

Xiaobing Yan

List of Publications by Year in descending order

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106
papers

4,645
citations

109137

35
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106150

65
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106
all docs

106
docs citations

106
times ranked

3881
citing authors

#	ARTICLE	IF	CITATIONS
1	Memristor with Ag-Cluster-Doped TiO ₂ Films as Artificial Synapse for Neuroinspired Computing. <i>Advanced Functional Materials</i> , 2018, 28, 1705320.	7.8	318
2	Vacancy-Induced Synaptic Behavior in 2D WS ₂ Nanosheet-Based Memristor for Low-Power Neuromorphic Computing. <i>Small</i> , 2019, 15, e1901423.	5.2	252
3	Self-Assembled Networked PbS Distribution Quantum Dots for Resistive Switching and Artificial Synapse Performance Boost of Memristors. <i>Advanced Materials</i> , 2019, 31, e1805284.	11.1	221
4	Graphene Oxide Quantum Dots Based Memristors with Progressive Conduction Tuning for Artificial Synaptic Learning. <i>Advanced Functional Materials</i> , 2018, 28, 1803728.	7.8	218
5	The Rise of 2D Photothermal Materials beyond Graphene for Clean Water Production. <i>Advanced Science</i> , 2020, 7, 1902236.	5.6	206
6	The Future of Memristors: Materials Engineering and Neural Networks. <i>Advanced Functional Materials</i> , 2021, 31, 2006773.	7.8	187
7	A New Memristor with 2D Ti ₃ C ₂ T _x MXene Flakes as an Artificial Bio-Synapse. <i>Small</i> , 2019, 15, e1900107.	5.2	142
8	Current-induced magnetization switching in all-oxide heterostructures. <i>Nature Nanotechnology</i> , 2019, 14, 939-944.	15.6	139
9	Epitaxial Ferroelectric Hf _{0.5} Zr _{0.5} O ₂ Thin Films and Their Implementations in Memristors for Brain-Inspired Computing. <i>Advanced Functional Materials</i> , 2018, 28, 1806037.	7.8	138
10	Robust Ag/ZrO ₂ /WS ₂ /Pt Memristor for Neuromorphic Computing. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 48029-48038.	4.0	123
11	Control of Synaptic Plasticity Learning of Ferroelectric Tunnel Memristor by Nanoscale Interface Engineering. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 12862-12869.	4.0	109
12	Overview of Resistive Random Access Memory (RRAM): Materials, Filament Mechanisms, Performance Optimization, and Prospects. <i>Physica Status Solidi - Rapid Research Letters</i> , 2019, 13, 1900073.	1.2	109
13	Flexible Graphene Electrodes for Prolonged Dynamic ECG Monitoring. <i>Sensors</i> , 2016, 16, 1833.	2.1	105
14	Current status and prospects of memristors based on novel 2D materials. <i>Materials Horizons</i> , 2020, 7, 1495-1518.	6.4	101
15	Superior resistive switching memory and biological synapse properties based on a simple TiN/SiO ₂ /p-Si tunneling junction structure. <i>Journal of Materials Chemistry C</i> , 2017, 5, 2259-2267.	2.7	97
16	Continuously controllable photoconductance in freestanding BiFeO ₃ by the macroscopic flexoelectric effect. <i>Nature Communications</i> , 2020, 11, 2571.	5.8	93
17	Two-Dimensional Borophene: Properties, Fabrication, and Promising Applications. <i>Research</i> , 2020, 2020, 2624617.	2.8	93
18	Artificial Visual Perception Nervous System Based on Low-Dimensional Material Photoelectric Memristors. <i>ACS Nano</i> , 2021, 15, 17319-17326.	7.3	92

