## Analogue signal and image processing with large memr

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Citation Report

#	Article	IF	CITATIONS
1	Mixed-precision in-memory computing. Nature Electronics, 2018, 1, 246-253.	26.0	315
2	Scaling for edge inference of deep neural networks. Nature Electronics, 2018, 1, 216-222.	26.0	299
3	Ion Gated Synaptic Transistors Based on 2D van der Waals Crystals with Tunable Diffusive Dynamics. Advanced Materials, 2018, 30, e1800195.	21.0	368
4	Fully memristive neural networks for pattern classification with unsupervised learning. Nature Electronics, 2018, 1, 137-145.	26.0	787
5	Multiplication on the edge. Nature Electronics, 2018, 1, 8-9.	26.0	16
6	Memristive Ion Channel-Doped Biomembranes as Synaptic Mimics. ACS Nano, 2018, 12, 4702-4711.	14.6	107
7	A compact model for selectors based on metal doped electrolyte. Applied Physics A: Materials Science and Processing, 2018, 124, 1.	2.3	2
8	Memristive Spiking Neural Networks Trained with Unsupervised STDP. Electronics (Switzerland), 2018, 7, 396.	3.1	13
9	Biomimetic, Soft-Material Synapse for Neuromorphic Computing: from Device to Network. , 2018, , .		14
10	Mixed-Signal Neuromorphic Inference Accelerators: Recent Results and Future Prospects. , 2018, , .		21
11	Analog high resistance bilayer RRAM device for hardware acceleration of neuromorphic computation. Journal of Applied Physics, 2018, 124, .	2.5	12
12	Rubbing-Induced Site-Selective Growth of MoS <sub>2</sub> Device Patterns. ACS Applied Materials & Interfaces, 2018, 10, 43774-43784.	8.0	21
13	Perspective: Magnetic skyrmions—Overview of recent progress in an active research field. Journal of Applied Physics, 2018, 124, .	2.5	387
14	Challenges in materials and devices for resistive-switching-based neuromorphic computing. Journal of Applied Physics, 2018, 124, .	2.5	155
15	One-Board Design and Simulation of Double-Layer Perceptron Based on Metal-Oxide Memristive Nanostructures. IEEE Transactions on Emerging Topics in Computational Intelligence, 2018, 2, 371-379.	4.9	30
16	Tutorial: Fabrication and three-dimensional integration of nanoscale memristive devices and arrays. Journal of Applied Physics, 2018, 124, .	2.5	7
17	Bipolar to unipolar mode transition and imitation of metaplasticity in oxide based memristors with enhanced ionic conductivity. Journal of Applied Physics, 2018, 124, .	2.5	19
18	An All-Memristor Deep Spiking Neural Computing System: A Step Toward Realizing the Low-Power Stochastic Brain. IEEE Transactions on Emerging Topics in Computational Intelligence, 2018, 2, 345-358.	4.9	81

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#	Article	IF	CITATIONS
19	Suppress variations of analog resistive memory for neuromorphic computing by localizing Vo formation. Journal of Applied Physics, 2018, 124, 152108.	2.5	19
20	A provable key destruction scheme based on memristive crossbar arrays. Nature Electronics, 2018, 1, 548-554.	26.0	61
21	Efficient learning and crossbar operations with atomically-thin 2-D material compound synapses. Journal of Applied Physics, 2018, 124, .	2.5	14
22	MoS <sub>2</sub> Memristors Exhibiting Variable Switching Characteristics toward Biorealistic Synaptic Emulation. ACS Nano, 2018, 12, 9240-9252.	14.6	191
23	One-transistor one-resistor (1T1R) cell for large-area electronics. Applied Physics Letters, 2018, 113, .	3.3	9
24	Learning of spatiotemporal patterns in a spiking neural network with resistive switching synapses. Science Advances, 2018, 4, eaat4752.	10.3	213
25	Artificial Shape Perception Retina Network Based on Tunable Memristive Neurons. Scientific Reports, 2018, 8, 13727.	3.3	30
26	Review of memristor devices in neuromorphic computing: materials sciences and device challenges. Journal Physics D: Applied Physics, 2018, 51, 503002.	2.8	326
27	Breaking POps/J Barrier with Analog Multiplier Circuits Based on Nonvolatile Memories. , 2018, , .		5
28	Neuromorphic Computing with Memristor Crossbar. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1700875.	1.8	60
29	Artificial neural networks based on memristive devices. Science China Information Sciences, 2018, 61, 1.	4.3	18
30	Probing memristive switching in nanoionic devices. Nature Electronics, 2018, 1, 274-287.	26.0	128
31	Aligned Carbon Nanotube Synaptic Transistors for Large-Scale Neuromorphic Computing. ACS Nano, 2018, 12, 7352-7361.	14.6	128
32	Silicon Oxide (SiO <i><sub>x</sub></i> ): A Promising Material for Resistance Switching?. Advanced Materials, 2018, 30, e1801187.	21.0	156
33	In-Memory Computing with Memristor Arrays. , 2018, , .		26
34	Logic Computing with Stateful Neural Networks of Resistive Switches. Advanced Materials, 2018, 30, e1802554.	21.0	123
35	An electronic synaptic device based on HfO <sub>2</sub> TiO <sub>x</sub> bilayer structure memristor with self-compliance and deep-RESET characteristics. Nanotechnology, 2018, 29, 415205.	2.6	36
36	A Ti/AlO <sub>x</sub> /TaO <sub>x</sub> /Pt Analog Synapse for Memristive Neural Network. IEEE Electron Device Letters, 2018, 39, 1298-1301.	3.9	41

#	ARTICLE Neuromorphic Computing Using Memristor Crossbar Networks: A Focus on Bio-Inspired Approaches.	IF	CITATIONS
37	IEEE Nanotechnology Magazine, 2018, 12, 6-18. Neuromorphic computing with multi-memristive synapses. Nature Communications, 2018, 9, 2514.	12.8	566
39	A general memristor-based partial differential equation solver. Nature Electronics, 2018, 1, 411-420.	26.0	183
40	Device solutions to scientific computing. Nature Electronics, 2018, 1, 382-383.	26.0	2
41	Large Memristor Crossbars for Analog Computing. , 2018, , .		14
42	Graphene Oxide Quantum Dots Based Memristors with Progressive Conduction Tuning for Artificial Synaptic Learning. Advanced Functional Materials, 2018, 28, 1803728.	14.9	218
43	Resistive random-access memory based on ratioed memristors. Nature Electronics, 2018, 1, 466-472.	26.0	72
44	Electronic synapses made of layered two-dimensional materials. Nature Electronics, 2018, 1, 458-465.	26.0	459
45	<i>K</i> -means Data Clustering with Memristor Networks. Nano Letters, 2018, 18, 4447-4453.	9.1	88
46	Implementation of multilayer perceptron network with highly uniform passive memristive crossbar circuits. Nature Communications, 2018, 9, 2331.	12.8	281
47	In-memory computing with resistive switching devices. Nature Electronics, 2018, 1, 333-343.	26.0	1,316
48	Efficient and self-adaptive in-situ learning in multilayer memristor neural networks. Nature Communications, 2018, 9, 2385.	12.8	575
49	Bio-inspired protonic memristor devices based on metal complexes with proton-coupled electron transfer. Faraday Discussions, 2019, 213, 99-113.	3.2	13
50	Coexistence of Digital and Analog Resistive Switching With Low Operation Voltage in Oxygen-Gradient HfO <sub>x</sub> Memristors. IEEE Electron Device Letters, 2019, 40, 1068-1071.	3.9	32
51	Memristor-Based Neuromorphic Hardware Improvement for Privacy-Preserving ANN. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2019, 27, 2745-2754.	3.1	14
52	Input-Aware Flow-Based Computing on Memristor Crossbars With Applications to Edge Detection. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2019, 9, 580-591.	3.6	11
53	Resistive Memoryâ€Based Inâ€Memory Computing: From Device and Largeâ€Scale Integration System Perspectives. Advanced Intelligent Systems, 2019, 1, 1900068.	6.1	54
54	8T SRAM Cell as a Multibit Dot-Product Engine for Beyond Von Neumann Computing. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2019, 27, 2556-2567.	3.1	93

#	Article	IF	CITATIONS
55	Understanding memristive switching via in situ characterization and device modeling. Nature Communications, 2019, 10, 3453.	12.8	275
56	Charge-Trap Transistors for CMOS-Only Analog Memory. IEEE Transactions on Electron Devices, 2019, 66, 4183-4187.	3.0	18
57	A fully integrated reprogrammable memristor–CMOS system for efficient multiply–accumulate operations. Nature Electronics, 2019, 2, 290-299.	26.0	469
58	Functional Oxides for Photoneuromorphic Engineering: Toward a Solar Brain. Advanced Materials Interfaces, 2019, 6, 1900471.	3.7	31
59	Toward Designing Thermally-Aware Memristance Decoder. IEEE Transactions on Circuits and Systems I: Regular Papers, 2019, 66, 4337-4347.	5.4	1
60	Programmable Multilevel Memtransistors Based on van der Waals Heterostructures. Advanced Electronic Materials, 2019, 5, 1900333.	5.1	21
61	Memristor crossbar array for binarized neural networks. AIP Advances, 2019, 9, .	1.3	21
62	A Pt/ITO/CeO2/Pt memristor with an analog, linear, symmetric, and long-term stable synaptic weight modulation. APL Materials, 2019, 7, 071113.	5.1	23
63	Artificial Neural Network Based on Doped HfO <sub>2</sub> Ferroelectric Capacitors With Multilevel Characteristics. IEEE Electron Device Letters, 2019, 40, 1309-1312.	3.9	41
64	Memristive Circuit Design of Emotional Generation and Evolution Based on Skin-Like Sensory Processor. IEEE Transactions on Biomedical Circuits and Systems, 2019, 13, 631-644.	4.0	52
65	Better Performance of Memristive Convolutional Neural Network Due to Stochastic Memristors. Lecture Notes in Computer Science, 2019, , 39-47.	1.3	2
66	Memristive Logic in Crossbar Memory Arrays: Variability-Aware Design for Higher Reliability. IEEE Nanotechnology Magazine, 2019, 18, 635-646.	2.0	20
67	Non-Polar and Complementary Resistive Switching Characteristics in Graphene Oxide devices with Gold Nanoparticles: Diverse Approach for Device Fabrication. Scientific Reports, 2019, 9, 15103.	3.3	28
68	An overview of memristive cryptography. European Physical Journal: Special Topics, 2019, 228, 2301-2312.	2.6	17
69	Molybdenum Disulfide Nanosheet/Quantum Dot Dynamic Memristive Structure Driven by Photoinduced Phase Transition. Small, 2019, 15, e1903809.	10.0	17
70	Analog Coupled Oscillator Based Weighted Ising Machine. Scientific Reports, 2019, 9, 14786.	3.3	98
71	Linear Optimization for Memristive Device in Neuromorphic Hardware. , 2019, , .		7
72	Reservoir Computing Using Diffusive Memristors. Advanced Intelligent Systems, 2019, 1, 1900084.	6.1	147

