cellulose. Journal of Electrostatics, 2018, 92, 1-5.	1.9	30
194	Engineered and Laserâ€Processed Chitosan Biopolymers for Sustainable and Biodegradable Triboelectric Power Generation. Advanced Materials, 2018, 30, 1706267.	21.0	172
195	Radialâ€Grating Pendulumâ€Structured Triboelectric Nanogenerator for Energy Harvesting and Tiltingâ€Angle Sensing. Advanced Materials Technologies, 2018, 3, 1700251.	5.8	26
196	Selfâ€Powered Lowâ€Platinum Nanorod Alloy Monoelectrodes for Rain Energy Harvest. Energy Technology, 2018, 6, 1606-1609.	3.8	1
197	Scavenging Wind Energy by Triboelectric Nanogenerators. Advanced Energy Materials, 2018, 8, 1702649.	19.5	302
198	A Selfâ€Powered and Flexible Organometallic Halide Perovskite Photodetector with Very High Detectivity. Advanced Materials, 2018, 30, 1704611.	21.0	339
199	A multilayer thin-film screen-printed triboelectric nanogenerator. International Journal of Energy Research, 2018, 42, 3688-3695.	4.5	22
200	Battery-free neuromodulator for peripheral nerve direct stimulation. Nano Energy, 2018, 50, 148-158.	16.0	88
201	High-performance flexible triboelectric nanogenerator based on porous aerogels and electrospun nanofibers for energy harvesting and sensitive self-powered sensing. Nano Energy, 2018, 48, 327-336.	16.0	205

#	Article	IF	CITATIONS
202	Triboelectric energy harvesting with surface-charge-fixed polymer based on ionic liquid. Science and Technology of Advanced Materials, 2018, 19, 317-323.	6.1	24
203	A low-cost approach for measuring electrical load currents in triboelectric nanogenerators. Nanotechnology Reviews, 2018, 7, 149-156.	5.8	45
204	Triboelectric Nanogenerators for Mechanical Energy Harvesting. Energy Technology, 2018, 6, 958-997.	3.8	26
205	A flexible electrostatic kinetic energy harvester based on electret films of electrospun nanofibers. Smart Materials and Structures, 2018, 27, 014001.	3.5	16
206	An Omnidirectionally Stretchable Piezoelectric Nanogenerator Based on Hybrid Nanofibers and Carbon Electrodes for Multimodal Straining and Human Kinematics Energy Harvesting. Advanced Energy Materials, 2018, 8, 1701520.	19.5	112
207	A review on heat and mechanical energy harvesting from human – Principles, prototypes and perspectives. Renewable and Sustainable Energy Reviews, 2018, 82, 3582-3609.	16.4	169
208	Toward Wearable Selfâ€Charging Power Systems: The Integration of Energyâ€Harvesting and Storage Devices. Small, 2018, 14, 1702817.	10.0	274
209	Ultra-robust triboelectric nanogenerator for harvesting rotary mechanical energy. Nano Research, 2018, 11, 2862-2871.	10.4	44
210	Surface morphology effects in a vibration based triboelectric energy harvester. Smart Materials and Structures, 2018, 27, 015029.	3.5	47
211	Enhancing the performance of NaNbO <sub>3</sub> triboelectric nanogenerators by dielectric modulation and electronegative modification. Journal Physics D: Applied Physics, 2018, 51, 015303.	2.8	20
212	Flexible fiber based woven structured triboelectric nanogenerator for self-powered system. , 2018, , .		3
213	A Spherical Hybrid Triboelectric Nanogenerator for Enhanced Water Wave Energy Harvesting. Micromachines, 2018, 9, 598.	2.9	39
215	The Progress of PVDF as a Functional Material for Triboelectric Nanogenerators and Self-Powered Sensors. Micromachines, 2018, 9, 532.	2.9	64
216	Capsule Triboelectric Nanogenerators: Toward Optional 3D Integration for High Output and Efficient Energy Harvesting from Broadband-Amplitude Vibrations. ACS Nano, 2018, 12, 9947-9957.	14.6	26
217	Flexible single-strand fiber-based woven-structured triboelectric nanogenerator for self-powered electronics. APL Materials, 2018, 6, 101106.	5.1	29
218	Highly Surface-Embossed Polydimethylsiloxane-Based Triboelectric Nanogenerators with Hierarchically Nanostructured Conductive Ni–Cu Fabrics. ACS Applied Materials & Interfaces, 2018, 10, 33221-33229.	8.0	38
219	Remarkably enhanced triboelectric nanogenerator based on flexible and transparent monolayer titania nanocomposite. Nano Energy, 2018, 50, 140-147.	16.0	116
220	Flexible one-structure arched triboelectric nanogenerator based on common electrode for high efficiency energy harvesting and self-powered motion sensing. AIP Advances, 2018, 8, .	1.3	7

#	Article	IF	CITATIONS
221	Development of energy-harvesting system using deformation of magnetic elastomer. Japanese Journal of Applied Physics, 2018, 57, 06HJ05.	1.5	7
222	Design, optimization, modeling and testing of a piezoelectric footwear energy harvester. Energy Conversion and Management, 2018, 171, 1352-1364.	9.2	145
223	Sustainable powering triboelectric nanogenerators: Approaches and the path towards efficient use. Nano Energy, 2018, 51, 270-285.	16.0	110
224	Spherical Triboelectric Nanogenerators Based on Springâ€Assisted Multilayered Structure for Efficient Water Wave Energy Harvesting. Advanced Functional Materials, 2018, 28, 1802634.	14.9	168
225	Modeling and experimental investigation of an AA-sized electromagnetic generator for harvesting energy from human motion. Smart Materials and Structures, 2018, 27, 085008.	3.5	36
226	Polymer tubes as carrier boats of thermosetting and powder materials based on 3D printing for triboelectric nanogenerator with microstructure. Nano Energy, 2018, 52, 134-141.	16.0	45
228	Tube-based triboelectric nanogenerator for self-powered detecting blockage and monitoring air pressure. Nano Energy, 2018, 52, 71-77.	16.0	48
229	Sustainable oscillating triboelectric nanogenerator as omnidirectional self-powered impact sensor. Nano Energy, 2018, 50, 1-8.	16.0	41
230	Triboelectric Nanogenerator Based on Biocompatible and Easily Available Polymer Films. ChemistrySelect, 2018, 3, 5055-5061.	1.5	14
231	A hybrid piezoelectric-triboelectric generator for low-frequency and broad-bandwidth energy harvesting. Energy Conversion and Management, 2018, 174, 188-197.	9.2	104
232	Harvest of ocean energy by triboelectric generator technology. Applied Physics Reviews, 2018, 5, 031303.	11.3	14
233	Triboelectric Nanogenerator Based Self-Powered Tilt Sensor. Tehnicki Vjesnik, 2018, 25, .	0.2	0
234	Self-powered active antibacterial clothing through hybrid effects of nanowire-enhanced electric field electroporation and controllable hydrogen peroxide generation. Nano Energy, 2018, 53, 1-10.	16.0	57
235	Interdigitated Electrodeâ€Based Triboelectric Sliding Sensor for Security Monitoring. Advanced Materials Technologies, 2018, 3, 1800189.	5.8	50
236	Controlling Surface Charge Generated by Contact Electrification: Strategies and Applications. Advanced Materials, 2018, 30, e1802405.	21.0	117
237	Painting a high-output triboelectric nanogenerator on paper for harvesting energy from human body motion. Nano Energy, 2018, 50, 571-580.	16.0	168
238	Tire Condition Monitoring and Intelligent Tires Using Nanogenerators Based on Piezoelectric, Electromagnetic, and Triboelectric Effects. Advanced Materials Technologies, 2019, 4, 1800105.	5.8	57
239	Triboelectric nanogenerators enabled sensing and actuation for robotics. Nano Energy, 2019, 65, 104005.	16.0	62

