

Yuchao Yang

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

76
papers

5,031
citations

29
h-index

70
g-index

88
ext. papers

6,044
ext. citations

9.9
avg, IF

6
L-index

#	Paper	IF	Citations
76	Observation of conducting filament growth in nanoscale resistive memories. <i>Nature Communications</i> , 2012 , 3, 732	17.4	782
75	Fully room-temperature-fabricated nonvolatile resistive memory for ultrafast and high-density memory application. <i>Nano Letters</i> , 2009 , 9, 1636-43	11.5	718
74	Electrochemical dynamics of nanoscale metallic inclusions in dielectrics. <i>Nature Communications</i> , 2014 , 5, 4232	17.4	411
73	Recommended Methods to Study Resistive Switching Devices. <i>Advanced Electronic Materials</i> , 2019 , 5, 1800143	6.4	297
72	Ion Gated Synaptic Transistors Based on 2D van der Waals Crystals with Tunable Diffusive Dynamics. <i>Advanced Materials</i> , 2018 , 30, e1800195	24	271
71	Nanoscale resistive switching devices: mechanisms and modeling. <i>Nanoscale</i> , 2013 , 5, 10076-92	7.7	197
70	Engineering incremental resistive switching in TaOx based memristors for brain-inspired computing. <i>Nanoscale</i> , 2016 , 8, 14015-22	7.7	189
69	A comprehensive review on emerging artificial neuromorphic devices. <i>Applied Physics Reviews</i> , 2020 , 7, 011312	17.3	180
68	Complementary resistive switching in tantalum oxide-based resistive memory devices. <i>Applied Physics Letters</i> , 2012 , 100, 203112	3.4	170
67	Oxide heterostructure resistive memory. <i>Nano Letters</i> , 2013 , 13, 2908-15	11.5	151
66	Probing nanoscale oxygen ion motion in memristive systems. <i>Nature Communications</i> , 2017 , 8, 15173	17.4	112
65	Memristive Physically Evolving Networks Enabling the Emulation of Heterosynaptic Plasticity. <i>Advanced Materials</i> , 2015 , 27, 7720-7	24	110
64	Brain-inspired computing with memristors: Challenges in devices, circuits, and systems. <i>Applied Physics Reviews</i> , 2020 , 7, 011308	17.3	105
63	Random telegraph noise and resistance switching analysis of oxide based resistive memory. <i>Nanoscale</i> , 2014 , 6, 400-4	7.7	97
62	Probing memristive switching in nanoionic devices. <i>Nature Electronics</i> , 2018 , 1, 274-287	28.4	89
61	Building Neuromorphic Circuits with Memristive Devices. <i>IEEE Circuits and Systems Magazine</i> , 2013 , 13, 56-73	3.2	76
60	Spiking neurons with spatiotemporal dynamics and gain modulation for monolithically integrated memristive neural networks. <i>Nature Communications</i> , 2020 , 11, 3399	17.4	74