#	Article	IF	CITATIONS
73	Gd-Doped HfO <sub>2</sub> Memristor Device, Evaluation Robustness by Image Noise Cancellation and Edge Detection Filter for Neuromorphic Computing. IEEE Access, 2019, 7, 157922-157932.	4.2	9
74	Design and Analysis of Address-Adaptive Read Reference Settings for Multilevel Cell Cross-Point Memory Arrays. IEEE Transactions on Electron Devices, 2019, 66, 5347-5352.	3.0	6
75	Precision-extension technique for accurate vector–matrix multiplication with a CNT transistor crossbar array. Nanoscale, 2019, 11, 21449-21457.	5.6	10
76	Detection of bovine serum albumin using hybrid TiO2 + graphene oxide based Bio – resistive random access memory device. Scientific Reports, 2019, 9, 16141.	3.3	29
77	Neural network accelerator design with resistive crossbars: Opportunities and challenges. IBM Journal of Research and Development, 2019, 63, 10:1-10:13.	3.1	17
78	Bridging Biological and Artificial Neural Networks with Emerging Neuromorphic Devices: Fundamentals, Progress, and Challenges. Advanced Materials, 2019, 31, e1902761.	21.0	418
79	An ovonic threshold switching selector based on Se-rich GeSe chalcogenide. Applied Physics A: Materials Science and Processing, 2019, 125, 1.	2.3	27
80	Analog Weights in ReRAM DNN Accelerators. , 2019, , .		34
81	Understanding the conduction and switching mechanism of Ti/AlOx/TaOx/Pt analog memristor. Physics Letters, Section A: General, Atomic and Solid State Physics, 2019, 383, 125877.	2.1	11
82	In situ training of feed-forward and recurrent convolutional memristor networks. Nature Machine Intelligence, 2019, 1, 434-442.	16.0	201
83	Machine Learning for 3D Image Recognition to Determine Porosity and Lithology of Heterogeneous Carbonate Rock. , 2019, , .		3
84	Multifunctional full-visible-spectrum optoelectronics based on a van der Waals heterostructure. Nano Energy, 2019, 66, 104107.	16.0	28
85	Nanosystems, Edge Computing, and the Next Generation Computing Systems. Sensors, 2019, 19, 4048.	3.8	32
86	Resistive switching memory utilizing water and titanium dioxide thin film Schottky diode. Journal of Materials Science: Materials in Electronics, 2019, 30, 18744-18752.	2.2	10
87	A large-scale in-memory computing for deep neural network with trained quantization. The Integration VLSI Journal, 2019, 69, 345-355.	2.1	4
88	Photonic In-Memory Computing Primitive for Spiking Neural Networks Using Phase-Change Materials. Physical Review Applied, 2019, 11, .	3.8	93
89	Take it to the edge. Nature Electronics, 2019, 2, 1-1.	26.0	15
90	Novel Selectorâ€Induced Currentâ€Limiting Effect through Asymmetry Control for Highâ€Density Oneâ€Selector–Oneâ€Resistor Crossbar Arrays. Advanced Electronic Materials, 2019, 5, 1800806.	5.1	10

#	Article	IF	Citations
91	Reliability Challenges with Materials for Analog Computing. , 2019, , .		14
92	Memristive switching in ionic liquid–based two-terminal discrete devices. Ionics, 2019, 25, 5575-5583.	2.4	17
93	Cross-point Resistive Memory. ACM Transactions on Design Automation of Electronic Systems, 2019, 24, 1-37.	2.6	24
94	RRAM/memristor for computing. , 2019, , 539-583.		4
95	CIM-SIM. , 2019, , .		16
96	Partial-Gated Memristor Crossbar for Fast and Power-Efficient Defect-Tolerant Training. Micromachines, 2019, 10, 245.	2.9	10
97	Modeling framework and comparison of memristive devices and associated STDP learning windows for neuromorphic applications. Journal Physics D: Applied Physics, 2019, 52, 393002.	2.8	10
98	Adaptive Properties of Spiking Neuromorphic Networks with Synapses Based on Memristive Elements. Technical Physics Letters, 2019, 45, 386-390.	0.7	16
99	Yttria-stabilized zirconia cross-point memristive devices for neuromorphic applications. Microelectronic Engineering, 2019, 215, 110988.	2.4	61
100	Multi-ReRAM Synapses for Artificial Neural Network Training. , 2019, , .		8
101	Towards the Development of Analog Neuromorphic Chip Prototype with 2.4M Integrated Memristors. , 2019, , .		10
102	Non-Ideal Effects of Memristor-CMOS Hybrid Circuits for Realizing Multiple-Layer Neural Networks. , 2019, , .		12
103	Matrix Mapping on Crossbar Memory Arrays with Resistive Interconnects and Its Use in In-Memory Compression of Biosignals. Micromachines, 2019, 10, 306.	2.9	16
104	Flexible Pyrene/Phenanthro[9,10â€∢i>d]imidazoleâ€Based Memristive Devices for Mimicking Synaptic Plasticity. Advanced Intelligent Systems, 2019, 1, 1900008.	6.1	30
105	A Soft-Pruning Method Applied During Training of Spiking Neural Networks for In-memory Computing Applications. Frontiers in Neuroscience, 2019, 13, 405.	2.8	29
106	Mitigating Nonlinear Effect of Memristive Synaptic Device for Neuromorphic Computing. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2019, 9, 377-387.	3.6	27
107	Lowâ€Conductance and Multilevel CMOSâ€Integrated Nanoscale Oxide Memristors. Advanced Electronic Materials, 2019, 5, 1800876.	5.1	67
108	Memristor in a Reservoir System—Experimental Evidence for High-Level Computing and Neuromorphic Behavior of Pbl <sub>2</sub> . ACS Applied Materials & Interfaces, 2019, 11, 17009-17018.	8.0	23

#	Article	IF	CITATIONS
109	An improved memristor model connecting plastic synapse and nonlinear spiking neuron. Journal Physics D: Applied Physics, 2019, 52, 275402.	2.8	5
110	Parallel programming of an ionic floating-gate memory array for scalable neuromorphic computing. Science, 2019, 364, 570-574.	12.6	484
111	Fully Printed All-Solid-State Organic Flexible Artificial Synapse for Neuromorphic Computing. ACS Applied Materials & Interfaces, 2019, 11, 16749-16757.	8.0	70
112	Effects of Monopolar Resistive Switching in Thin Diamond-Like Carbon Layers. JETP Letters, 2019, 109, 171-174.	1.4	5
113	Memristive crossbar arrays for brain-inspired computing. Nature Materials, 2019, 18, 309-323.	27.5	1,058
114	Synaptic Resistors for Concurrent Inference and Learning with High Energy Efficiency. Advanced Materials, 2019, 31, e1808032.	21.0	36
115	Atomic Layer Deposited Hf0.5Zr0.5O2-based Flexible Memristor with Short/Long-Term Synaptic Plasticity. Nanoscale Research Letters, 2019, 14, 102.	5.7	38
116	A Survey on Architecture Advances Enabled by Emerging Beyond-CMOS Technologies. IEEE Design and Test, 2019, 36, 46-68.	1.2	16
117	Memristive Synapses for Brainâ€inspired Computing. Advanced Materials Technologies, 2019, 4, 1800544.	5.8	72
118	A Novel Resistive Memory-based Process-in-memory Architecture for Efficient Logic and Add Operations. ACM Transactions on Design Automation of Electronic Systems, 2019, 24, 1-22.	2.6	1
119	Solid-State Electrochemical Process and Performance Optimization of Memristive Materials and Devices. Chemistry, 2019, 1, 44-68.	2.2	4
120	Artificial Neural Network (ANN) to Spiking Neural Network (SNN) Converters Based on Diffusive Memristors. Advanced Electronic Materials, 2019, 5, 1900060.	5.1	92
121	Memristive Devices and Networks for Brainâ€inspired Computing. Physica Status Solidi - Rapid Research Letters, 2019, 13, 1900029.	2.4	66
122	Ultra compact electrochemical metallization cells offering reproducible atomic scale memristive switching. Communications Physics, 2019, 2, .	5.3	35
123	Reinforcement learning with analogue memristor arrays. Nature Electronics, 2019, 2, 115-124.	26.0	247
124	Associative Memory for Image Recovery with a Highâ€Performance Memristor Array. Advanced Functional Materials, 2019, 29, 1900155.	14.9	50
125	Fully Printed Flexible Crossbar Memory Devices with Tipâ€Enhanced Micro/Nanostructures. Advanced Electronic Materials, 2019, 5, 1900131.	5.1	8
126	A Threshold Switching Selector Based on Highly Ordered Ag Nanodots for Xâ€Point Memory Applications. Advanced Science, 2019, 6, 1900024.	11.2	91