#	Article	IF	CITATIONS
240	Vibrationâ€Energyâ€Harvesting System: Transduction Mechanisms, Frequency Tuning Techniques, and Biomechanical Applications. Advanced Materials Technologies, 2019, 4, 1900177.	5.8	56
241	Introduction of Triboelectric Positive Bioplastic for Powering Portable Electronics and Self-Powered Gait Sensor. ACS Applied Energy Materials, 2019, 2, 5507-5514.	5.1	27
242	Development and characterization of nanosheets attached nanotetrapods of zinc oxide. SN Applied Sciences, 2019, 1, 1.	2.9	6
243	Triboelectric Nanogenerator-Based Self-Powered Resonant Sensor for Non-Destructive Defect Detection. Sensors, 2019, 19, 3262.	3.8	10
244	A Review of Human-Powered Energy Harvesting for Smart Electronics: Recent Progress and Challenges. International Journal of Precision Engineering and Manufacturing - Green Technology, 2019, 6, 821-851.	4.9	130
245	Comb-structured triboelectric nanogenerators for multi-directional energy scavenging from human movements. Science and Technology of Advanced Materials, 2019, 20, 725-732.	6.1	28
246	3D-printed biomimetic-villus structure with maximized surface area for triboelectric nanogenerator and dust filter. Nano Energy, 2019, 63, 103857.	16.0	55
247	Study of thin film blue energy harvester based on triboelectric nanogenerator and seashore IoT applications. Nano Energy, 2019, 66, 104167.	16.0	117
248	High-performance cycloid inspired wearable electromagnetic energy harvester for scavenging human motion energy. Applied Energy, 2019, 256, 113987.	10.1	102
249	Integrated flywheel and spiral spring triboelectric nanogenerator for improving energy harvesting of intermittent excitations/triggering. Nano Energy, 2019, 66, 104104.	16.0	40
250	Chemically functionalized cellulose nanofibrils-based gear-like triboelectric nanogenerator for energy harvesting and sensing. Nano Energy, 2019, 66, 104126.	16.0	129
251	Unveiling Peritoneum Membrane for a Robust Triboelectric Nanogenerator. ACS Omega, 2019, 4, 17684-17690.	3.5	22
252	Microplasmaâ€Ðischargeâ€Based Nitrogen Fixation Driven by Triboelectric Nanogenerator toward Selfâ€Powered Mechanoâ€Nitrogenous Fertilizer Supplier. Advanced Functional Materials, 2019, 29, 1904090.	14.9	34
253	Water-solid triboelectric nanogenerators: An alternative means for harvesting hydropower. Renewable and Sustainable Energy Reviews, 2019, 115, 109366.	16.4	73
254	Vibration energy harvesting: A review. Journal of Advanced Dielectrics, 2019, 09, 1930001.	2.4	56
255	Butylated melamine formaldehyde as a durable and highly positive friction layer for stable, high output triboelectric nanogenerators. Energy and Environmental Science, 2019, 12, 3156-3163.	30.8	107
256	A flexible self-charged power panel for harvesting and storing solar and mechanical energy. Nano Energy, 2019, 65, 104082.	16.0	30
257	Force Analysis and Energy Harvesting for Innovative Multi-functional Shoes. Frontiers in Materials, 2019, 6, .	2.4	5

		15	0
#		IF	CITATIONS
258	bandwidth and high output power density. Nano Energy, 2019, 66, 104122.	16.0	21
259	A Review on Hierarchical Origami and Kirigami Structure for Engineering Applications. International Journal of Precision Engineering and Manufacturing - Green Technology, 2019, 6, 147-161.	4.9	53
260	A high output magneto-mechano-triboelectric generator enabled by accelerated water-soluble nano-bullets for powering a wireless indoor positioning system. Energy and Environmental Science, 2019, 12, 666-674.	30.8	89
261	Core–Shell and Helical-Structured Cylindrical Triboelectric Nanogenerator for Wearable Energy Harvesting. ACS Applied Energy Materials, 2019, 2, 1357-1362.	5.1	29
262	Improvement in the Piezoelectric Performance of a ZnO Nanogenerator by a ZnO/Spiroâ€MeOTAD psâ€n Heterojunction. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1800717.	1.8	8
263	Towards optimized triboelectric nanogenerators. Nano Energy, 2019, 62, 530-549.	16.0	124
264	Power-generating footwear based on a triboelectric-electromagnetic-piezoelectric hybrid nanogenerator. Nano Energy, 2019, 62, 660-666.	16.0	80
265	Skin-contact actuated single-electrode protein triboelectric nanogenerator and strain sensor for biomechanical energy harvesting and motion sensing. Nano Energy, 2019, 62, 674-681.	16.0	140
266	Double layered dielectric elastomer by vapor encapsulation casting for highly deformable and strongly adhesive triboelectric materials. Nano Energy, 2019, 62, 144-153.	16.0	12
267	Survey of energy scavenging for wearable and implantable devices. Energy, 2019, 178, 33-49.	8.8	97
268	A triboelectric energy harvester using human biomechanical motion for low power electronics. Bulletin of Materials Science, 2019, 42, 1.	1.7	10
269	Crepe cellulose paper and nitrocellulose membrane-based triboelectric nanogenerators for energy harvesting and self-powered human-machine interaction. Nano Energy, 2019, 61, 69-77.	16.0	142
270	A theoretical approach for optimizing sliding-mode triboelectric nanogenerator based on multi-parameter analysis. Nano Energy, 2019, 61, 442-453.	16.0	51
271	Recent advances in triboelectric nanogenerator based self-charging power systems. Energy Storage Materials, 2019, 23, 617-628.	18.0	160
272	A liquid PEDOT:PSS electrode-based stretchable triboelectric nanogenerator for a portable self-charging power source. Nanoscale, 2019, 11, 7513-7519.	5.6	55
273	Triboelectric nanogenerator by integrating a cam and a movable frame for ambient mechanical energy harvesting. Nano Energy, 2019, 60, 137-143.	16.0	63
274	Humidity-resistant triboelectric energy harvester using electrospun PVDF/PU nanofibers for flexibility and air permeability. Nanotechnology, 2019, 30, 275401.	2.6	21
275	Nanoscale investigation of improved triboelectric properties of UV-irradiated ultrananocrystalline diamond films. Nanoscale, 2019, 11, 6120-6128.	5.6	10

