

# Xiaobing Yan

## List of Publications by Year in descending order

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106  
papers

4,645  
citations

109137

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106150

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106  
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106  
docs citations

106  
times ranked

3881  
citing authors

#	ARTICLE	IF	CITATIONS
1	Flexible artificial synapse based on single-crystalline BiFeO <sub>3</sub> thin film. Nano Research, 2022, 15, 2682-2688.	5.8	37
2	Alloy electrode engineering in memristors for emulating the biological synapse. Nanoscale, 2022, 14, 1318-1326.	2.8	15
3	Characteristics, properties, synthesis and advanced applications of 2D graphdiyne <i>versus</i> graphene. Materials Chemistry Frontiers, 2022, 6, 528-552.	3.2	14
4	Large-Scale Epitaxial Growth of Ultralong Stripe BiFeO <sub>3</sub> Films and Anisotropic Optical Properties. ACS Applied Materials & Interfaces, 2022, , .	4.0	1
5	Memristors based on carbon dots for learning activities in artificial biosynapse applications. Materials Chemistry Frontiers, 2022, 6, 1098-1106.	3.2	6
6	Memristor with BiVO <sub>4</sub> nanoparticle as artificial synapse for neuroinspired computing. Applied Physics Letters, 2022, 120, .	1.5	7
7	Controlling Resistance Switching Performances of Hf <sub>0.5</sub> Zr <sub>0.5</sub> O <sub>2</sub> Films by Substrate Stress and Potential in Neuromorphic Computing. Advanced Intelligent Systems, 2022, 4, .	3.3	11
8	A Robust Memristor Based on Epitaxial Vertically Aligned Nanostructured BaTiO <sub>3</sub> ∧'CeO <sub>2</sub> Films on Silicon. Advanced Materials, 2022, 34, e2110343.	11.1	47
9	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
10	A Multifunctional and Efficient Artificial Visual Perception Nervous System with Sb <sub>2</sub> Se <sub>3</sub> /CdS@Core/Shell (SC) Nanorod Arrays Optoelectronic Memristor. Advanced Functional Materials, 2022, 32, .	7.8	44
11	HfO <sub>2</sub> -based memristor-CMOS hybrid implementation of artificial neuron model. Applied Physics Letters, 2022, 120, .	1.5	10
12	Memristor based on two-dimensional titania nanosheets for multi-level storage and information processing. Nano Research, 2022, 15, 8419-8427.	5.8	15
13	Realization of long retention properties of quantum conductance through confining the oxygen vacancy diffusion. Applied Physics Reviews, 2022, 9, .	5.5	4
14	A biomimetic afferent nervous system based on the flexible artificial synapse. Nano Energy, 2022, 100, 107486.	8.2	17
15	MXene Ti <sub>3</sub> C <sub>2</sub> memristor for neuromorphic behavior and decimal arithmetic operation applications. Nano Energy, 2021, 79, 105453.	8.2	58
16	Hf <sub>0.5</sub> Zr <sub>0.5</sub> O <sub>2</sub> -based ferroelectric memristor with multilevel storage potential and artificial synaptic plasticity. Science China Materials, 2021, 64, 727-738.	3.5	51
17	The Future of Memristors: Materials Engineering and Neural Networks. Advanced Functional Materials, 2021, 31, 2006773.	7.8	187
18	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