	CITATION	Report	
#	Article	IF	CITATIONS
127	Asymmetrical Training Scheme of Binary-Memristor-Crossbar-Based Neural Networks for Energy-Efficient Edge-Computing Nanoscale Systems. Micromachines, 2019, 10, 141.	2.9	24
128	Scalable 3D Ta:SiO x Memristive Devices. Advanced Electronic Materials, 2019, 5, 1800958.	5.1	2
129	Solving matrix equations in one step with cross-point resistive arrays. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 4123-4128.	7.1	169
130	LiSiO <sub>X</sub> -Based Analog Memristive Synapse for Neuromorphic Computing. IEEE Electron Device Letters, 2019, 40, 542-545.	3.9	48
131	ReRAM Crossbar-Based Analog Computing Architecture for Naive Bayesian Engine. , 2019, , .		10
132	Memristor Hardware Accelerator of Quantum Computations. , 2019, , .		11
133	Effect of Asymmetric Nonlinearity Dynamics in RRAMs on Spiking Neural Network Performance. , 2019, ,		5
134	Defect-Tolerant Crossbar Training of Memristor Ternary Neural Networks. , 2019, , .		0
135	A Low-Power High-Throughput In-Memory CMOS-ReRAM Accelerator for Large-Scale Deep Residual Neural Networks. , 2019, , .		1
136	Analog Neural Network based on Memristor Crossbar Arrays. , 2019, , .		0
137	Learning with Resistive Switching Neural Networks. , 2019, , .		6
138	Defect-Tolerant and Energy-Efficient Training of Multi-Valued and Binary Memristor Crossbars for Near-Sensor Cognitive Computing. , 2019, , .		1
139	Enhanced memristorâ€based MNNs performance on noisy dataset resulting from memristive stochasticity. IET Circuits, Devices and Systems, 2019, 13, 704-709.	1.4	2
140	In-memory solution of linear systems with crosspoint arrays without iterations. , 2019, , .		3
141	Synaptic Learning and Forgetting Behavior in Ag/AlN/Al Memristor With \${ext{O}_{2}}\$ Annealing Effect. IEEE Access, 2019, 7, 163358-163364.	4.2	8
142	A TaO <sub>x</sub> -Based Electronic Synapse With High Precision for Neuromorphic Computing. IEEE Access, 2019, 7, 184700-184706.	4.2	6
143	Characterization and Application of PVDF and Its Copolymer Films Prepared by Spin-Coating and Langmuir–Blodgett Method. Polymers, 2019, 11, 2033.	4.5	96
144	Fast Solution of Linear Systems with Analog Resistive Switching Memory (RRAM). , 2019, , .		10

	Сг	CITATION REPORT	
#	Article	IF	CITATIONS
145	Redox-based memristive devices for new computing paradigm. APL Materials, 2019, 7, 110903.	5.1	55
146	Epitaxial growth and layer-transfer techniques for heterogeneous integration of materials for electronic and photonic devices. Nature Electronics, 2019, 2, 439-450.	26.0	155
147	Efficient evaluation model including interconnect resistance effect for large scale RRAM crossbar array matrix computing. Science China Information Sciences, 2019, 62, 1.	4.3	11
148	Technological Benchmark of Analog Synaptic Devices for Neuroinspired Architectures. IEEE Design and Test, 2019, 36, 31-38.	1.2	30
149	Alleviating Conductance Nonlinearity via Pulse Shape Designs in TaO <sub>&lt;italic&gt;x&lt;/italic&gt;</sub> Memristive Synapses. IEEE Transactions on Electron Devices, 2019, 66, 810-813.	3.0	17
150	Memristor crossbar arrays with 6-nm half-pitch and 2-nm critical dimension. Nature Nanotechnology, 2019, 14, 35-39.	31.5	381
151	Truly Concomitant and Independently Expressed Short―and Longâ€Term Plasticity in a Bi <sub>2</sub> O <sub>2</sub> Seâ€Based Threeâ€Terminal Memristor. Advanced Materials, 2019, 3 e1805769.	-l, 21.0	85
152	Independent Component Analysis Using RRAMs. IEEE Nanotechnology Magazine, 2019, 18, 611-615.	2.0	14
153	Polymer Analog Memristive Synapse with Atomic-Scale Conductive Filament for Flexible Neuromorphi Computing System. Nano Letters, 2019, 19, 839-849.	c 9.1	139
154	Long short-term memory networks in memristor crossbar arrays. Nature Machine Intelligence, 2019, 1 49-57.	l, 16.0	288
155	A Novel Convolution Computing Paradigm Based on NOR Flash Array With High Computing Speed an Energy Efficiency. IEEE Transactions on Circuits and Systems I: Regular Papers, 2019, 66, 1692-1703.	d 5.4	24
156	Realizing Bidirectional Threshold Switching in Ag/Ta2O5/Pt Diffusive Devices for Selector Applications. Journal of Electronic Materials, 2019, 48, 517-525.	2.2	14
157	Memristors: Properties, Models, Materials. Modeling and Optimization in Science and Technologies, 2020, , 13-40.	0.7	6
158	Memristive Deep Convolutional Neural Networks. Modeling and Optimization in Science and Technologies, 2020, , 131-137.	0.7	1
159	Neuromemristive Circuits for Edge Computing: A Review. IEEE Transactions on Neural Networks and Learning Systems, 2020, 31, 4-23.	11.3	184
160	A Semiparallel Full-Adder in IMPLY Logic. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2020, 28, 297-301.	3.1	41
161	On the validity of memristor modeling in the neural network literature. Neural Networks, 2020, 121, 52-56.	5.9	31
162	Theoretical Foundations of Memristor Cellular Nonlinear Networks: Memcomputing With Bistable-Like Memristors. IEEE Transactions on Circuits and Systems I: Regular Papers, 2020, 67, 502-	515. <sup>5.4</sup>	49

#	Article	IF	CITATIONS
163	Self-adaptive STDP-based learning of a spiking neuron with nanocomposite memristive weights. Nanotechnology, 2020, 31, 045201.	2.6	65
164	Memristive continuous Hopfield neural network circuit for image restoration. Neural Computing and Applications, 2020, 32, 8175-8185.	5.6	32
165	Kernel Application of the Stacked Crossbar Array Composed of Selfâ€Rectifying Resistive Switching Memory for Convolutional Neural Networks. Advanced Intelligent Systems, 2020, 2, 1900116.	6.1	11
166	Near infrared neuromorphic computing via upconversion-mediated optogenetics. Nano Energy, 2020, 67, 104262.	16.0	50
167	Photonic Multiply-Accumulate Operations for Neural Networks. IEEE Journal of Selected Topics in Quantum Electronics, 2020, 26, 1-18.	2.9	166
168	Artificial Perception Built on Memristive System: Visual, Auditory, and Tactile Sensations. Advanced Intelligent Systems, 2020, 2, 1900118.	6.1	53
169	Recursive second-order Volterra filter based on Dawson function for chaotic memristor system identification. Nonlinear Dynamics, 2020, 99, 3123-3142.	5.2	12
170	An artificial spiking afferent nerve based on Mott memristors for neurorobotics. Nature Communications, 2020, 11, 51.	12.8	217
171	Memristive and CMOS Devices for Neuromorphic Computing. Materials, 2020, 13, 166.	2.9	83
172	Designing carbon conductive filament memristor devices for memory and electronic synapse applications. Materials Horizons, 2020, 7, 1106-1114.	12.2	57
173	Parallel weight update protocol for a carbon nanotube synaptic transistor array for accelerating neuromorphic computing. Nanoscale, 2020, 12, 2040-2046.	5.6	28
174	Reliability of analog resistive switching memory for neuromorphic computing. Applied Physics Reviews, 2020, 7, .	11.3	199
175	2D Layered Materials for Memristive and Neuromorphic Applications. Advanced Electronic Materials, 2020, 6, 1901107.	5.1	85
176	Embedded 1-Mb ReRAM-Based Computing-in- Memory Macro With Multibit Input and Weight for CNN-Based AI Edge Processors. IEEE Journal of Solid-State Circuits, 2020, 55, 203-215.	5.4	62
177	Analog Weight Updates with Compliance Current Modulation of Binary ReRAMs for On-Chip Learning. , 2020, , .		11
178	Biologically Plausible Contrast Detection using a Memristor Array. , 2020, , .		0
179	Performance Assessment of Memristor Networks as Shortest Path Problem Solvers. , 2020, , .		0
180	In-Memory Computing in Emerging Memory Technologies for Machine Learning: An Overview. , 2020, , .		28