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19	Flexible memristors as electronic synapses for neuro-inspired computation based on scotch tape-exfoliated mica substrates. <i>Nano Research</i> , 2018, 11, 1183-1192.	5.8	91
20	Ferroic tunnel junctions and their application in neuromorphic networks. <i>Applied Physics Reviews</i> , 2020, 7, .	5.5	91
21	Flexible Transparent Organic Artificial Synapse Based on the Tungsten/Egg Albumen/Indium Tin Oxide/Polyethylene Terephthalate Memristor. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 18654-18661.	4.0	77
22	Silk Flexible Electronics: From <i>Bombyx mori</i> Silk Ag Nanoclusters Hybrid Materials to Mesoscopic Memristors and Synaptic Emulators. <i>Advanced Functional Materials</i> , 2019, 29, 1904777.	7.8	71
23	A Pure 2H-MoS_2 Nanosheet-Based Memristor with Low Power Consumption and Linear Multilevel Storage for Artificial Synapse Emulator. <i>Advanced Electronic Materials</i> , 2020, 6, 1901342.	2.6	67
24	Highly improved performance in $\text{Zr}_{0.5}\text{Hf}_{0.5}\text{O}_2$ films inserted with graphene oxide quantum dots layer for resistive switching non-volatile memory. <i>Journal of Materials Chemistry C</i> , 2017, 5, 11046-11052.	2.7	66
25	MXene Ti_3C_2 memristor for neuromorphic behavior and decimal arithmetic operation applications. <i>Nano Energy</i> , 2021, 79, 105453.	8.2	58
26	Designing carbon conductive filament memristor devices for memory and electronic synapse applications. <i>Materials Horizons</i> , 2020, 7, 1106-1114.	6.4	57
27	Artificial electronic synapse characteristics of a Ta/Ta $_{2}\text{O}_5$ -x/Al $_{2}\text{O}_3$ /InGaZnO $_4$ memristor device on flexible stainless steel substrate. <i>Applied Physics Letters</i> , 2018, 113, .	1.5	51
28	Hf $_{0.5}\text{Zr}_{0.5}\text{O}_2$ -based ferroelectric memristor with multilevel storage potential and artificial synaptic plasticity. <i>Science China Materials</i> , 2021, 64, 727-738.	3.5	51
29	Advances in Memristor-Based Neural Networks. <i>Frontiers in Nanotechnology</i> , 2021, 3, .	2.4	51
30	An electronic synapse memristor device with conductance linearity using quantized conduction for neuroinspired computing. <i>Journal of Materials Chemistry C</i> , 2019, 7, 1298-1306.	2.7	49
31	A carbon-based memristor design for associative learning activities and neuromorphic computing. <i>Nanoscale</i> , 2020, 12, 13531-13539.	2.8	49
32	A Robust Memristor Based on Epitaxial Vertically Aligned Nanostructured BaTiO $_3$ - δ /CeO $_2$ Films on Silicon. <i>Advanced Materials</i> , 2022, 34, e2110343.	11.1	47
33	A Multifunctional and Efficient Artificial Visual Perception Nervous System with Sb $_2$ Se $_3$ /CdS Core/Shell (SC) Nanorod Arrays Optoelectronic Memristor. <i>Advanced Functional Materials</i> , 2022, 32, .	7.8	44
34	Flexible and Insoluble Artificial Synapses Based on Chemical Cross-Linked Wool Keratin. <i>Advanced Functional Materials</i> , 2020, 30, 2002882.	7.8	42
35	Flexible artificial synapse based on single-crystalline BiFeO $_3$ thin film. <i>Nano Research</i> , 2022, 15, 2682-2688.	5.8	37
36	Impact of program/erase operation on the performances of oxide-based resistive switching memory. <i>Nanoscale Research Letters</i> , 2015, 10, 39.	3.1	34