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19	Artificial nociceptor based on TiO <sub>2</sub> nanosheet memristor. Science China Materials, 2021, 64, 1703-1712.	3.5	23
20	Low-power memristors based on layered 2D SnSe/graphene materials. Science China Materials, 2021, 64, 1989-1996.	3.5	13
21	Advances in Memristor-Based Neural Networks. Frontiers in Nanotechnology, 2021, 3, .	2.4	51
22	Interface-engineered electron and hole tunneling. Science Advances, 2021, 7, .	4.7	25
23	High-Stability Memristive Devices Based on Pd Conductive Filaments and Its Applications in Neuromorphic Computing. ACS Applied Materials & Interfaces, 2021, 13, 17844-17851.	4.0	24
24	Visible light responsive optoelectronic memristor device based on CeO <sub>x</sub> /ZnO structure for artificial vision system. Applied Physics Letters, 2021, 118, .	1.5	31
25	Boost of the Bio-memristor Performance for Artificial Electronic Synapses by Surface Reconstruction. ACS Applied Materials & Interfaces, 2021, 13, 39641-39651.	4.0	23
26	A Cu/HZO/GeS/Pt Memristor for Neuroinspired Computing. Physica Status Solidi - Rapid Research Letters, 2021, 15, 2100072.	1.2	5
27	A Memristor-Based Silicon Carbide for Artificial Nociceptor and Neuromorphic Computing. Advanced Materials Technologies, 2021, 6, 2100373.	3.0	31
28	Artificial Visual Perception Nervous System Based on Low-Dimensional Material Photoelectric Memristors. ACS Nano, 2021, 15, 17319-17326.	7.3	92
29	Neuro-Receptor Mediated Synapse Device Based on Crumpled MXene Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> Nanosheets. Advanced Functional Materials, 2021, 31, 2104304.	7.8	14
30	High-speed Si films based threshold switching device and its artificial neuron application. Applied Physics Letters, 2021, 119, .	1.5	13
31	Highly Improved Performance in Ag-Doped BSA Films by Inserting the ZrO <sub>2</sub> Layer for Nonvolatile Resistive Switching Memory. IEEE Transactions on Electron Devices, 2021, 68, 510-515.	1.6	6
32	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
33	Designing carbon conductive filament memristor devices for memory and electronic synapse applications. Materials Horizons, 2020, 7, 1106-1114.	6.4	57
34	Ferroic tunnel junctions and their application in neuromorphic networks. Applied Physics Reviews, 2020, 7, .	5.5	91
35	A 2D-SnSe film with ferroelectricity and its bio-realistic synapse application. Nanoscale, 2020, 12, 21913-21922.	2.8	28
36	A High-Performance Memristor Device and Its Filter Circuit Application. Physica Status Solidi - Rapid Research Letters, 2020, 14, 2000389.	1.2	7

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37	A Flexible Transient Biomemristor Based on Hybrid Structure HfO <sub>2</sub> /BSA: Au Double Layers. Advanced Materials Technologies, 2020, 5, 2000191.	3.0	15
38	High-Performance and Multifunctional Devices-Based Optoelectronic Memory With the 2D Narrow Bandgap Bi <sub>2</sub> Te <sub>2.7</sub> Se <sub>0.3</sub> . IEEE Electron Device Letters, 2020, 41, 1504-1507.	2.2	4
39	Flexible and Insoluble Artificial Synapses Based on Chemical Cross-Linked Wool Keratin. Advanced Functional Materials, 2020, 30, 2002882.	7.8	42
40	The application of halide perovskites in memristors. Journal of Semiconductors, 2020, 41, 051205.	2.0	22
41	Realization of fast switching speed and electronic synapse in Ta/TaOx/AlN/Pt bipolar resistive memory. AIP Advances, 2020, 10, 055312.	0.6	8
42	Ferroelectric Memristor Based on Hf <sub>0.5</sub> Zr <sub>0.5</sub> O <sub>2</sub> Thin Film Combining Memristive and Neuromorphic Functionalities. Physica Status Solidi - Rapid Research Letters, 2020, 14, 2000224.	1.2	13
43	A carbon-based memristor design for associative learning activities and neuromorphic computing. Nanoscale, 2020, 12, 13531-13539.	2.8	49
44	Emerging 2D pnictogens for catalytic applications: status and challenges. Journal of Materials Chemistry A, 2020, 8, 12887-12927.	5.2	32
45	Enhanced memory characteristics of charge trapping memory by employing graphene oxide quantum dots. Applied Physics Letters, 2020, 116, .	1.5	13
46	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
47	Memristive devices based on 2D-BiOI nanosheets and their applications to neuromorphic computing. Applied Physics Letters, 2020, 116, .	1.5	13
48	Memristors based on multilayer graphene electrodes for implementing a low-power neuromorphic electronic synapse. Journal of Materials Chemistry C, 2020, 8, 4926-4933.	2.7	25
49	Metal oxide materials for photoelectroactive memories and neuromorphic computing systems. , 2020, , 251-278.		1
50	Characteristic investigation of highly oriented Hf <sub>0.5</sub> Zr <sub>0.5</sub> O <sub>2</sub> thin-film resistive memory devices. Applied Physics Letters, 2020, 116, .	1.5	12
51	The Rise of 2D Photothermal Materials beyond Graphene for Clean Water Production. Advanced Science, 2020, 7, 1902236.	5.6	206
52	Unusual Hole and Electron Midgap States and Orbital Reconstructions Induced Huge Ferroelectric Tunneling Electroresistance in BaTiO <sub>3</sub> /SrTiO <sub>3</sub> . Nano Letters, 2020, 20, 1101-1109.	4.5	7
53	A Pure 2H-MoS <sub>2</sub> Nanosheet-Based Memristor with Low Power Consumption and Linear Multilevel Storage for Artificial Synapse Emulator. Advanced Electronic Materials, 2020, 6, 1901342.	2.6	67
54	The role of oxygen vacancies in the high cycling endurance and quantum conductance in BiVO <sub>4</sub> -based resistive switching memory. Informa Mater, 2020, 2, 960-967.	8.5	21