#	Article	IF	CITATIONS
181	Ionâ€Gated Transistor: An Enabler for Sensing and Computing Integration. Advanced Intelligent Systems, 2020, 2, 2000156.	6.1	27
182	Oxideâ€Based Electrolyteâ€Gated Transistors for Spatiotemporal Information Processing. Advanced Materials, 2020, 32, e2003018.	21.0	104
183	Highâ€Uniformity Threshold Switching HfO <sub>2</sub> â€Based Selectors with Patterned Ag Nanodots. Advanced Science, 2020, 7, 2002251.	11.2	43
184	Iridium-based polymer for memristive devices with integrated logic and arithmetic applications. Journal of Materials Chemistry C, 2020, 8, 16845-16857.	5.5	8
185	Multichannel parallel processing of neural signals in memristor arrays. Science Advances, 2020, 6, .	10.3	36
186	Emerging Memristive Artificial Synapses and Neurons for Energyâ€Efficient Neuromorphic Computing. Advanced Materials, 2020, 32, e2004659.	21.0	175
187	Artificial synaptic characteristics of TiO2/HfO2 memristor with self-rectifying switching for brain-inspired computing. Chaos, Solitons and Fractals, 2020, 140, 110236.	5.1	40
188	An Atomically Thin Optoelectronic Machine Vision Processor. Advanced Materials, 2020, 32, e2002431.	21.0	111
189	Neuro-inspired computing chips. Nature Electronics, 2020, 3, 371-382.	26.0	402
190	Resistive Crossbars as Approximate Hardware Building Blocks for Machine Learning: Opportunities and Challenges. Proceedings of the IEEE, 2020, 108, 2276-2310.	21.3	55
191	Solution to alleviate the impact of line resistance on the crossbar array. IET Circuits, Devices and Systems, 2020, 14, 498-504.	1.4	2
192	Highly Uniform Twoâ€Terminal Artificial Synapses Based on Polycrystalline Hf 0.5 Zr 0.5 O 2 for Sparsified Back Propagation Networks. Advanced Electronic Materials, 2020, 6, 2000204.	5.1	4
193	Optoelectronic Synapses Based on Hot-Electron-Induced Chemical Processes. Nano Letters, 2020, 20, 1536-1541.	9.1	19
194	Non-volatile optical memory in vertical van der Waals heterostructures. Journal of Semiconductors, 2020, 41, 072906.	3.7	5
195	aCortex: An Energy-Efficient Multipurpose Mixed-Signal Inference Accelerator. IEEE Journal on Exploratory Solid-State Computational Devices and Circuits, 2020, 6, 98-106.	1.5	5
196	Design of <i>In-Situ</i> Learning Bidirectional Associative Memory Neural Network Circuit With Memristor Synapse. IEEE Transactions on Emerging Topics in Computational Intelligence, 2021, 5, 743-754.	4.9	18
197	Convolution Kernel Operations on a Two-Dimensional Spin Memristor Cross Array. Sensors, 2020, 20, 6229.	3.8	0
198	Near-sensor and in-sensor computing. Nature Electronics, 2020, 3, 664-671.	26.0	385

#	Article	IF	CITATIONS
199	Recent advances in optical and optoelectronic data storage based on luminescent nanomaterials. Nanoscale, 2020, 12, 23391-23423.	5.6	47
200	HfO2/TiOx bilayer structure memristor with linear conductance tuning for high density memory and neuromorphic computing. Journal of Applied Physics, 2020, 128, .	2.5	12
201	Inâ€Memory Computing with Memristor Content Addressable Memories for Pattern Matching. Advanced Materials, 2020, 32, e2003437.	21.0	54
202	Memristors—From Inâ€Memory Computing, Deep Learning Acceleration, and Spiking Neural Networks to the Future of Neuromorphic and Bioâ€Inspired Computing. Advanced Intelligent Systems, 2020, 2, 2000085.	6.1	143
203	Neuromorphic Engineering for Hardware Computational Acceleration and Biomimetic Perception Motion Integration. Advanced Intelligent Systems, 2020, 2, 2000124.	6.1	17
204	Variation-tolerant, low-power, and high endurance read scheme for memristor memories. Analog Integrated Circuits and Signal Processing, 2020, 105, 83-98.	1.4	4
205	Superior Data Retention of Programmable Linear RAM (PLRAM) for Compute-in-Memory Application. , 2020, , .		3
206	Current-Mode Carry-Free Multiplier Design using a Memristor-Transistor Crossbar Architecture. , 2020, , .		8
207	Transiently chaotic simulated annealing based on intrinsic nonlinearity of memristors for efficient solution of optimization problems. Science Advances, 2020, 6, eaba9901.	10.3	51
208	Transport Properties of Magnetic Nanogranular Composites with Dispersed Ions in an Insulating Matrix. Journal of Experimental and Theoretical Physics, 2020, 131, 160-176.	0.9	24
209	Circuits and Architectures for In-Memory Computing-Based Machine Learning Accelerators. IEEE Micro, 2020, 40, 8-22.	1.8	18
210	Training DNN IoT Applications for Deployment On Analog NVM Crossbars. , 2020, , .		3
211	A memristor-based hybrid analog-digital computing platform for mobile robotics. Science Robotics, 2020, 5, .	17.6	28
212	Recent Progress on Memristive Convolutional Neural Networks for Edge Intelligence. Advanced Intelligent Systems, 2020, 2, 2000114.	6.1	19
213	High-Throughput In-Memory Computing for Binary Deep Neural Networks With Monolithically Integrated RRAM and 90-nm CMOS. IEEE Transactions on Electron Devices, 2020, 67, 4185-4192.	3.0	92
214	Filamentâ€Free Bulk Resistive Memory Enables Deterministic Analogue Switching. Advanced Materials, 2020, 32, e2003984.	21.0	83
215	Antiphase Boundaries Constitute Fast Cation Diffusion Paths in SrTiO <sub>3</sub> Memristive Devices. Advanced Functional Materials, 2020, 30, 2004118.	14.9	19
216	Inâ€Memory Vectorâ€Matrix Multiplication in Monolithic Complementary Metal–Oxide–Semiconductorâ€Memristor Integrated Circuits: Design Choices, Challenges, and Perspectives. Advanced Intelligent Systems, 2020, 2, 2000115.	6.1	100

#	Article	IF	CITATIONS
217	Neural signal analysis with memristor arrays towardsÂhigh-efficiency brain–machine interfaces. Nature Communications, 2020, 11, 4234.	12.8	82
218	Committee machines—a universal method to deal with non-idealities in memristor-based neural networks. Nature Communications, 2020, 11, 4273.	12.8	51
219	Memristive Devices for New Computing Paradigms. Advanced Intelligent Systems, 2020, 2, 2000105. Multifilamentary Character of Anticorrelated Capacitive and Resistive Switching in Memristive	6.1	57
220	Structures Based on <mml:math <br="" display="inline" xmlns:mml="http://www.w3.org/1998/Math/MathML">overflow="scroll"&gt; <mml:mo< td=""><td></td><td></td></mml:mo<></mml:math>		

#	Article		CITATIONS
235	A Fully Integrated Reprogrammable CMOS-RRAM Compute-in-Memory Coprocessor for Neuromorphic Applications. IEEE Journal on Exploratory Solid-State Computational Devices and Circuits, 2020, 6, 36-44.		20
236	A biomorphic neuroprocessor based on a composite memristor-diode crossbar. Microelectronics Journal, 2020, 102, 104827.	2.0	22
237	SSM: a high-performance scheme for in situ training of imprecise memristor neural networks. Neurocomputing, 2020, 407, 270-280.	5.9	12
238	Device and Circuit Architectures for Inâ€Memory Computing. Advanced Intelligent Systems, 2020, 2, 2000040.	6.1	100
239	NeuroMem: Analog Graphene-Based Resistive Memory for Artificial Neural Networks. Scientific Reports, 2020, 10, 9473.	3.3	37
240	CMOS-integrated nanoscale memristive crossbars for CNN and optimization acceleration. , 2020, , .		15
241	Time Complexity of In-Memory Solution of Linear Systems. IEEE Transactions on Electron Devices, 2020, 67, 2945-2951.	3.0	25
242	Organic small molecule-based RRAM for data storage and neuromorphic computing. Journal of Materials Chemistry C, 2020, 8, 12714-12738.	5.5	76
243	A Spiking Recurrent Neural Network With Phase-Change Memory Neurons and Synapses for the Accelerated Solution of Constraint Satisfaction Problems. IEEE Journal on Exploratory Solid-State Computational Devices and Circuits, 2020, 6, 89-97.	1.5	25
244	Memristive Fuzzy Deep Learning Systems. IEEE Transactions on Fuzzy Systems, 2021, 29, 2224-2238.	9.8	6
245	Intrinsic Bounds for Computing Precision in Memristor-Based Vector-by-Matrix Multipliers. IEEE Nanotechnology Magazine, 2020, 19, 429-435.	2.0	13
246	Performance Analysis of Convolutional Neural Network Using Multi-level Memristor Crossbar for Edge Computing. , 2020, , .		7
247	Pathways to efficient neuromorphic computing with non-volatile memory technologies. Applied Physics Reviews, 2020, 7, .	11.3	94
248	Impact and Quantization of Short-Term Relaxation effect in Analog RRAM. , 2020, , .		5
249	Memristors with alloyed electrodes. Nature Nanotechnology, 2020, 15, 510-511.	31.5	11
250	On-Chip TaOx-Based Non-volatile Resistive Memory for in vitro Neurointerfaces. Frontiers in Neuroscience, 2020, 14, 94.	2.8	10
251	Research progress on solutions to the sneak path issue in memristor crossbar arrays. Nanoscale Advances, 2020, 2, 1811-1827.	4.6	110
252	Shortest Path Computing in Directed Graphs with Weighted Edges Mapped on Random Networks of Memristors. Parallel Processing Letters, 2020, 30, 2050002.	0.6	2