59	Nonassociative learning implementation by a single memristor-based multi-terminal synaptic device. <i>Nanoscale</i> , 2016 , 8, 18897-18904	7.7	65
58	Oxide resistive memory with functionalized graphene as built-in selector element. <i>Advanced Materials</i> , 2014 , 26, 3693-9	24	61
57	Dual-Gated MoS Neuristor for Neuromorphic Computing. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 41482-41489	9.5	52
56	Roadmap on emerging hardware and technology for machine learning. <i>Nanotechnology</i> , 2021 , 32, 0120034	3.4	45
55	Multifunctional Nanoionic Devices Enabling Simultaneous Heterosynaptic Plasticity and Efficient In-Memory Boolean Logic. <i>Advanced Electronic Materials</i> , 2017 , 3, 1700032	6.4	43
54	Memristive Devices and Networks for Brain-Inspired Computing. <i>Physica Status Solidi - Rapid Research Letters</i> , 2019 , 13, 1900029	2.5	43
53	Low Power Parylene-Based Memristors with a Graphene Barrier Layer for Flexible Electronics Applications. <i>Advanced Electronic Materials</i> , 2019 , 5, 1800852	6.4	39
52	Conduction mechanism of a TaO(x)-based selector and its application in crossbar memory arrays. <i>Nanoscale</i> , 2015 , 7, 4964-70	7.7	38
51	Standards for the Characterization of Endurance in Resistive Switching Devices. <i>ACS Nano</i> , 2021 ,	16.7	36
50	Conduction mechanisms, dynamics and stability in ReRAMs. <i>Microelectronic Engineering</i> , 2018 , 187-188, 121-133	2.5	34
49	Improvement of HfOx-Based RRAM Device Variation by Inserting ALD TiN Buffer Layer. <i>IEEE Electron Device Letters</i> , 2018 , 39, 819-822	4.4	33
48	Vertical-organic-nanocrystal-arrays for crossbar memristors with tuning switching dynamics toward neuromorphic computing. <i>SmartMat</i> , 2021 , 2, 99-108	22.8	32
47	High-speed true random number generation based on paired memristors for security electronics. <i>Nanotechnology</i> , 2017 , 28, 455202	3.4	29
46	Progress in the Characterizations and Understanding of Conducting Filaments in Resistive Switching Devices. <i>IEEE Nanotechnology Magazine</i> , 2016 , 15, 465-472	2.6	25
45	Stochastic neuron based on IGZO Schottky diodes for neuromorphic computing. <i>APL Materials</i> , 2019 , 7, 071114	5.7	24
44	Artificial Shape Perception Retina Network Based on Tunable Memristive Neurons. <i>Scientific Reports</i> , 2018 , 8, 13727	4.9	23
43	Probing electrochemistry at the nanoscale: in situ TEM and STM characterizations of conducting filaments in memristive devices. <i>Journal of Electroceramics</i> , 2017 , 39, 73-93	1.5	22
42	Transiently chaotic simulated annealing based on intrinsic nonlinearity of memristors for efficient solution of optimization problems. <i>Science Advances</i> , 2020 , 6, eaba9901	14.3	22

41	Electrochemical and thermodynamic processes of metal nanoclusters enabled biorealistic synapses and leaky-integrate-and-fire neurons. <i>Materials Horizons</i> , 2020 , 7, 71-81	14.4	22
40	Tuning analog resistive switching and plasticity in bilayer transition metal oxide based memristive synapses. <i>RSC Advances</i> , 2017 , 7, 43132-43140	3.7	21
39	Physically Transient True Random Number Generators Based on Paired Threshold Switches Enabling Monte Carlo Method Applications. <i>IEEE Electron Device Letters</i> , 2019 , 40, 1096-1099	4.4	18
38	Memristor-Based Efficient In-Memory Logic for Cryptologic and Arithmetic Applications. <i>Advanced Materials Technologies</i> , 2019 , 4, 1900212	6.8	16
37	Time-dependent variability in RRAM-based analog neuromorphic system for pattern recognition 2017 ,		16
36	Vertical WS/SnS van der Waals Heterostructure for Tunneling Transistors. <i>Scientific Reports</i> , 2018 , 8, 17755	4.9	16
35	A Bamboo-Like GaN Microwire-Based Piezotronic Memristor. <i>Advanced Functional Materials</i> , 2016 , 26, 5307-5314	15.6	15
34	Encapsulation layer design and scalability in encapsulated vertical 3D RRAM. <i>Nanotechnology</i> , 2016 , 27, 205202	3.4	15
33	Dynamical memristors for higher-complexity neuromorphic computing. <i>Nature Reviews Materials</i> ,	73.3	15
32	Bipolar to unipolar mode transition and imitation of metaplasticity in oxide based memristors with enhanced ionic conductivity. <i>Journal of Applied Physics</i> , 2018 , 124, 152103	2.5	13
31	Neuromorphic Computing: Ion Gated Synaptic Transistors Based on 2D van der Waals Crystals with Tunable Diffusive Dynamics (Adv. Mater. 21/2018). <i>Advanced Materials</i> , 2018 , 30, 1870149	24	12
30	Flexible Polymer Device Based on Parylene-C with Memory and Temperature Sensing Functionalities. <i>Polymers</i> , 2017 , 9,	4.5	12
29	Nonlinearity in Memristors for Neuromorphic Dynamic Systems. <i>Small Science</i> , 2100049		12
28	Interfacial redox processes in memristive devices based on valence change and electrochemical metallization. <i>Faraday Discussions</i> , 2019 , 213, 41-52	3.6	11
27	Memristor-Based Biologically Plausible Memory Based on Discrete and Continuous Attractor Networks for Neuromorphic Systems. <i>Advanced Intelligent Systems</i> , 2020 , 2, 2000001	6	11
26	Investigation of NbOx-based volatile switching device with self-rectifying characteristics. <i>Science China Information Sciences</i> , 2019 , 62, 1	3.4	11
25	Tolerance of intrinsic device variation in fuzzy restricted Boltzmann machine network based on memristive nano-synapses. <i>Nano Futures</i> , 2017 , 1, 015003	3.6	9
24	A Memristor-Based In-Memory Computing Network for Hamming Code Error Correction. <i>IEEE Electron Device Letters</i> , 2019 , 40, 1080-1083	4.4	9