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55	Continuously controllable photoconductance in freestanding BiFeO <sub>3</sub> by the macroscopic flexoelectric effect. <i>Nature Communications</i> , 2020, 11, 2571.	5.8	93
56	Current status and prospects of memristors based on novel 2D materials. <i>Materials Horizons</i> , 2020, 7, 1495-1518.	6.4	101
57	Two-Dimensional Borophene: Properties, Fabrication, and Promising Applications. <i>Research</i> , 2020, 2020, 2624617.	2.8	93
58	First-Principles Calculation of Cr/S Co-doped Rutile TiO <sub>2</sub> . <i>Materials Science-Poland</i> , 2020, 38, 253-262.	0.4	3
59	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
60	A Boolean OR gate implemented with an optoelectronic switching memristor. <i>Applied Physics Letters</i> , 2019, 115, .	1.5	20
61	Current-induced magnetization switching in all-oxide heterostructures. <i>Nature Nanotechnology</i> , 2019, 14, 939-944.	15.6	139
62	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
63	Synapse behavior characterization and physical mechanism of a TiN/SiO <sub>x</sub> /p-Si tunneling memristor device. <i>Journal of Materials Chemistry C</i> , 2019, 7, 1561-1567.	2.7	34
64	Effects of oxygen conditions during deposition on memory performance of metal/HfO <sub>2</sub> /SiO <sub>2</sub> /Si structured charge trapping memory. <i>Materials Research Express</i> , 2019, 6, 086306.	0.8	0
65	A New Memristor with 2D Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> MXene Flakes as an Artificial Bio-Synapse. <i>Small</i> , 2019, 15, e1900107.	5.2	142
66	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
67	Vacancy-Induced Synaptic Behavior in 2D WS <sub>2</sub> Nanosheet-Based Memristor for Low-Power Neuromorphic Computing. <i>Small</i> , 2019, 15, e1901423.	5.2	252
68	Density effects of graphene oxide quantum dots on characteristics of Zr <sub>0.5</sub> Hf <sub>0.5</sub> O <sub>2</sub> film memristors. <i>Applied Physics Letters</i> , 2019, 114, .	1.5	15
69	Flexible Transparent Organic Artificial Synapse Based on the Tungsten/Egg Albumen/Indium Tin Oxide/Polyethylene Terephthalate Memristor. <i>ACS Applied Materials &amp; Interfaces</i> , 2019, 11, 18654-18661.	4.0	77
70	Intelligent structural color material based on WS <sub>2</sub> nanosheets: applications for anti-counterfeiting. <i>Materials Research Express</i> , 2019, 6, 065304.	0.8	1
71	Atomic-Scale Control of Magnetism at the Titanite-Manganite Interfaces. <i>Nano Letters</i> , 2019, 19, 3057-3065.	4.5	13
72	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

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73	Robust Ag/ZrO <sub>2</sub> /WS <sub>2</sub> /Pt Memristor for Neuromorphic Computing. ACS Applied Materials & Interfaces, 2019, 11, 48029-48038.	4.0	123
74	Self-Assembled Networked PbS Distribution Quantum Dots for Resistive Switching and Artificial Synapse Performance Boost of Memristors. Advanced Materials, 2019, 31, e1805284.	11.1	221
75	Improving Zr <sub>0.5</sub> Hf <sub>0.5</sub> O <sub>2</sub> -based charge-trapped performance by graphene oxide quantum dots. Functional Materials Letters, 2019, 12, 1850093.	0.7	3
76	Memristors: Memristor with Ag-Cluster-Doped TiO <sub>2</sub> Films as Artificial Synapse for Neuroinspired Computing (Adv. Funct. Mater. 1/2018). Advanced Functional Materials, 2018, 28, 1870002.	7.8	18
77	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
78	Control of Synaptic Plasticity Learning of Ferroelectric Tunnel Memristor by Nanoscale Interface Engineering. ACS Applied Materials & Interfaces, 2018, 10, 12862-12869.	4.0	109
79	Flexible memristors as electronic synapses for neuro-inspired computation based on scotch tape-exfoliated mica substrates. Nano Research, 2018, 11, 1183-1192.	5.8	91
80	Memristor with Ag-Cluster-Doped TiO <sub>2</sub> Films as Artificial Synapse for Neuroinspired Computing. Advanced Functional Materials, 2018, 28, 1705320.	7.8	318
81	A generalized thermodynamic frame of magneto-electric-caloric coupling effects of single phase epitaxial multiferroic thin films. Ferroelectrics, 2018, 531, 186-195.	0.3	3
82	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
83	A radiation-hardening Ta/Ta <sub>2</sub> O <sub>5-x</sub> /Al <sub>2</sub> O <sub>3</sub> /InGaZnO <sub>4</sub> memristor for harsh electronics. Applied Physics Letters, 2018, 113, .	1.5	10
84	Epitaxial Ferroelectric Hf <sub>0.5</sub> Zr <sub>0.5</sub> O <sub>2</sub> Thin Films and Their Implementations in Memristors for Brain-Inspired Computing. Advanced Functional Materials, 2018, 28, 1806037.	7.8	138
85	Artificial electronic synapse characteristics of a Ta/Ta <sub>2</sub> O <sub>5-x</sub> /Al <sub>2</sub> O <sub>3</sub> /InGaZnO <sub>4</sub> memristor device on flexible stainless steel substrate. Applied Physics Letters, 2018, 113, .	1.5	51
86	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
87	Graphene Oxide Quantum Dots Based Memristors with Progressive Conduction Tuning for Artificial Synaptic Learning. Advanced Functional Materials, 2018, 28, 1803728.	7.8	218
88	Investigation of multilayer WS <sub>2</sub> flakes as charge trapping stack layers in non-volatile memories. Applied Physics Letters, 2018, 112, .	1.5	15
89	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
90	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