#	Article	IF	Citations
253	Towards synthetic neural networks: can artificial electrochemical neurons be coupled with artificial memristive synapses?. Japanese Journal of Applied Physics, 2020, 59, S10801.	1.5	14
254	Semiconductor Quantum Dots for Memories and Neuromorphic Computing Systems. Chemical Reviews, 2020, 120, 3941-4006.	47.7	203
255	A Memristor with Low Switching Current and Voltage for 1S1R Integration and Array Operation. Advanced Electronic Materials, 2020, 6, 1901411.	5.1	51
256	A Memristor-Based Spiking Neural Network With High Scalability and Learning Efficiency. IEEE Transactions on Circuits and Systems II: Express Briefs, 2020, 67, 931-935.	3.0	22
257	Challenges and Trends inDeveloping Nonvolatile Memory-Enabled Computing Chips for Intelligent Edge Devices. IEEE Transactions on Electron Devices, 2020, 67, 1444-1453.	3.0	35
258	Flexible Poly(Vinyl Alcohol)–Graphene Oxide Hybrid Nanocomposite Based Cognitive Memristor with Pavlovian onditioned Reflex Activities. Advanced Electronic Materials, 2020, 6, 1901402.	5.1	31
259	Memory devices and applications for in-memory computing. Nature Nanotechnology, 2020, 15, 529-544.	31.5	968
260	Comprehensive Compact Phenomenological Modeling of Integrated Metal-Oxide Memristors. IEEE Nanotechnology Magazine, 2020, 19, 344-349.	2.0	19
261	Defects Mitigation in Resistive Crossbars for Analog Vector Matrix Multiplication. , 2020, , .		9
262	Sneak, discharge, and leakage current issues in a high-dimensional 1T1M memristive crossbar. Journal of Computational Electronics, 2020, 19, 565-575.	2.5	16
263	Ultrafast machine vision with 2D material neural network image sensors. Nature, 2020, 579, 62-66.	27.8	546
264	Vector multiplications using memristive devices and applications thereof. , 2020, , 221-254.		2
265	Computing with device dynamics. , 2020, , 255-273.		1
266	RRAM-based coprocessors for deep learning. , 2020, , 363-395.		1
267	Synaptic realizations based on memristive devices. , 2020, , 427-477.		0
268	Computational Restructuring: Rethinking Image Processing using Memristor Crossbar Arrays. , 2020, , .		3
269	RRAM Crossbar-Based In-Memory Computation of Anisotropic Filters for Image Preprocessingloa. IEEE Access, 2020, 8, 127569-127580.	4.2	13
270	Resistive switching memories. , 2020, , 17-61.		5

#	Article		CITATIONS
271	Novel Floating and Grounded Memory Interface Circuits for Constructing Mem-Elements and Their Applications. IEEE Access, 2020, 8, 114761-114772.		18
272	FPGA-Based Memristor Emulator Circuit for Binary Convolutional Neural Networks. IEEE Access, 2020, 8, 117736-117745.	4.2	3
273	In-Memory Digital Comparator Based on a Single Multivalued One-Transistor-One-Resistor Memristor. IEEE Transactions on Electron Devices, 2020, 67, 1293-1296.	3.0	16
274	Memristor-Based Edge Detection for Spike Encoded Pixels. Frontiers in Neuroscience, 2020, 13, 1386.		14
275	Quantitative, Dynamic TaO <sub><i>x</i></sub> Memristor/Resistive Random Access Memory Model. ACS Applied Electronic Materials, 2020, 2, 701-709.	4.3	38
276	Evolution of Phase-Change Memory for the Storage-Class Memory and Beyond. IEEE Transactions on Electron Devices, 2020, 67, 1394-1406.	3.0	81
277	A Memristive Circuit Implementation of Eyes State Detection in Fatigue Driving Based on Biological Long Short-Term Memory Rule. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2021, 18, 2218-2229.	3.0	5
278	In-Memory PageRank Accelerator With a Cross-Point Array of Resistive Memories. IEEE Transactions on Electron Devices, 2020, 67, 1466-1470.	3.0	37
279	A comprehensive review on emerging artificial neuromorphic devices. Applied Physics Reviews, 2020, 7,		417
280	Nonstationary distributions and relaxation times in a stochastic model of memristor. Journal of Statistical Mechanics: Theory and Experiment, 2020, 2020, 024003.	2.3	92
281	Breaking the Quantum PIN Code of Atomic Synapses. Nano Letters, 2020, 20, 1192-1200.	9.1	7
282	Resistive switching materials forÂinformation processing. Nature Reviews Materials, 2020, 5, 173-195.	48.7	668
283	Classification with a disordered dopant-atom network in silicon. Nature, 2020, 577, 341-345.	27.8	53
284	Modeling of discrete fracmemristor and its application. AIP Advances, 2020, 10, .	1.3	57
285	A Memristive Multiplier Using Semi-Serial IMPLY-Based Adder. IEEE Transactions on Circuits and Systems I: Regular Papers, 2020, 67, 1495-1506.	5.4	31
286	Strategies to Improve the Accuracy of Memristor-Based Convolutional Neural Networks. IEEE Transactions on Electron Devices, 2020, 67, 895-901.	3.0	49
287	Nanosecond resistive switching in Ag/AgI/PtIr nanojunctions. Beilstein Journal of Nanotechnology,	2.8	7
	2020, 11, 92-100.	2.0	,

#	Article		CITATIONS
289	Nanoscale resistive switching devices for memory and computing applications. Nano Research, 2020, 13, 1228-1243.		91
290	A Flexible Carbon Nanotube Senâ€Memory Device. Advanced Materials, 2020, 32, e1907288.	21.0	48
291	A Pure 2Hâ€MoS <sub>2</sub> Nanosheetâ€Based Memristor with Low Power Consumption and Linear Multilevel Storage for Artificial Synapse Emulator. Advanced Electronic Materials, 2020, 6, 1901342.	5.1	67
292	One-step regression and classification with cross-point resistive memory arrays. Science Advances, 2020, 6, eaay2378.	10.3	68
293	Neurohybrid Memristive CMOS-Integrated Systems for Biosensors and Neuroprosthetics. Frontiers in Neuroscience, 2020, 14, 358.	2.8	143
294	Robust DNAâ€Bridged Memristor for Textile Chips. Angewandte Chemie - International Edition, 2020, 59, 12762-12768.	13.8	40
295	Conductive-bridging random-access memories for emerging neuromorphic computing. Nanoscale, 2020, 12, 14339-14368.	5.6	46
296	The Properties of Memristive Structures Based on (Co40Fe40B20)x(LiNbO3)100 –x Nanocomposites Synthesized on SiO2/Si Substrates. Technical Physics, 2020, 65, 243-249.	0.7	1
297	Three-dimensional memristor circuits as complex neural networks. Nature Electronics, 2020, 3, 225-232.	26.0	242
298	Analog content-addressable memories with memristors. Nature Communications, 2020, 11, 1638.	12.8	86
298 299	Analog content-addressable memories with memristors. Nature Communications, 2020, 11, 1638. ITT-RNA: Imperfection Tolerable Training for RRAM-Crossbar-Based Deep Neural-Network Accelerator. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 129-142.	12.8 2.7	86 15
298 299 300	Analog content-addressable memories with memristors. Nature Communications, 2020, 11, 1638. ITT-RNA: Imperfection Tolerable Training for RRAM-Crossbar-Based Deep Neural-Network Accelerator. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 129-142. Improving Write Performance on Cross-Point RRAM Arrays by Leveraging Multidimensional Non-Uniformity of Cell Effective Voltage. IEEE Transactions on Computers, 2021, 70, 566-580.	12.8 2.7 3.4	86 15 9
298 299 300 301	Analog content-addressable memories with memristors. Nature Communications, 2020, 11, 1638.         ITT-RNA: Imperfection Tolerable Training for RRAM-Crossbar-Based Deep Neural-Network Accelerator.         IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 129-142.         Improving Write Performance on Cross-Point RRAM Arrays by Leveraging Multidimensional Non-Uniformity of Cell Effective Voltage. IEEE Transactions on Computers, 2021, 70, 566-580.         Memristive Quantized Neural Networks: A Novel Approach to Accelerate Deep Learning On-Chip. IEEE Transactions on Cybernetics, 2021, 51, 1875-1887.	12.8 2.7 3.4 9.5	86 15 9 28
298 299 300 301 302	Analog content-addressable memories with memristors. Nature Communications, 2020, 11, 1638.         ITT-RNA: Imperfection Tolerable Training for RRAM-Crossbar-Based Deep Neural-Network Accelerator.         IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 129-142.         Improving Write Performance on Cross-Point RRAM Arrays by Leveraging Multidimensional Non-Uniformity of Cell Effective Voltage. IEEE Transactions on Computers, 2021, 70, 566-580.         Memristive Quantized Neural Networks: A Novel Approach to Accelerate Deep Learning On-Chip. IEEE Transactions on Cybernetics, 2021, 51, 1875-1887.         Flexible <scp>3D</scp> memristor array for binary storage and multiâ€states neuromorphic computing applications. InformaĂnĂ-MateriĂ;ly, 2021, 3, 212-221.	12.8 2.7 3.4 9.5 17.3	<ul> <li>86</li> <li>15</li> <li>9</li> <li>28</li> <li>52</li> </ul>
<ul> <li>298</li> <li>299</li> <li>300</li> <li>301</li> <li>302</li> <li>303</li> </ul>	Analog content-addressable memories with memristors. Nature Communications, 2020, 11, 1638.         ITT-RNA: Imperfection Tolerable Training for RRAM-Crossbar-Based Deep Neural-Network Accelerator.         IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 129-142.         Improving Write Performance on Cross-Point RRAM Arrays by Leveraging Multidimensional Non-Uniformity of Cell Effective Voltage. IEEE Transactions on Computers, 2021, 70, 566-580.         Memristive Quantized Neural Networks: A Novel Approach to Accelerate Deep Learning On-Chip. IEEE Transactions on Cybernetics, 2021, 51, 1875-1887.         Flexible <scp>3D</scp> memristor array for binary storage and multiâ€states neuromorphic computing applications. InformaAnA-MateriĂ;IV, 2021, 3, 212-221.         Computational Restructuring: Rethinking Image Compression Using Resistive Crossbar Arrays. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 836-849.	12.8 2.7 3.4 9.5 17.3 2.7	<ul> <li>86</li> <li>15</li> <li>9</li> <li>28</li> <li>52</li> <li>3</li> </ul>
298 299 300 301 302 303	Analog content-addressable memories with memristors. Nature Communications, 2020, 11, 1638. ITT-RNA: Imperfection Tolerable Training for RRAM-Crossbar-Based Deep Neural-Network Accelerator. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 129-142. Improving Write Performance on Cross-Point RRAM Arrays by Leveraging Multidimensional Non-Uniformity of Cell Effective Voltage. IEEE Transactions on Computers, 2021, 70, 566-580. Memristive Quantized Neural Networks: A Novel Approach to Accelerate Deep Learning On-Chip. IEEE Transactions on Cybernetics, 2021, 51, 1875-1887. Flexible <scp>3D</scp> memristor array for binary storage and multiâCstates neuromorphic computing applications. InformaAnĂ-MateriĂ <sub>1</sub> ly, 2021, 3, 212-221. Computational Restructuring: Rethinking Image Compression Using Resistive Crossbar Arrays. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 836-849. Roadmap on emerging hardware and technology for machine learning. Nanotechnology, 2021, 32, 012002.	12.8 2.7 3.4 9.5 17.3 2.7 2.6	<ul> <li>86</li> <li>15</li> <li>9</li> <li>28</li> <li>52</li> <li>3</li> <li>104</li> </ul>
<ul> <li>298</li> <li>299</li> <li>300</li> <li>301</li> <li>302</li> <li>303</li> <li>304</li> <li>305</li> </ul>	Analog content-addressable memories with memristors. Nature Communications, 2020, 11, 1638.         ITT-RNA: Imperfection Tolerable Training for RRAM-Crossbar-Based Deep Neural-Network Accelerator.         IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 129-142.         Improving Write Performance on Cross-Point RRAM Arrays by Leveraging Multidimensional Non-Uniformity of Cell Effective Voltage. IEEE Transactions on Computers, 2021, 70, 566-580.         Memristive Quantized Neural Networks: A Novel Approach to Accelerate Deep Learning On-Chip. IEEE Transactions on Cybernetics, 2021, 51, 1875-1887.         Flexible <scp>3D</scp> memristor array for binary storage and multiä&states neuromorphic computing applications. InformaAnA-MateriAily, 2021, 3, 212-221.         Computational Restructuring: Rethinking Image Compression Using Resistive Crossbar Arrays. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 836-849.         Roadmap on emerging hardware and technology for machine learning. Nanotechnology, 2021, 32, 012002.         2D Material Based Synaptic Devices for Neuromorphic Computing. Advanced Functional Materials, 2021, 31, 2005443.	12.8 2.7 3.4 9.5 17.3 2.7 2.6 14.9	<ul> <li>86</li> <li>15</li> <li>9</li> <li>28</li> <li>52</li> <li>3</li> <li>104</li> <li>165</li> </ul>