#	Article	IF	Citations
276	Lowâ€Voltage Operational, Lowâ€Power Consuming, and High Sensitive Tactile Switch Based on 2D Layered InSe Tribotronics. Advanced Functional Materials, 2019, 29, 1809119.	14.9	28
277	A High Performance Triboelectric Nanogenerator Using Porous Polyimide Aerogel Film. Scientific Reports, 2019, 9, 1370.	3.3	72
278	Nanogenerator for scavenging low frequency vibrations. Journal of Micromechanics and Microengineering, 2019, 29, 053001.	2.6	34
280	Stretchable Hybrid Bilayered Luminescent Composite Based on the Combination of Strain-Induced and Triboelectrification-Induced Electroluminescence. ACS Omega, 2019, 4, 20470-20475.	3.5	13
281	α- & β-crystalline phases in polyvinylidene fluoride as tribo-piezo active layer for nanoenergy harvester. High Performance Polymers, 2019, 31, 785-799.	1.8	5
282	Interaction of the human body with triboelectric nanogenerators. Nano Energy, 2019, 57, 279-292.	16.0	59
283	Chemically surface-engineered polydimethylsiloxane layer via plasma treatment for advancing textile-based triboelectric nanogenerators. Nano Energy, 2019, 57, 353-362.	16.0	81
284	Textileâ€Based Triboelectric Nanogenerators for Selfâ€Powered Wearable Electronics. Advanced Functional Materials, 2019, 29, 1804533.	14.9	148
285	Fullyâ€Enclosed Metal Electrodeâ€Free Triboelectric Nanogenerator for Scavenging Vibrational Energy and Alternatively Powering Personal Electronics. Advanced Engineering Materials, 2019, 21, 1800823.	3.5	21
286	Electrodeâ€Free Triboelectric Nanogenerator for Harvesting Human Biomechanical Energy and as a Versatile Inartificial Physiological Monitor. Energy Technology, 2019, 7, 1800931.	3.8	23
287	A general optimization approach for contact-separation triboelectric nanogenerator. Nano Energy, 2019, 56, 700-707.	16.0	70
288	Energy autonomous electronic skin. Npj Flexible Electronics, 2019, 3, .	10.7	245
289	Selfâ€Powered Tactile Sensor Array Systems Based on the Triboelectric Effect. Advanced Functional Materials, 2019, 29, 1806379.	14.9	122
290	Electrical analysis of triboelectric nanogenerator for high voltage applications exampled by DBD microplasma. Nano Energy, 2019, 56, 482-493.	16.0	64
291	Extremely high and elongated power output from a mechanical mediator-assisted triboelectric nanogenerator driven by the biomechanical energy. Nano Energy, 2019, 56, 851-858.	16.0	21
292	Prototype of energy harvesting door handles using polymer nanocomposite. Applied Nanoscience (Switzerland), 2020, 10, 1-13.	3.1	23
293	Building selfâ€powered emergency electronics based on hybrid nanogenerators for field survival/rescue. Energy Science and Engineering, 2020, 8, 574-581.	4.0	5
294	A flexible, ultra-highly sensitive and stable capacitive pressure sensor with convex microarrays for motion and health monitoring. Nano Energy, 2020, 70, 104436.	16.0	344

# 295	ARTICLE Enhancing the sensitivity of portable biosensors based on self-powered ion concentration polarization and electrical kinetic trapping. Nano Energy, 2020, 69, 104407.	IF 16.0	CITATIONS
296	Overview of Human Walking Induced Energy Harvesting Technologies and Its Possibility for Walking Robotics. Energies, 2020, 13, 86.	3.1	46
297	A universal and passive power management circuit with high efficiency for pulsed triboelectric nanogenerator. Nano Energy, 2020, 68, 104372.	16.0	133
298	3D double-faced interlock fabric triboelectric nanogenerator for bio-motion energy harvesting and as self-powered stretching and 3D tactile sensors. Materials Today, 2020, 32, 84-93.	14.2	226
299	Cylinderâ€based hybrid rotary nanogenerator for harvesting rotational energy from axles and selfâ€powered tire pressure monitoring. Energy Science and Engineering, 2020, 8, 291-299.	4.0	14
300	Smart Insole for Robust Wearable Biomechanical Energy Harvesting in Harsh Environments. ACS Nano, 2020, 14, 14126-14133.	14.6	107
301	Powering future body sensor network systems: A review of power sources. Biosensors and Bioelectronics, 2020, 166, 112410.	10.1	55
302	Improved Output Voltage of a Nanogenerator with 3D Fabric. Journal of Nanoscience and Nanotechnology, 2020, 20, 4666-4670.	0.9	6
303	Leverage Surface Chemistry for High-Performance Triboelectric Nanogenerators. Frontiers in Chemistry, 2020, 8, 577327.	3.6	45
304	Moistureâ€Enabled Electricity Generation: From Physics and Materials to Selfâ€Powered Applications. Advanced Materials, 2020, 32, e2003722.	21.0	175
305	Miura-origami-inspired electret/triboelectric power generator for wearable energy harvesting with water-proof capability. Microsystems and Nanoengineering, 2020, 6, 56.	7.0	40
306	Engineering Materials at the Nanoscale for Triboelectric Nanogenerators. Cell Reports Physical Science, 2020, 1, 100142.	5.6	130
307	Aerogel based nanogenerators: Production methods, characterizations and applications. International Journal of Energy Research, 2020, 44, 11088-11110.	4.5	9
308	A triboelectric nanogenerator based on human fingernail to harvest and sense body energy. Microelectronic Engineering, 2020, 232, 111408.	2.4	14
309	Electromagnetic-triboelectric-hybrid energy tile for biomechanical green energy harvesting. Nano Energy, 2020, 77, 105250.	16.0	39
310	A Fully Functional Universal Selfâ€Chargeable Power Module for Portable/Wearable Electronics and Selfâ€Powered IoT Applications. Advanced Energy Materials, 2020, 10, 2002782.	19.5	53
311	Recent advances in wearable textileâ€based triboelectric generator systems for energy harvesting from human motion. EcoMat, 2020, 2, e12054.	11.9	63
312	Recent Advances in Human Motion Excited Energy Harvesting Systems for Wearables. Energy Technology, 2020, 8, 2000533.	3.8	61