23	Physically Transient Optic-Neural Synapse for Secure In-Sensor Computing. <i>IEEE Electron Device Letters</i> , 2020 , 41, 1641-1644	4.4	7
22	Multilayer Reservoir Computing Based on Ferroelectric Pn Se for Hierarchical Information Processing.. <i>Advanced Materials</i> , 2022 , e2108826	24	6
21	In-memory computing with emerging nonvolatile memory devices. <i>Science China Information Sciences</i> , 2021 , 64, 1	3.4	6
20	Efficient 16 Boolean logic and arithmetic based on bipolar oxide memristors. <i>Science China Information Sciences</i> , 2020 , 63, 1	3.4	6
19	Memristors with alloyed electrodes. <i>Nature Nanotechnology</i> , 2020 , 15, 510-511	28.7	5
18	Artificial Astrocyte Memristor with Recoverable Linearity for Neuromorphic Computing. <i>Advanced Electronic Materials</i> , 2100669	6.4	5
17	Artificial Multisensory Neurons with Fused Haptic and Temperature Perception for Multimodal In-Sensor Computing. <i>Advanced Intelligent Systems</i> , 2200039	6	5
16	Memristive Devices: Switching Effects, Modeling, and Applications 2014 , 195-221		4
15	Thermal effect in ultra-high density 3D vertical and horizontal RRAM array. <i>Physica Scripta</i> , 2019 , 94, 045001	2.6	4
14	Integration of biocompatible organic resistive memory and photoresistor for wearable image sensing application. <i>Science China Information Sciences</i> , 2018 , 61, 1	3.4	3
13	In-Memory Realization of Eligibility Traces Based on Conductance Drift of Phase Change Memory for Energy-Efficient Reinforcement Learning. <i>Advanced Materials</i> , 2021 , e2107811	24	3
12	Accelerated Local Training of CNNs by Optimized Direct Feedback Alignment Based on Stochasticity of 4 Mb C-doped Ge ₂ Sb ₂ Te ₅ PCM Chip in 40 nm Node 2020 ,		3
11	Improvement of RRAM Device Performance Through On-Chip Resistors. <i>Materials Research Society Symposia Proceedings</i> , 2012 , 1430, 149		2
10	Highly Uniform Two-Terminal Artificial Synapses Based on Polycrystalline Hf _{0.5} Zr _{0.5} O ₂ for Sparsified Back Propagation Networks. <i>Advanced Electronic Materials</i> , 2020 , 6, 2000204	6.4	2
9	Resistive switching and synaptic plasticity in HfO ₂ -based memristors with single-layer and bilayer structures 2018 ,		1
8	Spike-Enabled Audio Learning in Multilevel Synaptic Memristor Array-Based Spiking Neural Network. <i>Advanced Intelligent Systems</i> , 2100151	6	1
7			
6	Artificial Intelligence Goes Physical. <i>Small Science</i> , 2021 , 1, 2000065		1

- 5 Dropout neuronal unit with tunable probability based on NbOx stochastic memristor for efficient suppression of overfitting. *Microelectronic Engineering*, **2022**, 111778 2.5 1
- 4 Probing Electrochemistry at the Nanoscale: In Situ TEM and STM Characterizations of Conducting Filaments in Memristive Devices. *Kluwer International Series in Electronic Materials: Science and Technology*, **2022**, 87-120
- 3 Neuromorphic Devices and Networks Based on Memristors with Ionic Dynamics **2019**, 527-554
- 2 Embracing the era of neuromorphic computing. *Journal of Semiconductors*, **2021**, 42, 010301 2.3
- 1 Efficient In-Memory AES Encryption Implementation Using a General Memristive Logic: Surmounting the data movement bottleneck. *IEEE Nanotechnology Magazine*, **2022**, 16, 24-C3 1.7