	CHATION R	EPORT	
#	Article	IF	CITATIONS
307	Organic Memristive Devices for Neuromorphic Applications. BioNanoScience, 2021, 11, 227-231.	3.5	2
308	Necessary conditions for STDP-based pattern recognition learning in a memristive spiking neural network. Neural Networks, 2021, 134, 64-75.	5.9	84
309	The Future of Memristors: Materials Engineering and Neural Networks. Advanced Functional Materials, 2021, 31, 2006773.	14.9	187
310	Gateâ€Controlled Polarityâ€Reversible Photodiodes with Ambipolar 2D Semiconductors. Advanced Functional Materials, 2021, 31, 2007559.	14.9	38
311	Lowâ€Power Computing with Neuromorphic Engineering. Advanced Intelligent Systems, 2021, 3, 2000150.	6.1	27
312	Competing memristors for brain-inspired computing. IScience, 2021, 24, 101889.	4.1	51
313	Mathematical model of a neuromorphic network based on memristive elements. Chaos, Solitons and Fractals, 2021, 143, 110548.	5.1	14
314	Optoelectronic dynamic memristor systems based on two-dimensional crystals. Chaos, Solitons and Fractals, 2021, 142, 110523.	5.1	11
315	A CMOS-integrated compute-in-memory macro based on resistive random-access memory for Al edge devices. Nature Electronics, 2021, 4, 81-90.		66
316	Neuromorphic computing: From devices to integrated circuits. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2021, 39, 010801.	1.2	10
317	Efficient Defect Identification via Oxide Memristive Crossbar Array Based Morphological Image Processing. Advanced Intelligent Systems, 2021, 3, 2000202.	6.1	11
318	Application of Memristors in Hardware Security: A Current Stateâ€ofâ€theâ€Art Technology. Advanced Intelligent Systems, 2021, 3, 2000127.	6.1	20
319	Memristor-Based Variation-Enabled Differentially Private Learning Systems for Edge Computing in IoT. IEEE Internet of Things Journal, 2021, 8, 9672-9682.	8.7	8
320	Artificial Skin Perception. Advanced Materials, 2021, 33, e2003014.	21.0	203
321	Memristor BJT pair based low complex circuits for portable electronics. Analog Integrated Circuits and Signal Processing, 2021, 107, 239-247.	1.4	0
322	Exponential Stabilization of Inertial Memristive Neural Networks With Multiple Time Delays. IEEE Transactions on Cybernetics, 2021, 51, 579-588.	9.5	52
323	Rectifying optoelectronic memory based on WSe <sub>2</sub> /graphene heterostructures. Nanoscale Advances, 2021, 3, 4952-4960.	4.6	13
324	Self-Selective Multi-Terminal Memtransistor Crossbar Array for In-Memory Computing. ACS Nano, 2021, 15, 1764-1774.	14.6	80

#	Article	IF	CITATIONS
325	Memristive Circuit Design of Brain-Like Emotional Learning and Generation. IEEE Transactions on Cybernetics, 2023, 53, 222-235.		14
326	Al-based memristor applied to habituation sensory nervous system. Wuli Xuebao/Acta Physica Sinica, 2021, 70, 068502.	0.5	2
327	Improved rectification characteristics by engineering energy barrier height in TiOx-based RRAM. Microelectronic Engineering, 2021, 237, 111498.	2.4	5
328	Synaptic Weight Evolution and Charge Trapping Mechanisms in a Synaptic Pass-Transistor Operation With a Direct Potential Output. IEEE Transactions on Neural Networks and Learning Systems, 2021, 32, 4728-4741.	11.3	5
329	Unary Coding and Variation-Aware Optimal Mapping Scheme for Reliable ReRAM-Based Neuromorphic Computing. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2021, 40, 2495-2507.	2.7	13
330	Analog circuit integration of backpropagation learning in memristive HTM architecture. , 2021, , 427-438.		0
331	XMAP: Programming Memristor Crossbars for Analog Matrix–Vector Multiplication: Toward High Precision Using Representable Matrices. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2022, 41, 1827-1841.	2.7	5
332	Integrated neuromorphic computing networks by artificial spin synapses and spin neurons. NPG Asia Materials, 2021, 13, .	7.9	28
333	Two-dimensional ferroelectric channel transistors integrating ultra-fast memory and neural computing. Nature Communications, 2021, 12, 53.	12.8	160
334	Ratio-based multi-level resistive memory cells. Scientific Reports, 2021, 11, 1351.	3.3	7
335	Emulation of biphasic plasticity in retinal electrical synapses for light-adaptive pattern pre-processing. Nanoscale, 2021, 13, 3483-3492.	5.6	16
336	Synaptic transistors and neuromorphic systems based on carbon nano-materials. Nanoscale, 2021, 13, 7498-7522.	5.6	28
337			
	The fourth circuit element was found: a brief history. , 2021, , 3-15.		2
338	The fourth circuit element was found: a brief history. , 2021, , 3-15. Spontaneous sparse learning for PCM-based memristor neural networks. Nature Communications, 2021, 12, 319.	12.8	2 32
338 339	The fourth circuit element was found: a brief history., 2021, , 3-15.         Spontaneous sparse learning for PCM-based memristor neural networks. Nature Communications, 2021, 12, 319.         Memristor-Based Image Enhancement: High Efficiency and Robustness. IEEE Transactions on Electron Devices, 2021, 68, 602-609.	12.8 3.0	2 32 17
338 339 340	The fourth circuit element was found: a brief history., 2021, , 3-15.         Spontaneous sparse learning for PCM-based memristor neural networks. Nature Communications, 2021, 12, 319.         Memristor-Based Image Enhancement: High Efficiency and Robustness. IEEE Transactions on Electron Devices, 2021, 68, 602-609.         Optimized Multi-Memristor Model based Low Energy and Resilient Current-Mode Multiplier Design., 2021,	12.8 3.0	2 32 17 1
338 339 340 341	The fourth circuit element was found: a brief history., 2021, , 3-15.         Spontaneous sparse learning for PCM-based memristor neural networks. Nature Communications, 2021, 12, 319.         Memristor-Based Image Enhancement: High Efficiency and Robustness. IEEE Transactions on Electron Devices, 2021, 68, 602-609.         Optimized Multi-Memristor Model based Low Energy and Resilient Current-Mode Multiplier Design., 2021, ,         A Low-bit And Data-conversion-free Memristive Spiking Computing Network. Journal of Physics: Conference Series, 2021, 1828, 012065.	12.8 3.0 0.4	2 32 17 1 0