#	Article	IF	CITATIONS
313	Recent Advances in Selfâ€Powered Tribo″Piezoelectric Energy Harvesters: Allâ€Inâ€One Package for Future Smart Technologies. Advanced Functional Materials, 2020, 30, 2004446.	14.9	133
314	Two-dimensional graphitic carbon nitride nanosheets: a novel platform for flexible, robust and optically active triboelectric nanogenerators. Nanoscale, 2020, 12, 21334-21343.	5.6	29
315	Fully Biodegradable Water Droplet Energy Harvester Based on Leaves of Living Plants. ACS Applied Materials & Interfaces, 2020, 12, 56060-56067.	8.0	69
316	Material choices for triboelectric nanogenerators: A critical review. EcoMat, 2020, 2, e12062.	11.9	196
317	Recent progresses on paperâ€based triboelectric nanogenerator for portable <scp>selfâ€powered</scp> sensing systems. EcoMat, 2020, 2, e12060.	11.9	44
318	(Invited) Development of the High Performance Triboelectric Nanogenerator with a Mechanical Mediator for Its Practical Utilization. ECS Transactions, 2020, 97, 51-54.	0.5	0
319	Decentralized triboelectric electronic health monitoring flexible microdevice. Medical Devices & Sensors, 2020, 3, e10103.	2.7	8
320	Ultralow Quiescent Powerâ€Consumption Wakeâ€Up Technology Based on the Bionic Triboelectric Nanogenerator. Advanced Science, 2020, 7, 2000254.	11.2	21
321	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
322	Fatigue in piezoelectric ceramic vibrational energy harvesting: A review. Applied Energy, 2020, 270, 115161.	10.1	47
323	A novel approach to determining piezoelectric properties of nanogenerators based on PVDF nanofibers using iterative finite element simulation for walking energy harvesting. Journal of Industrial Textiles, 2022, 51, 531S-553S.	2.4	17
324	Cardiac energy harvesting and sensing based on piezoelectric and triboelectric designs. Nano Energy, 2020, 76, 105076.	16.0	63
325	Triboelectric Characterization of Colloidal TiO2 for Energy Harvesting Applications. Nanomaterials, 2020, 10, 1181.	4.1	12
327	Smart Textiles for Electricity Generation. Chemical Reviews, 2020, 120, 3668-3720.	47.7	644
328	The Relationship between Static Charge and Shape. ACS Central Science, 2020, 6, 704-714.	11.3	14
329	A novel hybridized blue energy harvester aiming at all-weather IoT applications. Nano Energy, 2020, 76, 105052.	16.0	86
330	Polarization-controlled PVDF-based hybrid nanogenerator for an effective vibrational energy harvesting from human foot. Nano Energy, 2020, 76, 105066.	16.0	59
331	Ternary Electrification Layered Architecture for High-Performance Triboelectric Nanogenerators. ACS Nano, 2020, 14, 9050-9058.	14.6	88

ARTICLE IF CITATIONS Monitoring and forecasting the development trends of nanogenerator technology using citation 332 16.0 25 analysis and text mining. Nano Energy, 2020, 71, 104636. Facile Tailoring of Contact Layer Characteristics of the Triboelectric Nanogenerator Based on Portable Imprinting Device. Materials, 2020, 13, 872. Transparent and flexible hybrid nanogenerator with welded silver nanowire networks as the 334 electrodes for mechanical energy harvesting and physiological signal monitoring. Smart Materials 3.5 25 and Structures, 2020, 29, 045040. Development of a Highâ€Performance Handheld Triboelectric Nanogenerator with a Lightweight Power 5.8 Transmission Unit. Advanced Materials Technologies, 2020, 5, 200003. Inductor-Free Output Multiplier for Power Promotion and Management of Triboelectric Nanogenerators toward Self-Powered Systems. ACS Applied Materials & amp; Interfaces, 2020, 12, 336 8.0 30 5892-5900. Hierarchically architected polydopamine modified BaTiO3@P(VDF-TrFE) nanocomposite fiber mats for 16.0 221 flexible piezoelectric nanogenerators and self-powered sensors. Nano Energy, 2020, 70, 104516. Study of vibrational droplet triboelectric nanogenerator on structural and operational parameters. 338 16.0 15 Nano Energy, 2020, 70, 104473. Material aspects of triboelectric energy generation and sensors. NPG Asia Materials, 2020, 12, . 200 Arrangement optimization of water-driven triboelectric nanogenerators considering capillary 340 3.3 8 phenomenon between hydrophobic surfaces. Scientific Reports, 2020, 10, 1126. 341 Small-Scale Energy Harvesting from Environment by Triboelectric Nanogenerators., 0,,. Biomechanical Energyâ€Driven Hybridized Generator as a Universal Portable Power Source for 19.5 342 63 Smart/Wearable Electronics. Advanced Energy Materials, 2020, 10, 1903663. An Energy Harvester for Lowâ€Frequency Electrical Signals. Energy Technology, 2020, 8, 2000114. 343 3.8 Triboelectric nanogenerator for entire stroke energy harvesting with bidirectional gear 344 16.0 48 transmission. Nano Energy, 2020, 72, 104726. Piezoelectric boron nitride nanosheets for high performance energy harvesting devices. Nano Energy, 345 16.0 49 2021, 80, 105561. Design and optimization of MEMS piezoelectric energy harvester for low frequency applications. 346 2.0 13 Microsystem Technologies, 2021, 27, 251-261. Conductive elastic sponge-based triboelectric nanogenerator (TENG) for effective random mechanical 347 energy harvesting and ammonia sensing. Nano Energy, 2021, 79, 105422. Sandwich as a triboelectric nanogenerator. Nano Energy, 2021, 79, 105411. 348 16.0 33 Research methodsÂof contact electrification: Theoretical simulation and experiment. Nano Energy, 349 2021, 79, 105501.

		CITATION RE	PORT	
#	Article		IF	CITATIONS
350	Triboelectric nanogenerators for human-health care. Science Bulletin, 2021, 66, 490-5	11.	9.0	93
351	Wood-cellulose-fiber-based functional materials for triboelectric nanogenerators. Nanc 2021, 81, 105637.	Energy,	16.0	141
352	Design, manufacturing and applications of wearable triboelectric nanogenerators. Nan 81, 105627.	o Energy, 2021,	16.0	86
353	Performance enhancement of triboelectric nanogenerator through hole and electron b layers-based interfacial design. Nano Energy, 2021, 82, 105694.	locking	16.0	20
354	Waste Plastic Triboelectric Nanogenerators Using Recycled Plastic Bags for Power Gen Applied Materials & Interfaces, 2021, 13, 400-410.	eration. ACS	8.0	116
355	Exo-shoe triboelectric nanogenerator: Toward high-performance wearable biomechanic harvester. Nano Energy, 2021, 80, 105525.	al energy	16.0	81
356	Nature-inspired PDMS cumulonimbus micro-energy-harvesting cloud. Applied Nanoscie (Switzerland), 2021, 11, 127-137.	nce	3.1	7
357	A compact model for the zigzag triboelectric nanogenerator energy harvester. Internat of Energy Research, 2021, 45, 1645-1660.	ional Journal	4.5	6
358	Integrated energy storage system based on triboelectric nanogenerator in electronic d Frontiers of Chemical Science and Engineering, 2021, 15, 238-250.	evices.	4.4	86
359	Self-powered, rapid-response, and highly flexible nanosensors. , 2021, , 397-415.			2
361	Advances in self-powered chemical sensing <i>via</i> a triboelectric nanogenerator. Nat 13, 2065-2081.	noscale, 2021,	5.6	81
362	Advances in Nanostructures for Highâ€Performance Triboelectric Nanogenerators. Adv Technologies, 2021, 6, 2000916.	anced Materials	5.8	94
363	Nanogenerators: a new paradigm in blue energy harvesting. , 2021, , 171-193.			2
364	Triboelectric Sensors for IoT and Wearable Applications. , 2023, , 235-257.			6
365	Small-Scale Energy Harvesting Devices for Smart Electronics. , 2021, , 391-425.			0
366	Materialsâ€Related Strategies for Highly Efficient Triboelectric Energy Generators. Adv. Materials, 2021, 11, 2003802.	anced Energy	19.5	73
367	Nanotechnology for green energy and sustainable future. , 2021, , 521-533.			0
368	From Fiber to Fabric: Progress Towards Photovoltaic Energy Textile. Advanced Fiber Ma 76-106.	iterials, 2021, 3,	16.1	36

#	Article	IF	CITATIONS
369	MXenes: An Emerging Platform for Wearable Electronics and Looking Beyond. Matter, 2021, 4, 377-407.	10.0	125
370	Magnetic Force Enhanced Sustainability and Power of Cam-Based Triboelectric Nanogenerator. Research, 2021, 2021, 6426130.	5.7	10

TRİBOELEKTRİK NANOJENERATÖRLER İLE ENERJİ HASADI: TEORİK KÖKEN, ÇALIÅžMA PRENSİBİ VE ÇALIÅŽMA MODLARI.
Konya Journal of Engineering Sciences, 2021, 9, 232-249.