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91	Superior resistive switching memory and biological synapse properties based on a simple TiN/SiO <sub>2</sub> /p-Si tunneling junction structure. Journal of Materials Chemistry C, 2017, 5, 2259-2267.	2.7	97
92	The origin of enhanced photocatalytic activities of hydrogenated TiO <sub>2</sub> nanoparticles. Dalton Transactions, 2017, 46, 10694-10699.	1.6	24
93	Bipolar transparent resistive switching based in a-IGZO/STO/a-IGZO structure for nonvolatile memory application. AIP Conference Proceedings, 2017, , .	0.3	0
94	A metal/Ba <sub>0.6</sub> Sr <sub>0.4</sub> TiO <sub>3</sub> /SiO <sub>2</sub> /Si single film device for charge trapping memory towards a large memory window. Applied Physics Letters, 2017, 110, 223501.	1.5	15
95	Bistable Capacitance Performance-Induced Ambipolar Charge Injected Based on Ba <sub>0.6</sub> Sr <sub>0.4</sub> TiO <sub>3</sub> by an Inlaid Zrâ€“Hfâ€“O Layer for Novel Nonvolatile Memory Application. IEEE Transactions on Electron Devices, 2017, 64, 587-592.	1.6	3
96	Highly improved performance in Zr <sub>0.5</sub> Hf <sub>0.5</sub> O <sub>2</sub> films inserted with graphene oxide quantum dots layer for resistive switching non-volatile memory. Journal of Materials Chemistry C, 2017, 5, 11046-11052.	2.7	66
97	Physical properties in polydomain c/a/c/a phase PbTiO <sub>3</sub> ferroelectric thick films: effect of thermal stresses. Applied Physics A: Materials Science and Processing, 2017, 123, 1.	1.1	2
98	Flexible Graphene Electrodes for Prolonged Dynamic ECG Monitoring. Sensors, 2016, 16, 1833.	2.1	105
99	Roles of grain boundary and oxygen vacancies in Ba <sub>0.6</sub> Sr <sub>0.4</sub> TiO <sub>3</sub> films for resistive switching device application. Applied Physics Letters, 2016, 108, .	1.5	28
100	Electronic and optical properties of Mnâ€“S co-doped anatase TiO <sub>2</sub> from first-principles calculations. Materials Science-Poland, 2016, 34, 38-44.	0.4	4
101	Impact of program/erase operation on the performances of oxide-based resistive switching memory. Nanoscale Research Letters, 2015, 10, 39.	3.1	34
102	The flexoelectric effect associated size dependent pyroelectricity in solid dielectrics. AIP Advances, 2015, 5, .	0.6	16
103	Highly Transparent Bipolar Resistive Switching Memory in Zr <sub>0.5</sub> Hf <sub>0.5</sub> O <sub>2</sub> Films With Amorphous Semiconducting Inâ€“Gaâ€“Znâ€“O as Electrode. IEEE Transactions on Electron Devices, 2015, 62, 3244-3249.	1.6	3
104	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
105	Electronic structures of Hg-doped anatase TiO <sub>2</sub> with different O vacancy concentrations. Materials Science-Poland, 2014, 32, 93-97.	0.4	1
106	Memristor based on Î±-In <sub>2</sub> Se <sub>3</sub> for emulating biological synaptic plasticity and learning behavior. Science China Materials, 0, , 1.	3.5	9