#	Article	IF	CITATIONS
343	Noise Tailoring in Memristive Filaments. ACS Applied Materials & amp; Interfaces, 2021, 13, 7453-7460.	8.0	16
344	Emulating artificial neuron and synaptic properties with SiO <sub>2</sub> -based memristive devices by tuning threshold and bipolar switching effects. Journal Physics D: Applied Physics, 2021, 54, 225303.	2.8	23
345	Optimized programming algorithms for multilevel RRAM in hardware neural networks. , 2021, , .		15
346	Novel Weight Mapping Method for Reliable NVM based Neural Network. , 2021, , .		2
347	Conductance variations and their impact on the precision of in-memory computing with resistive switching memory (RRAM). , 2021, , .		8
349	Random sketch learning for deep neural networks in edge computing. Nature Computational Science, 2021, 1, 221-228.	8.0	19
350	Functional Applications of Future Data Storage Devices. Advanced Electronic Materials, 2021, 7, 2001181.	5.1	20
351	Lowâ€Power Selfâ€Rectifying Memristive Artificial Neural Network for Near Internetâ€ofâ€Things Sensor Computing. Advanced Electronic Materials, 2021, 7, 2100050.	5.1	27
352	Memristive Devices with Multiple Resistance States Based on the Migration of Protons in αâ€MoO <sub>3</sub> /SrCoO <sub>2.5</sub> Stacks. Advanced Electronic Materials, 2021, 7, 2001243.	5.1	5
353	Phaseâ€Transitionâ€Induced VO <sub>2</sub> Thin Film IR Photodetector and Threshold Switching Selector for Optical Neural Network Applications. Advanced Electronic Materials, 2021, 7, 2001254.	5.1	27
354	Memristive learning cellular automata for edge detection. Chaos, Solitons and Fractals, 2021, 145, 110700.	5.1	13
355	In situ Parallel Training of Analog Neural Network Using Electrochemical Random-Access Memory. Frontiers in Neuroscience, 2021, 15, 636127.	2.8	24
356	Global stabilization of fractional-order memristor-based neural networks with incommensurate orders and multiple time-varying delays: a positive-system-based approach. Nonlinear Dynamics, 2021, 104, 2303-2329.	5.2	19
357	One Transistor One Electrolyteâ€Gated Transistor Based Spiking Neural Network for Powerâ€Efficient Neuromorphic Computing System. Advanced Functional Materials, 2021, 31, 2100042.	14.9	46
358	Identifying relaxation and random telegraph noises in filamentary analog RRAM for neuromorphic computing. , 2021, , .		3
359	Stimuliâ€Responsive Memristive Materials for Artificial Synapses and Neuromorphic Computing. Advanced Materials, 2021, 33, e2006469.	21.0	88
360	Resistive Switching of the Tetraindolyl Derivative in Ultrathin Films: A Potential Candidate for Nonvolatile Memory Applications. Langmuir, 2021, 37, 4449-4459.	3.5	14
361	In-Memory Computing with Resistive Memory Circuits: Status and Outlook. Electronics (Switzerland), 2021, 10, 1063.	3.1	34

ARTICLE IF CITATIONS # Electron Doping Effect in the Resistive Switching Properties of Al/Gd<sub>1â€"<i>x</i></sub>Ca<sub><i>x</i></sub>MnO<sub>3</sub>/Au Memristor Devices. ACS 362 8.0 7 Applied Materials & amp; Interfaces, 2021, 13, 18365-18371. Low-power electronic technologies for harsh radiation environments. Nature Electronics, 2021, 4, 363 26.0 39 243-253. 364 A 3-D Reconfigurable RRAM Crossbar Inference Engine., 2021, , . 3 Brain-inspired computing via memory device physics. APL Materials, 2021, 9, . 5.1 High Thermal Stability and Fast Speed Phase Change Memory by Optimizing GeTe Alloys with Ru Doping. 366 1.8 1 ECS Journal of Solid State Science and Technology, 2021, 10, 055009. Memristor Crossbar Design Framework for Quantum Computing., 2021, , . 368 Design of Tunable Analog Filters Using Memristive Crossbars., 2021,,. 3 Fully Circuit Implementation of a two-layer Memristive Neural Network for Pattern Recognition., Neural Functional Connectivity Reconstruction with Secondâ€Order Memristor Network. Advanced 370 6.1 9 Intelligent Systems, 2021, 3, 2000276. Lowâ€Power Memristive Logic Device Enabled by Controllable Oxidation of 2D HfSe<sub>2</sub> for 371 11.2 Inâ€Memory Computing. Advanced Science, 2021, 8, e2005038. Low-Power Memristor-Based Computing for Edge-Al Applications., 2021,,. 372 13 System-Theoretic Methods for Designing Bio-Inspired Mem-Computing Memristor Cellular Nonlinear 4.8 Networks. Frontiers in Nanotechnology, 2021, 3, . SIXOR: Single-Cycle In-Memristor XOR. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 374 3.1 17 2021, 29, 925-935. Temporal State Machines: Using Temporal Memory to Stitch Time-based Graph Computations. ACM 2.3 Journal on Emerging Technologies in Computing Systems, 2021, 17, 1-27. Flexible Ta/TiO <sub>x</sub> /TaO <sub>x</sub> /Ru memristive synaptic devices on polyimide 376 2.6 4 substrates. Nanotechnology, 2021, 32, 335205. Selfâ€Programming Synaptic Resistor Circuit for Intelligent Systems. Advanced Intelligent Systems, 2021, 6.1 3,2100016. All Hardware-Based Two-Layer Perceptron Implemented in Memristor Crossbar Arrays., 2021, , . 378 0 Resistive Memory Process Optimization for High Resistance Switching Toward Scalable Analog 379 Compute Technology for Deep Learning. IEEE Electron Device Letters, 2021, 42, 759-762.

#	Article		CITATIONS
380	Noise-assisted persistence and recovery of memory state in a memristive spiking neuromorphic network. Chaos, Solitons and Fractals, 2021, 146, 110890.		76
381	Prospect of Spintronics in Neuromorphic Computing. Advanced Electronic Materials, 2021, 7, 2100465.	5.1	33
383	Memristive combinational logic circuits and stochastic computing implementation scheme. Circuit World, 2021, ahead-of-print, .	0.9	0
384	Analytical model for memristive systems for neuromorphic computation. Journal Physics D: Applied Physics, 2021, 54, 355101.	2.8	7
385	New study on fixed-time synchronization control of delayed inertial memristive neural networks. Applied Mathematics and Computation, 2021, 399, 126035.	2.2	49
386	Memristive Crossbar Arrays for Storage and Computing Applications. Advanced Intelligent Systems, 2021, 3, 2100017.	6.1	80
387	Accelerated Learning in Wide-Band-Gap AlN Artificial Photonic Synaptic Devices: Impact on Suppressed Shallow Trap Level. Nano Letters, 2021, 21, 7879-7886.	9.1	17
388	The viability of analog-based accelerators for neuromorphic computing: a survey. Neuromorphic Computing and Engineering, 2021, 1, 012001.	5.9	16
389	Frugal discrete memristive device based on potassium permanganate solution. Materials Research Express, 2021, 8, 076304.	1.6	5
390	Organic Memory and Memristors: From Mechanisms, Materials to Devices. Advanced Electronic Materials, 2021, 7, 2100432.	5.1	81
391	1/f noise spectroscopy and noise tailoring of nanoelectronic devices. Nano Futures, 2021, 5, 042002.	2.2	4
392	Investigation of ReRAM Variability on Flow-Based Edge Detection Computing Using HfO <sub>2</sub> -Based ReRAM Arrays. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 2900-2910.	5.4	4
393	Memristor-CMOS Hybrid Neuron Circuit with Nonideal-Effect Correction Related to Parasitic Resistance for Binary-Memristor-Crossbar Neural Networks. Micromachines, 2021, 12, 791.	2.9	16
394	Reservoir Computing System using Biomolecular Memristor. , 2021, , .		3
395	Comparative Study on Quantization-Aware Training of Memristor Crossbars for Reducing Inference Power of Neural Networks at The Edge. , 2021, , .		2
396	A Marr's Threeâ€Level Analytical Framework for Neuromorphic Electronic Systems. Advanced Intelligent Systems, 2021, 3, 2100054	6.1	3
397	Architecting for Artificial Intelligence with Emerging Nanotechnology. ACM Journal on Emerging Technologies in Computing Systems, 2021, 17, 1-33.	2.3	3
398	Hardwareâ€Friendly Stochastic and Adaptive Learning in Memristor Convolutional Neural Networks. Advanced Intelligent Systems, 2021, 3, 2100041.	6.1	16

#	Article		CITATIONS
399	Time Complexity of In-Memory Matrix-Vector Multiplication. IEEE Transactions on Circuits and Systems II: Express Briefs, 2021, 68, 2785-2789.		17
400	Fused RRAM-Based Shift-Add Architecture for Efficient Hyperdimensional Computing Paradigm. , 2021, , .		4
401	Reservoir computing with biocompatible organic electrochemical networks for brain-inspired biosignal classification. Science Advances, 2021, 7, eabh0693.	10.3	72
402	Realization of a non-markov chain in a single 2D mineral RRAM. Science Bulletin, 2021, 66, 1634-1640.		15
403	Ameliorate Performance of Memristor-Based ANNs in Edge Computing. IEEE Transactions on Computers, 2021, 70, 1299-1310.	3.4	11
404	Loading-Aware Reliability Improvement of Ultra-Low Power Memristive Neural Networks. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 3411-3421.	5.4	3
405	Accurate Program/Verify Schemes of Resistive Switching Memory (RRAM) for In-Memory Neural Network Circuits. IEEE Transactions on Electron Devices, 2021, 68, 3832-3837.	3.0	56
406	AlGaN-based ternary nitride memristors. Applied Physics A: Materials Science and Processing, 2021, 127, 1.	2.3	1
407	Analog Nanoscale Electro-Optical Synapses for Neuromorphic Computing Applications. ACS Nano, 2021, 15, 14776-14785.	14.6	35
408	Redundancy and Analog Slicing for Precise In-Memory Machine Learning—Part II: Applications and Benchmark. IEEE Transactions on Electron Devices, 2021, 68, 4379-4383.	3.0	8
409	Generalised Analog LSTMs Recurrent Modules for Neural Computing. Frontiers in Computational Neuroscience, 2021, 15, 705050.	2.1	4
410	Waferâ€Scale 2D Hafnium Diselenide Based Memristor Crossbar Array for Energyâ€Efficient Neural Network Hardware. Advanced Materials, 2022, 34, e2103376.	21.0	88
411	Analysis and mitigation of parasitic resistance effects for analog in-memory neural network acceleration. Semiconductor Science and Technology, 2021, 36, 114004.	2.0	4
412	2D materials–based homogeneous transistor-memory architecture for neuromorphic hardware. Science, 2021, 373, 1353-1358.	12.6	177
413	Signal Filtering Enabled by Spike Voltageâ€Dependent Plasticity in Metalloporphyrinâ€Based Memristors. Advanced Materials, 2021, 33, e2104370.	21.0	30
414	Parylene-based memristive synapses for hardware neural networks capable of dopamine-modulated STDP learning. Journal Physics D: Applied Physics, 2021, 54, 484002.	2.8	11
415	Ultralow–switching current density multilevel phase-change memory on a flexible substrate. Science, 2021, 373, 1243-1247.	12.6	78
416	RADAR: A Fast and Energy-Efficient Programming Technique for Multiple Bits-Per-Cell RRAM Arrays. IEEE Transactions on Electron Devices, 2021, 68, 4397-4403.	3.0	24