372	Leveraging triboelectric nanogenerators for bioengineering. Matter, 2021, 4, 845-887.	10.0	192
373	Flexible Piezoelectric Nanogenerators Based on P(VDF-TrFE)/CsPbBr <sub>3</sub> Quantum Dot Composite Films. ACS Applied Electronic Materials, 2021, 3, 2136-2144.	4.3	33
374	Nonlinear multi-mode electromagnetic insole energy harvester for human-powered body monitoring sensors: Design, modeling, and characterization. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2021, 235, 6415-6426.	2.1	5
375	Hand-held piezoelectric energy harvesting structure: Design, dynamic analysis, and experimental validation. Measurement: Journal of the International Measurement Confederation, 2021, 174, 109011.	5.0	19
376	Recent Progress on Energy Harvesters for Biomedical Applications. Journal of Circuits, Systems and Computers, 2021, 30, .	1.5	7
377	Origin of the contact force-dependent response of triboelectric nanogenerators. Nano Energy, 2021, 83, 105829.	16.0	70
378	Buckled Fiber Conductors with Resistance Stability under Strain. Advanced Fiber Materials, 2021, 3, 149-159.	16.1	23
379	KPFM Study of Flexible Ferroelectric Polymer/Water Interface for Understanding the Working Principle of Liquid–Solid Triboelectric Nanogenerator. Advanced Materials Interfaces, 2021, 8, 2100032.	3.7	13
380	Highâ€Linearity, Responseâ€Range Adjustable Force Sensors Based on a Yarn/Film/Spacer Triboelectric Device Design. Advanced Materials Technologies, 2021, 6, 2100203.	5.8	11
381	Bioinspired Distributed Energy in Robotics and Enabling Technologies. Advanced Intelligent Systems, 2023, 5, 2100036.	6.1	21
382	Effects of particle size of dielectric fillers on the output performance of piezoelectric and triboelectric nanogenerators. Journal of Advanced Ceramics, 2021, 10, 991-1000.	17.4	27
383	Bioinspired Energy Storage and Harvesting Devices. Advanced Materials Technologies, 2021, 6, 2001301.	5.8	11
384	Hierarchical Honeycomb-Structured Electret/Triboelectric Nanogenerator for Biomechanical and Morphing Wing Energy Harvesting. Nano-Micro Letters, 2021, 13, 123.	27.0	80
385	Thin, soft, <scp>garmentâ€integrated</scp> triboelectric nanogenerators for energy harvesting and human machine interfaces. EcoMat, 2021, 3, e12123.	11.9	15
386	Soft triboelectric nanogenerators for mechanical energy scavenging and self-powered sensors. Nano Energy, 2021, 84, 105919.	16.0	80

#	Article	IF	CITATIONS
387	Bioinspired designs and biomimetic applications of triboelectric nanogenerators. Nano Energy, 2021, 84, 105865.	16.0	53
388	Wearable Triboelectric Strain-Insensitive Pressure Sensors Based on Hierarchical Superposition Patterns. ACS Sensors, 2021, 6, 2411-2418.	7.8	30
389	Combination of Piezoelectric and Triboelectric Devices for Robotic Self-Powered Sensors. Micromachines, 2021, 12, 813.	2.9	18
390	KNN based piezo-triboelectric lead-free hybrid energy films. Nano Energy, 2021, 86, 106133.	16.0	37
391	Enhanced swing electromagnetic energy harvesting from human motion. Energy, 2021, 228, 120591.	8.8	54
392	Magnetic-interaction assisted hybridized triboelectric-electromagnetic nanogenerator for advanced human-machine interfaces. Nano Energy, 2021, 86, 106154.	16.0	45
393	Flexible and Extendable Honeycomb‧haped Triboelectric Nanogenerator for Effective Human Motion Energy Harvesting and Biomechanical Sensing. Advanced Materials Technologies, 2022, 7, 2100702.	5.8	27
394	Using non-contact eccentric nanogenerator to collect energy continuously under periodic vibration. Nano Energy, 2021, 87, 106159.	16.0	13
395	Perspectives in flow-induced vibration energy harvesting. Applied Physics Letters, 2021, 119, 100502.	3.3	58
396	Information accessibility oriented self-powered and ripple-inspired fingertip interactors with auditory feedback. Nano Energy, 2021, 87, 106117.	16.0	7
397	All-in-One High Output Rotary Electrostatic Nanogenerators Based on Charge Pumping and Voltage Multiplying. ACS Nano, 2021, 15, 16861-16869.	14.6	14
398	Bio-waste sunflower husks powder based recycled triboelectric nanogenerator for energy harvesting. Energy Reports, 2021, 7, 724-731.	5.1	61
399	Bacterial cellulose nanofiber triboelectric nanogenerator based on dielectric particles hybridized system. Composites Part A: Applied Science and Manufacturing, 2021, 151, 106646.	7.6	30
400	Displacement Current-Based Energy Harvesters in Power Grids: Topologies and Performance Evaluation. IEEE Industrial Electronics Magazine, 2022, 16, 52-66.	2.6	8
401	3D Multiscale Gradient Pores Impregnated with Ag Nanowires for Simultaneous Pressure and Bending Detection with Enhanced Linear Sensitivity. Advanced Materials Technologies, 2020, 5, 1901041.	5.8	5
402	In-Depth Analysis of Structures, Materials, Models, Parameters, and Applications of Organic Light-Emitting Diodes. Journal of Electronic Materials, 2020, 49, 4610-4636.	2.2	31
403	Electrical energy harvesting from ferritin biscrolled carbon nanotube yarn. Biosensors and Bioelectronics, 2020, 164, 112318.	10.1	19
404	Theories for triboelectric nanogenerators: A comprehensive review. Nanotechnology Reviews, 2020, 9, 610-625.	5.8	59