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37	Synapse behavior characterization and physical mechanism of a TiN/SiO ₂ /p-Si tunneling memristor device. <i>Journal of Materials Chemistry C</i> , 2019, 7, 1561-1567.	2.7	34
38	Emerging 2D pnictogens for catalytic applications: status and challenges. <i>Journal of Materials Chemistry A</i> , 2020, 8, 12887-12927.	5.2	32
39	Visible light responsive optoelectronic memristor device based on CeO ₂ /ZnO structure for artificial vision system. <i>Applied Physics Letters</i> , 2021, 118, .	1.5	31
40	A Memristor-Based Silicon Carbide for Artificial Nociceptor and Neuromorphic Computing. <i>Advanced Materials Technologies</i> , 2021, 6, 2100373.	3.0	31
41	Roles of grain boundary and oxygen vacancies in Ba _{0.6} Sr _{0.4} TiO ₃ films for resistive switching device application. <i>Applied Physics Letters</i> , 2016, 108, .	1.5	28
42	A 2D-SnSe film with ferroelectricity and its bio-realistic synapse application. <i>Nanoscale</i> , 2020, 12, 21913-21922.	2.8	28
43	Memristors based on multilayer graphene electrodes for implementing a low-power neuromorphic electronic synapse. <i>Journal of Materials Chemistry C</i> , 2020, 8, 4926-4933.	2.7	25
44	Interface-engineered electron and hole tunneling. <i>Science Advances</i> , 2021, 7, .	4.7	25
45	The origin of enhanced photocatalytic activities of hydrogenated TiO ₂ nanoparticles. <i>Dalton Transactions</i> , 2017, 46, 10694-10699.	1.6	24
46	High-Stability Memristive Devices Based on Pd Conductive Filaments and Its Applications in Neuromorphic Computing. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 17844-17851.	4.0	24
47	Artificial nociceptor based on TiO ₂ nanosheet memristor. <i>Science China Materials</i> , 2021, 64, 1703-1712.	3.5	23
48	Boost of the Bio-memristor Performance for Artificial Electronic Synapses by Surface Reconstruction. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 39641-39651.	4.0	23
49	The application of halide perovskites in memristors. <i>Journal of Semiconductors</i> , 2020, 41, 051205.	2.0	22
50	The role of oxygen vacancies in the high cycling endurance and quantum conductance in BiVO ₄ -based resistive switching memory. <i>Informa Mater</i> , 2020, 2, 960-967.	8.5	21
51	A Boolean OR gate implemented with an optoelectronic switching memristor. <i>Applied Physics Letters</i> , 2019, 115, .	1.5	20
52	Memristors: Memristor with Ag-Cluster-Doped TiO ₂ Films as Artificial Synapse for Neuroinspired Computing (<i>Adv. Funct. Mater.</i> 1/2018). <i>Advanced Functional Materials</i> , 2018, 28, 1870002.	7.8	18
53	A biomimetic afferent nervous system based on the flexible artificial synapse. <i>Nano Energy</i> , 2022, 100, 107486.	8.2	17
54	The flexoelectric effect associated size dependent pyroelectricity in solid dielectrics. <i>AIP Advances</i> , 2015, 5, .	0.6	16

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55	A Graphene Oxide Quantum Dots Embedded Charge Trapping Memory With Enhanced Memory Window and Data Retention. IEEE Journal of the Electron Devices Society, 2018, 6, 464-467.	1.2	16
56	Characteristic investigation of a flexible resistive memory based on a tunneling junction of Pd/BTO/LSMO on mica substrate. Applied Physics Letters, 2018, 113, .	1.5	16
57	Self-rectifying performance in the sandwiched structure of Ag/In-Ga-Zn-O/Pt bipolar resistive switching memory. Nanoscale Research Letters, 2014, 9, 548.	3.1	15
58	Effect of Extrinsic Introduced Passive Interface Layer on the Performance of Ferroelectric Tunnel Junctions. ACS Applied Materials & Interfaces, 2017, 9, 5050-5055.	4.0	15
59	A metal/Ba _{0.6} Sr _{0.4} TiO ₃ /SiO ₂ /Si single film device for charge trapping memory towards a large memory window. Applied Physics Letters, 2017, 110, 223501.	1.5	15
60	Investigation of multilayer WS ₂ flakes as charge trapping stack layers in non-volatile memories. Applied Physics Letters, 2018, 112, .	1.5	15
61	Density effects of graphene oxide quantum dots on characteristics of Zr _{0.5} Hf _{0.5} O ₂ film memristors. Applied Physics Letters, 2019, 114, .	1.5	15
62	A Flexible Transient Biomemristor Based on Hybrid Structure HfO ₂ /BSA: Au Double Layers. Advanced Materials Technologies, 2020, 5, 2000191.	3.0	15
63	Alloy electrode engineering in memristors for emulating the biological synapse. Nanoscale, 2022, 14, 1318-1326.	2.8	15
64	Memristor based on two-dimensional titania nanosheets for multi-level storage and information processing. Nano Research, 2022, 15, 8419-8427.	5.8	15
65	Neuro- Receptor Mediated Synapse Device Based on Crumpled MXene Ti ₃ C ₂ T _x Nanosheets. Advanced Functional Materials, 2021, 31, 2104304.	7.8	14
66	Characteristics, properties, synthesis and advanced applications of 2D graphdiyne versus graphene. Materials Chemistry Frontiers, 2022, 6, 528-552.	3.2	14
67	Atomic-Scale Control of Magnetism at the Titanite-Manganite Interfaces. Nano Letters, 2019, 19, 3057-3065.	4.5	13
68	Ferroelectric Memristor Based on Hf _{0.5} Zr _{0.5} O ₂ Thin Film Combining Memristive and Neuromorphic Functionalities. Physica Status Solidi - Rapid Research Letters, 2020, 14, 2000224.	1.2	13
69	Enhanced memory characteristics of charge trapping memory by employing graphene oxide quantum dots. Applied Physics Letters, 2020, 116, .	1.5	13
70	Memristive devices based on 2D-BiOI nanosheets and their applications to neuromorphic computing. Applied Physics Letters, 2020, 116, .	1.5	13
71	Low-power memristors based on layered 2D SnSe/graphene materials. Science China Materials, 2021, 64, 1989-1996.	3.5	13
72	High-speed Si films based threshold switching device and its artificial neuron application. Applied Physics Letters, 2021, 119, .	1.5	13

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73	Characteristic investigation of highly oriented Hf _{0.5} Zr _{0.5} O ₂ thin-film resistive memory devices. Applied Physics Letters, 2020, 116, .	1.5	12
74	Controlling Resistance Switching Performances of Hf _{0.5} Zr _{0.5} O ₂ Films by Substrate Stress and Potential in Neuromorphic Computing. Advanced Intelligent Systems, 2022, 4, .	3.3	11
75	A radiation-hardening Ta/Ta ₂ O ₅ /Al ₂ O ₃ /InGaZnO ₄ memristor for harsh electronics. Applied Physics Letters, 2018, 113, .	1.5	10
76	HfO ₂ -based memristor-CMOS hybrid implementation of artificial neuron model. Applied Physics Letters, 2022, 120, .	1.5	10
77	Memristor based on $\hat{\text{In}}_2\text{Se}_3$ for emulating biological synaptic plasticity and learning behavior. Science China Materials, 0, , 1.	3.5	9
78	Impacts of thermal annealing temperature on memory properties of charge trapping memory with NiO nano-pillars. Physics Letters, Section A: General, Atomic and Solid State Physics, 2017, 381, 913-916.	0.9	8
79	Realization of fast switching speed and electronic synapse in Ta/TaO _x /AlN/Pt bipolar resistive memory. AIP Advances, 2020, 10, 055312.	0.6	8
80	Memristors Based on the Hybrid Structure of Oxide and Boron Nitride Nanosheets Combining Memristive and Neuromorphic Functionalities. Physica Status Solidi - Rapid Research Letters, 2020, 14, 1900539.	1.2	7
81	A High-Performance Memristor Device and Its Filter Circuit Application. Physica Status Solidi - Rapid Research Letters, 2020, 14, 2000389.	1.2	7
82	Unusual Hole and Electron Midgap States and Orbital Reconstructions Induced Huge Ferroelectric Tunneling Electroresistance in BaTiO ₃ /SrTiO ₃ . Nano Letters, 2020, 20, 1101-1109.	4.5	7
83	Memristor with BiVO ₄ nanoparticle as artificial synapse for neuroinspired computing. Applied Physics Letters, 2022, 120, .	1.5	7
84	Highly Improved Performance in Ag-Doped BSA Films by Inserting the ZrO ₂ Layer for Nonvolatile Resistive Switching Memory. IEEE Transactions on Electron Devices, 2021, 68, 510-515.	1.6	6
85	Memristors based on carbon dots for learning activities in artificial biosynapse applications. Materials Chemistry Frontiers, 2022, 6, 1098-1106.	3.2	6
86	Ferroelectricity and Piezoelectric Response of (Sc,Y)N/(Al,Ga,In)N Monolayer Alternating Stacked Structures by First-Principles Calculations. Physica Status Solidi (B): Basic Research, 2022, 259, .	0.7	6
87	Improved charge trapping properties by embedded graphene oxide quantum-dots for flash memory application. Applied Physics A: Materials Science and Processing, 2018, 124, 1.	1.1	5
88	Memristors mimicking the regulation of synaptic plasticity and the refractory period in the phenomenological model. Journal of Materials Chemistry C, 2020, 8, 5183-5190.	2.7	5
89	Memristive device with highly continuous conduction modulation and its underlying physical mechanism for electronic synapse application. Science China Materials, 2021, 64, 179-188.	3.5	5
90	A Cu/HZO/GeS/Pt Memristor for Neuroinspired Computing. Physica Status Solidi - Rapid Research Letters, 2021, 15, 2100072.	1.2	5