CITAT	TION	DEDODT
CITA	I I U N	REPORT

#	Article	IF	CITATIONS
405	Triboelectricity and construction of power generators based on it. Przeglad Elektrotechniczny, 2018, 1, 169-173.	0.2	7
406	Cost Effective Fabrication of a Triboelectric Energy Harvester Using Soft Lithography. Applied Science and Convergence Technology, 2013, 22, 198-203.	0.9	1
407	Low-cost fabrication of the highly efficient triboelectric nanogenerator by designing a 3D multi-layer origami structure combined with self-charged pumping module. Nano Energy, 2021, 90, 106629.	16.0	9
408	Testing the Piezoelectric Energy Harvester's Deflection on the Amount of Generated Energy. Advances in Intelligent Systems and Computing, 2016, , 95-112.	0.6	2
409	Electromagnetic-triboeletric hybridized generator based on magnetic levitation for scavenging biomechanical energy. Wuli Xuebao/Acta Physica Sinica, 2017, 66, 228401.	0.5	2
411	Modeling and analysis of energy extraction circuits for triboelectric nanogenerator based vibrational energy harvesting. , 2018, , .		7
412	A Novel Triboelectric Material Based on Deciduous Leaf for Energy Harvesting. Micromachines, 2021, 12, 1314.	2.9	2
413	Advanced self-charging power packs: The assimilation of energy harvesting and storage systems. , 2022, , 441-477.		1
414	A Mechanical Energy Writeable Ferroelectric Memory Based on PMN-35PT Single Crystal. Springer Theses, 2020, , 75-101.	0.1	0
415	A Triboelectric Nanogenerator Design for the Utilization of Multi-Axial Mechanical Energies in Human Motions. Journal of Sensor Science and Technology, 2020, 29, 312-322.	0.2	3
416	Engraved pattern spacer triboelectric nanogenerators for mechanical energy harvesting. Nano Energy, 2022, 92, 106782.	16.0	16
417	An Electret/Hydrogel-Based Tactile Sensor Boosted by Micro-Patterned and Electrostatic Promoting Methods with Flexibility and Wide-Temperature Tolerance. Micromachines, 2021, 12, 1462.	2.9	7
418	Dielectric-elastomer-enhanced triboelectric nanogenerator with amplified outputs. Sensors and Actuators A: Physical, 2022, 333, 113270.	4.1	11
419	An approach combining additive manufacturing and dielectrophoresis for 3D-structured flexible lead-free piezoelectric composites for electromechanical energy conversion. Journal of Materials Chemistry A, 2021, 9, 26767-26776.	10.3	13
420	Yoyo-ball inspired triboelectric nanogenerators for harvesting biomechanical energy. Applied Energy, 2022, 308, 118322.	10.1	10
421	Self-powered antibacterial systems in environmental purification, wound healing, and tactile sensing applications. Nano Energy, 2022, 93, 106826.	16.0	8
422	Fabric-rebound triboelectric nanogenerators with loops and layered structures for energy harvesting and intelligent wireless monitoring of human motions. Nano Energy, 2022, 93, 106807.	16.0	28
423	Fish Gills Inspired Parallel-Cell Triboelectric Nanogenerator. SSRN Electronic Journal, 0, , .	0.4	0

#	Article	IF	CITATIONS
424	Mechanical Conversion and Transmission Systems for Controlling Triboelectric Nanogenerators. Nanoenergy Advances, 2022, 2, 29-51.	7.7	6
425	Construction of MXene/PDMSâ€Based Triboelectric Nanogenerators for Highâ€Performance Cathodic Protection. Advanced Materials Interfaces, 2022, 9, .	3.7	15
426	A textile-based triboelectric nanogenerator for long jump monitoring. Materials Technology, 2022, 37, 2360-2367.	3.0	8
427	A simple and low-cost triboelectric nanogenerator based on two dimensional ZnO nanosheets and its application in portable electronics. Sensors and Actuators A: Physical, 2022, 335, 113368.	4.1	33
428	Cocklebur-structured design of plant fibers for high-performance triboelectric nanogenerators and pressure sensors. Materials Today Communications, 2022, 30, 103208.	1.9	8
429	Fish gills inspired parallel-cell triboelectric nanogenerator. Nano Energy, 2022, 95, 106976.	16.0	29
430	Synchronous nanogenerator with intermittent sliding friction self-excitation for water wave energy harvesting. Nano Energy, 2022, 95, 106994.	16.0	21
431	A triboelectric nanogenerator for mechanical energy harvesting and as self-powered pressure sensor. Microelectronic Engineering, 2022, 257, 111725.	2.4	10
432	Output signals control of triboelectric nanogenerator with metal-dielectric-metal configuration through high resistance grounded systems. Nano Energy, 2022, 95, 107023.	16.0	8
433	Hydrophobic MAO/FSG coating based TENG for self-healable energy harvesting and self-powered cathodic protection. Science China Technological Sciences, 2022, 65, 726-734.	4.0	9
434	Synchronous Nanogenerator With Intermittent Sliding Friction Self-Excitation for Water Wave Energy Harvesting. SSRN Electronic Journal, 0, , .	0.4	0
435	Output Signals Control of Triboelectric Nanogenerator with Metal-Dielectric-Metal Configuration Through High Resistance Grounded Systems. SSRN Electronic Journal, 0, , .	0.4	0
436	Microplastic Removal in Water Via Triboelectric Nanogenerator. SSRN Electronic Journal, 0, , .	0.4	0
437	Tipping-Bucket Self-Powered Rain Gauge Based on Triboelectric Nanogenerators for Rainfall Measurement. SSRN Electronic Journal, 0, , .	0.4	0
438	A Triboelectric Nanogenerator Based on PDMS and Parafilm For Biomechanical Energy Harvesting. , 2022, , .		0
439	2D Materials for Wearable Energy Harvesting. Advanced Materials Technologies, 2022, 7, .	5.8	16
440	Waterbomb-origami inspired triboelectric nanogenerator for smart pavement-integrated traffic monitoring. Nano Research, 2022, 15, 5450-5460.	10.4	25
441	Multilayer flexible electronics: Manufacturing approaches and applications. Materials Today Physics, 2022, 23, 100647.	6.0	23

#	Article	IF	CITATIONS
442	Tipping-bucket self-powered rain gauge based on triboelectric nanogenerators for rainfall measurement. Nano Energy, 2022, 98, 107234.	16.0	14
443	Harvesting circuits for triboelectric nanogenerators for wearable applications. IScience, 2022, 25, 103977.	4.1	15
444	Lever-inspired triboelectric nanogenerator with ultra-high output for pulse monitoring. Nano Energy, 2022, 97, 107159.	16.0	8
445	A novel ZnS nanosheets-based triboelectric nanogenerator and its applications in sensing, self-powered electronics, and digital systems. Materials Today Communications, 2022, 31, 103292.	1.9	10
446	Recent Advances in Sustainable Wearable Energy Devices with Nanoscale Materials and Macroscale Structures. Advanced Functional Materials, 2022, 32, .	14.9	43
447	Rolling Spherical Triboelectric Nanogenerators (RS-TENG) under Low-Frequency Ocean Wave Action. Journal of Marine Science and Engineering, 2022, 10, 5.	2.6	25
448	Contact-Separation Mode Electret Generator Supported by Magnets. , 2021, , .		0
449	A Triboelectric Sensor with a Dual Working Unit for Race Walking Motion Monitoring. Journal of Electronic Materials, 2022, 51, 3569-3578.	2.2	7
450	Progress of flexible strain sensors for physiological signal monitoring. Biosensors and Bioelectronics, 2022, 211, 114298.	10.1	59
451	Recent advancements for improving the performance of triboelectric nanogenerator devices. Nano Energy, 2022, 99, 107318.	16.0	76
452	A Review on Epidermal Nanogenerators: Recent Progress of the Future Selfâ€Powered Skins. Small Structures, 2022, 3, .	12.0	5
453	Investigations on the contact-electro-catalysis under various ultrasonic conditions and using different electrification particles. Nano Energy, 2022, 99, 107346.	16.0	30
454	Controllable and Scalable Fabrication of Superhydrophobic Hierarchical Structures for Water Energy Harvesting. Electronics (Switzerland), 2022, 11, 1651.	3.1	9
455	A Low ost Simple Sliding Triboelectric Nanogenerator for Harvesting Energy from Human Activities. Advanced Materials Technologies, 2022, 7, .	5.8	13
456	Human body IoT systems based on the triboelectrification effect: energy harvesting, sensing, interfacing and communication. Energy and Environmental Science, 2022, 15, 3688-3721.	30.8	93
457	High Performance Liquid-Solid Tubular Triboelectric Nanogenerator for Scavenging Water Wave Energy. SSRN Electronic Journal, 0, , .	0.4	0
458	Toxic micro/nano particles removal in water via triboelectric nanogenerator. Nano Energy, 2022, 100, 107433.	16.0	17
459	Performance analysis and application of a hybrid electromagnetic-triboelectric nanogenerator for energy harvesting. Energy Reports, 2022, 8, 9184-9200.	5.1	5