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91	Electronic and optical properties of Mn ²⁺ /S co-doped anatase TiO ₂ from first-principles calculations. <i>Materials Science-Poland</i> , 2016, 34, 38-44.	0.4	4
92	High-Performance and Multifunctional Devices-Based Optoelectronic Memory With the 2D Narrow Bandgap Bi ₂ Te _{2.7} Se _{0.3} . <i>IEEE Electron Device Letters</i> , 2020, 41, 1504-1507.	2.2	4
93	Realization of long retention properties of quantum conductance through confining the oxygen vacancy diffusion. <i>Applied Physics Reviews</i> , 2022, 9, .	5.5	4
94	Highly Transparent Bipolar Resistive Switching Memory in Zr _{0.5} Hf _{0.5} O ₂ Films With Amorphous Semiconducting In ²⁺ /Ga ³⁺ /Zn ²⁺ /O as Electrode. <i>IEEE Transactions on Electron Devices</i> , 2015, 62, 3244-3249.	1.6	3
95	Bistable Capacitance Performance-Induced Ambipolar Charge Injected Based on Ba _{0.6} Sr _{0.4} TiO ₃ by an Inlaid Zr ⁴⁺ /Hf ⁴⁺ /O Layer for Novel Nonvolatile Memory Application. <i>IEEE Transactions on Electron Devices</i> , 2017, 64, 587-592.	1.6	3
96	A generalized thermodynamic frame of magneto-electric-caloric coupling effects of single phase epitaxial multiferroic thin films. <i>Ferroelectrics</i> , 2018, 531, 186-195.	0.3	3
97	Improving Zr _{0.5} Hf _{0.5} O ₂ -based charge-trapped performance by graphene oxide quantum dots. <i>Functional Materials Letters</i> , 2019, 12, 1850093.	0.7	3
98	First-Principles Calculation of Cr/S Co-doped Rutile TiO ₂ . <i>Materials Science-Poland</i> , 2020, 38, 253-262.	0.4	3
99	Physical properties in polydomain c/a/c/a phase PbTiO ₃ ferroelectric thick films: effect of thermal stresses. <i>Applied Physics A: Materials Science and Processing</i> , 2017, 123, 1.	1.1	2
100	Data Storage: Self-Assembled Networked PbS Distribution Quantum Dots for Resistive Switching and Artificial Synapse Performance Boost of Memristors (Adv. Mater. 7/2019). <i>Advanced Materials</i> , 2019, 31, 1970049.	11.1	2
101	Electronic structures of Hg-doped anatase TiO ₂ with different O vacancy concentrations. <i>Materials Science-Poland</i> , 2014, 32, 93-97.	0.4	1
102	Intelligent structural color material based on WS ₂ nanosheets: applications for anti-counterfeiting. <i>Materials Research Express</i> , 2019, 6, 065304.	0.8	1
103	Metal oxide materials for photoelectroactive memories and neuromorphic computing systems. , 2020, , 251-278.		1
104	Large-Scale Epitaxial Growth of Ultralong Stripe BiFeO ₃ Films and Anisotropic Optical Properties. <i>ACS Applied Materials & Interfaces</i> , 2022, , .	4.0	1
105	Bipolar transparent resistive switching based in a-IGZO/STO/a-IGZO structure for nonvolatile memory application. <i>AIP Conference Proceedings</i> , 2017, , .	0.3	0
106	Effects of oxygen conditions during deposition on memory performance of metal/HfO ₂ /SiO ₂ /Si structured charge trapping memory. <i>Materials Research Express</i> , 2019, 6, 086306.	0.8	0