		CITATION REPORT		
#	Article		IF	CITATIONS
460	Self-powered and self-sensing devices based on human motion. Joule, 2022, 6, 1501-1	565.	24.0	70
461	Bio-based epoxidized natural rubber/chitosan/cellulose nanocrystal composites for enh mechanical properties, self-healing behavior and triboelectric nanogenerator performar Cellulose, 2022, 29, 8675-8693.	ancing hce.	4.9	17
462	Photomechaelectric nanogenerator. Matter, 2022, 5, 3977-3996.		10.0	7
463	A TiO <sub>2</sub> Nanotube Coating Based TENG with Selfâ€Healable Triboelectric P Harvesting and Antiâ€Corrosion. Advanced Materials Interfaces, 2022, 9, .	roperty for Energy	3.7	6
464	Nanogenerators integrated self-powered multi-functional wings for biomimetic micro f Nano Energy, 2022, 101, 107627.	lying robots.	16.0	5
465	Enhancement of the performance of flexible lead-free nanogenerators by doping in BaT nanoparticles. Energy, 2022, 261, 125169.	103	8.8	7
466	Chemical structure-based design of triboelectric materials for high-performance TENGs 2022, 103, 107847.	. Nano Energy,	16.0	12
467	High performance liquid-solid tubular triboelectric nanogenerator for scavenging water energy. Nano Energy, 2022, 103, 107810.	. wave	16.0	14
468	Highly transparent and water-repellent hierarchical-wrinkled-architecture triboelectric nanogenerator with ultrathin plasma-polymer-fluorocarbon film for artificial triboelectri Nano Energy, 2022, 103, 107785.	ic skin.	16.0	8
469	Kinetic energy harvesting based sensing and IoT systems: A review. Frontiers in Electro	nics, 0, 3, .	3.2	6
470	Advances in Bioinspired Triboelectric Nanogenerators. Advanced Electronic Materials, 2	2022, 8, .	5.1	18
471	A Moistureâ€Induced Electric Generator with High Output Voltage for Selfâ€Powered Electronics. ChemNanoMat, 2022, 8, .	Wearable	2.8	4
472	Sisal cellulose paper based triboelectric nanogenerator with high performance for dete chemical group substitution degree. Nano Energy, 2022, 104, 107937.	ction of	16.0	12
473	Triboelectric Generator Based on Oriented Self-Assembled Peptide Microbelts. Nanoma 3955.	terials, 2022, 12,	4.1	0
474	A volatile organic compound free unibody triboelectric nanogenerator and its applicati green track. Nano Energy, 2023, 105, 108001.	on as a smart	16.0	2
475	Surface patterning strategies for performance enhancement in triboelectric nanogener in Engineering, 2022, 16, 100756.	ators. Results	5.1	9
476	Triboelectric Nanogenerator for Healthcare. , 2023, , 1-50.			0
477	Cellulose-based superhydrophobic wrinkled paper and electrospinning film as green tri water wave energy harvesting. International Journal of Biological Macromolecules, 202	bolayer for 3, 234, 122903.	7.5	6

#	Article	IF	CITATIONS
478	Triboelectric nanogenerators for wind energy harvesting. , 2022, , .		0
479	Piezoelectric soft robot driven by mechanical energy. Nano Research, 2023, 16, 4970-4979.	10.4	1
480	Economical Polypropyleneâ€Based Triboelectric Nanogenerator for Selfâ€Powered Biomechanical Sensor Application. Physica Status Solidi (A) Applications and Materials Science, 2023, 220, .	1.8	2
481	PPV–PCBM bulk heterojunction organic solar cell to power modern pacemakers. Journal of Materials Research, 2023, 38, 1304-1316.	2.6	1
482	Harvesting Water Wave Energy by Triboelectric Nanogenerators. , 2023, , 1-36.		0
483	Remoteâ€Controlled Droplet Chainsâ€Based Electricity Generators. Advanced Energy Materials, 2023, 13, .	19.5	17
484	Boosting the Durability of Triboelectric Nanogenerators: A Critical Review and Prospect. Advanced Functional Materials, 2023, 33, .	14.9	9
485	High-Output Wearable Flow Ring-Based Triboelectric Nanogenerator via Opposite Charging Intermediate Layer. International Journal of Energy Research, 2023, 2023, 1-8.	4.5	0
486	Rotation-mode liquid-solid triboelectric nanogenerator for efficient contact-electro-catalysis and adsorption. Nano Energy, 2023, 110, 108329.	16.0	4
487	An electromagnetic energy harvester with a half-wave rectification mechanism for military personnel. Sustainable Energy Technologies and Assessments, 2023, 57, 103184.	2.7	6
488	Circuit representation, experiment and analysis of parallel-cell triboelectric nanogenerator. Energy Conversion and Management, 2023, 278, 116741.	9.2	2
489	Flexible organic solar cell to power modern cardiac pacemakers: Versatile for all age groups, skin types and genders. Physica Scripta, 2023, 98, 035018.	2.5	6
490	Review: materials for biocompatible tribo-piezo nanogenerators. Journal of Materials Science, 2023, 58, 7809-7838.	3.7	1
491	Improving the Durability of Triboelectric Nanogenerator. , 2023, , 1-37.		0
492	Asymmetric-elastic-structure fabric-based triboelectric nanogenerators for wearable energy harvesting and human motion sensing. Chemical Engineering Journal, 2023, 466, 143079.	12.7	16
493	Recent Advances in Carbon Nanotubeâ€Based Energy Harvesting Technologies. Advanced Materials, 2023, 35, .	21.0	2
495	Charges Transfer in Interfaces for Energy Generating. Small Methods, 0, , .	8.6	5
496	Fabrication of high-performance moisture-electric generators via synergistic effect between CNTs and TiO2 on porous PU structure. Composites Science and Technology. 2023. 241. 110105.	7.8	1

#	Article	IF	CITATIONS
497	Advanced polymer materialsâ€based electronic skins for tactile and nonâ€contact sensing applications. InformaÄnĂ-Materiály, 2023, 5, .	17.3	9
498	Conductive hydrogels for bioenergy harvesting and self-powered application. Progress in Materials Science, 2023, 138, 101156.	32.8	15
499	A Review of Piezoelectric Footwear Energy Harvesters: Principles, Methods, and Applications. Sensors, 2023, 23, 5841.	3.8	7
500	Recent Progress in Self-Powered Sensors Based on Liquid–Solid Triboelectric Nanogenerators. Sensors, 2023, 23, 5888.	3.8	4
501	Fundamental Understanding of Multicellular Triboelectric Nanogenerator with Different Electrical Configurations. Micromachines, 2023, 14, 1333.	2.9	2
502	Hybridized Triboelectric-Electromagnetic Aeolian Vibration Generator as a Self-Powered System for Efficient Vibration Energy Harvesting and Vibration Online Monitoring of Transmission Lines. ACS Applied Materials & Interfaces, 2023, 15, 34764-34778.	8.0	2
503	Enhancing the powering ability of triboelectric nanogenerator through output signal's management strategies. Nano Research, 2023, 16, 11783-11800.	10.4	6
504	Recent progress in energy harvesting systems for wearable technology. Energy Strategy Reviews, 2023, 49, 101124.	7.3	16
505	Ecoflex Flexible Array of Triboelectric Nanogenerators for Gait Monitoring Alarm Warning Applications. Electronics (Switzerland), 2023, 12, 3226.	3.1	1
506	Application of Triboelectric Nanogenerators on Manipulators. IEEE Access, 2023, 11, 80151-80171.	4.2	1
507	Evolution of Thermoelectric Generators: From Application to Hybridization. Small, 2023, 19, .	10.0	6
508	Constructing origami power generator from one piece of electret thin film and application in Al-enabled transmission line vibration monitoring. Microsystems and Nanoengineering, 2023, 9, .	7.0	0
509	Triboelectric nanogenerator assisted synthesis and detection of chemical compounds. Journal of Materials Chemistry A, 2023, 11, 19244-19280.	10.3	2
510	Harvesting Water Wave Energy by Triboelectric Nanogenerators. , 2023, , 1079-1114.		0
511	Triboelectric Nanogenerator for Healthcare. , 2023, , 627-676.		0
512	Improving the Durability of Triboelectric Nanogenerator. , 2023, , 349-385.		0
513	Nano Groove and Prism-Structured Triboelectric Nanogenerators. Micromachines, 2023, 14, 1707.	2.9	0
514	Factors affecting the performance of flexible triboelectric nanogenerators (F-TENGs) and their sensing capabilities: A comprehensive review. Nano Energy, 2023, 118, 108983.	16.0	5

#	Article	IF	CITATIONS
515	Curved Architected Triboelectric Metamaterials: Auxeticityâ€Enabled Enhanced Figureâ€ofâ€Merit. Advanced Functional Materials, 2023, 33, .	14.9	0
516	Polyaniline Nanostructures Embedded Ethylcellulose Conductive Polymer Composite Films-Based Triboelectric Nanogenerators for Mechanical Energy Harvesting and Self-Powered Electronics. ACS Applied Polymer Materials, 2023, 5, 8650-8659.	4.4	0
517	Empowering Sustainability: Harnessing Textile Triboelectric Nanogenerators for Green Energy Harvesting. E3S Web of Conferences, 2023, 436, 08015.	0.5	0
518	A Review of Multifunctional Nanocomposite Fibers: Design, Preparation and Applications. Advanced Fiber Materials, 0, , .	16.1	0
519	Miniature battery-free bioelectronics. Science, 2023, 382, .	12.6	2
520	Robust Nanogenerators Based on Tribo-Positive Graft Copolymers of Tribo-Negative Poly(vinylidene) Tj ETQq1 1	0.784314 4.3	rgBT /Overlo
521	Transduction of UV-light energy into alternating-current electricity via a neglected internal photoelectric effect of metal foil-based nanogenerator. Nano Energy, 2024, 120, 109174.	16.0	0
522	A Self-powered Neural Stimulator Based on Programmable Triboelectric Nanogenerators. , 2023, , .		0
523	Laser processing for electricity generators: Physics, methods and applications. Nano Energy, 2024, 120, 109182.	16.0	0
524	Evaporation Triboelectricâ€Nanogenerator: Harvesting Lowâ€Grade Heat Energy from Ambient Environment. Advanced Materials Technologies, 2024, 9, .	5.8	Ο
525	Progress in techniques for improving the output performance of triboelectric nanogenerators. Energy and Environmental Science, 2024, 17, 885-924.	30.8	2
526	Biomimetic Exogenous "Tissue Batteries―as Artificial Power Sources for Implantable Bioelectronic Devices Manufacturing. Advanced Science, 2024, 11, .	11.2	1
527	A Comprehensive Review of Advancements and Challenges from Solid–Solid to Liquid–Solid Triboelectric Nanogenerators. Advanced Materials Technologies, 2024, 9, .	5.8	0
528	Boosting Free-Rotating Disk Triboelectric Nanogenerator through Alcohol-Soluble Nylon Film, Preventing Air Breakdown. ACS Applied Electronic Materials, 2024, 6, 376-385.	4.3	Ο
529	Laser additive manufacturing of Miura-origami tube inspired quasi-zero stiffness metamaterial with prominent longitudinal wave propagation. Virtual and Physical Prototyping, 2024, 19, .	10.4	0
530	Thermal-stable and high-dielectric Ba(Cu W )O -based ceramic Powder/PMDS films for triboelectric nanogenerator. Ceramics International, 2024, 50, 12778-12786.	4.8	0
531	Water-evaporation induced electricity generation inspired by natural tree transpiration. Sustainable Materials and Technologies, 2024, 39, e00836.	3.3	0
532	Recent Advances in Self-Powered Electronic Skin Based on Triboelectric Nanogenerators. Energies, 2024, 17, 638.	3.1	0

#	Article	IF	CITATIONS
533	Recent Advances in Implantable Neural Interfaces for Multimodal Electrical Neuromodulation. Advanced Healthcare Materials, 0, , .	7.6	0
534	A Triboelectric Nanogenerator Based on Bamboo Leaf for Biomechanical Energy Harvesting and Self-Powered Touch Sensing. Electronics (Switzerland), 2024, 13, 766.	3.1	0
535	Flowing Liquid-Based Triboelectric Nanogenerator Performance Enhancement with Functionalized Polyvinylidene Fluoride Membrane for Self-Powered Pulsating Flow Sensing Application. Polymers, 2024, 16, 536.	4.5	0
536	Synergistic effects of rGO functionalization in nanocomposite-based triboelectric nanogenerators for enhanced energy harvesting. Sensors and Actuators A: Physical, 2024, 370, 115200.	4.1	0
537	Self-Powered Flow Rate Sensing via a Single-Electrode Flowing Liquid Based Triboelectric Nanogenerator. Micromachines, 2024, 15, 384.	2.9	0
538	High Performance Triboelectric Energy Harvester: Design and Optimization Using GA and Cuttle Fish Algorithm. Advances in Computational Intelligence and Robotics Book Series, 2024, , 228-249.	0.4	0