#	Article	IF	CITATIONS
417	Compensated Ferrimagnet Based Artificial Synapse and Neuron for Ultrafast Neuromorphic Computing. Advanced Functional Materials, 2022, 32, 2107870.	14.9	29
418	Time-varying data processing with nonvolatile memristor-based temporal kernel. Nature Communications, 2021, 12, 5727.	12.8	42
419	Redundancy and Analog Slicing for Precise In-Memory Machine Learning—Part I: Programming Techniques. IEEE Transactions on Electron Devices, 2021, 68, 4373-4378.	3.0	16
420	Neuromorphic electronics based on copying and pasting the brain. Nature Electronics, 2021, 4, 635-644.	26.0	94
421	Reliability Enhancement of Inverter-Based Memristor Crossbar Neural Networks Using Mathematical Analysis of Circuit Non-Idealities. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 4310-4323.	5.4	8
422	An analogue memristor made of silk fibroin polymer. Journal of Materials Chemistry C, 2021, 9, 14583-14588.	5.5	22
423	One Step in-Memory Solution of Inverse Algebraic Problems. SpringerBriefs in Applied Sciences and Technology, 2021, , 63-76.	0.4	0
424	Perceptron Circuit Design of Second Order Damped System Based on Memristor. Communications in Computer and Information Science, 2021, , 347-358.	0.5	0
425	A Supervised Learning Algorithm for Multilayer Spiking Neural Networks Based on Temporal Coding Toward Energy-Efficient VLSI Processor Design. IEEE Transactions on Neural Networks and Learning Systems, 2023, 34, 394-408.	11.3	16
426	Compact and Stable Memristive Visual Geometry Group Neural Network. IEEE Transactions on Neural Networks and Learning Systems, 2023, 34, 987-998.	11.3	4
427	Run-off election-based decision method for the training and inference process in an artificial neural network. Scientific Reports, 2021, 11, 895.	3.3	1
428	Design Exploration of ReRAM-Based Crossbar for Al Inference. IEEE Access, 2021, 9, 70430-70442.	4.2	3
429	The Challenges and Emerging Technologies for Low-Power Artificial Intelligence IoT Systems. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 4821-4834.	5.4	24
430	Multiply accumulate operations in memristor crossbar arrays for analog computing. Journal of Semiconductors, 2021, 42, 013104.	3.7	32
431	Hardware Implementation of Neuromorphic Computing Using Largeâ€5cale Memristor Crossbar Arrays. Advanced Intelligent Systems, 2021, 3, 2000137.	6.1	96
432	Artificial Neural Networks Based on Memristive Devices: From Device to System. Advanced Intelligent Systems, 2020, 2, 2000149.	6.1	39
433	A new emotion model of associative memory neural network based on memristor. Neurocomputing, 2020, 410, 83-92.	5.9	27
434	CMOS-integrated memristive non-volatile computing-in-memory for AI edge processors. Nature Electronics, 2019, 2, 420-428.	26.0	161

		CITATION R	EPORT	
#	Article		IF	Citations
435	Oxide-based filamentary RRAM for deep learning. Journal Physics D: Applied Physics, 2021,	54, 083002.	2.8	20
436	A Memristor-Based Compressive Sampling Encoder with Dynamic Rate Control for Low-Po Streaming. ACM Journal on Emerging Technologies in Computing Systems, 2020, 16, 1-16	wer Video	2.3	2
437	Mitigate Parasitic Resistance in Resistive Crossbar-based Convolutional Neural Networks. Journal on Emerging Technologies in Computing Systems, 2020, 16, 1-20.	ACM	2.3	12
438	Experimental Verification of Current Conduction Mechanism for a Lithium Niobate Based N ECS Journal of Solid State Science and Technology, 2020, 9, 103003.	Memristor.	1.8	6
439	Effect of Ag Concentration Dispersed in HfOx Thin Films on Threshold Switching. Nanosca Letters, 2020, 15, 27.	le Research	5.7	15
440	SPICE-Modeling of the Processes of Associative Self Learning and Unconditional Discrimin Logic Unit of a Neuroprocessor. Tyumen State University Herald Physical and Mathematica Oil Gas Energy, 2018, 4, 132-145.	ation in the al Modeling	0.2	2
441	Memristor and its Applications: A Comprehensive Review. Nanoscience and Nanotechnolo 2020, 10, 558-576.	gy - Asia,	0.7	2
442	Li-Doping Effect on Characteristics of ZnO Thin Films Resistive Random Access Memory. Micromachines, 2020, 11, 889.		2.9	14
443	2D Materials Based Optoelectronic Memory: Convergence of Electronic Memory and Optical Sensor. Research, 2019, 2019, 9490413.		5.7	85
444	Multilayer Memristive Neural Network Circuit Based on Online Learning for License Plate D IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2022, 43	Detection. 1, 3000-3011.	2.7	18
445	Mitigating State-Drift in Memristor Crossbar Arrays for Vector Matrix Multiplication. , 0, , .			2
446	Timing Selector: Using Transient Switching Dynamics to Solve the Sneak Path Issue of Cro Arrays. Small Science, 2022, 2, 2100072.	ssbar	9.9	18
447	Review of Manufacturing Process Defects and Their Effects on Memristive Devices. Journal Electronic Testing: Theory and Applications (JETTA), 2021, 37, 427-437.	of	1.2	8
448	A Dynamical Compact Model of Diffusive and Drift Memristors for Neuromorphic Computi Advanced Electronic Materials, 2022, 8, 2100696.	ng.	5.1	19
449	A Highly Robust Binary Neural Network Inference Accelerator Based on Binary Memristors. Electronics (Switzerland), 2021, 10, 2600.		3.1	4
450	Assessment and Improvement of the Pattern Recognition Performance of Memdiode-Base Arrays with Randomly Distributed Stuck-at-Faults. Electronics (Switzerland), 2021, 10, 242	d Cross-Point 27.	3.1	3
451	Research and Development of Parameter Extraction Approaches for Memristor Models. Micromachines, 2021, 12, 1220.		2.9	4
452	Effect of Oxygen Vacancy on the Conduction Modulation Linearity and Classification Accu Pr0.7Ca0.3MnO3 Memristor. Nanomaterials, 2021, 11, 2684.	racy of	4.1	8

#	Article	IF	CITATIONS
453	Multilevel switching in Mg-doped HfOx memristor through the mutual-ion effect. Applied Physics Letters, 2021, 119, .	3.3	20
454	TCAD Modeling of Resistive-Switching of HfO2 Memristors: Efficient Device-Circuit Co-Design for Neuromorphic Systems. Frontiers in Nanotechnology, 2021, 3, .	4.8	13
455	An artificial neural network chip based on two-dimensional semiconductor. Science Bulletin, 2022, 67, 270-277.	9.0	20
456	Short-Term to Long-Term Plasticity Transition Behavior of Memristive Devices with Low Power Consumption via Facilitating Ionic Drift of Implanted Lithium. Electronics (Switzerland), 2021, 10, 2564.	3.1	0
457	Tree-based machine learning performed in-memory with memristive analog CAM. Nature Communications, 2021, 12, 5806.	12.8	44
458	A low-dimensional hybrid p-i-n heterojunction neuromorphic transistor with ultra-high UV sensitivity and immediate switchable plasticity. Applied Materials Today, 2021, 25, 101223.	4.3	23
459	In-memory PageRank using a Crosspoint Array of Resistive Switching Memory (RRAM) devices. , 2020, , .		1
460	Issues of Implementing Neural Network Algorithms on Memristor Crossbars. Russian Microelectronics, 2020, 49, 568-573.	0.5	0
461	Analog error correcting codes for defect tolerant matrix multiplication in crossbars. , 2020, , .		6
462	Challenges and Trends of Nonvolatile In-Memory-Computation Circuits for Al Edge Devices. IEEE Open Journal of the Solid-State Circuits Society, 2021, 1, 171-183.	2.7	25
463	A Novel ReRAM-Based Architecture of Field Sequential Color Driver for High-Resolution LCoS Displays. IEEE Access, 2020, 8, 223385-223395.	4.2	0
464	IR-QNN Framework: An IR Drop-Aware Offline Training of Quantized Crossbar Arrays. IEEE Access, 2020, 8, 228392-228408.	4.2	21
465	Issues of implementing neural network algorithms on memristor crossbars. Izvestiya Vysshikh Uchebnykh Zavedenii Materialy Elektronnoi Tekhniki = Materials of Electronics Engineering, 2020, 22, 272-278.	0.2	3
466	Optimization Schemes for In-Memory Linear Regression Circuit With Memristor Arrays. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 4900-4909.	5.4	6
467	Design Flow for Hybrid CMOS/Memristor Systems—Part II: Circuit Schematics and Layout. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 4876-4888.	5.4	2
468	Design Flow for Hybrid CMOS/Memristor Systems—Part I: Modeling and Verification Steps. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 4862-4875.	5.4	9
469	Ultrathin Anion Conductors Based Memristor. Advanced Electronic Materials, 2022, 8, 2100845.	5.1	10
470	TinyML: Current Progress, Research Challenges, and Future Roadmap. , 2021, , .		39

#	Article	IF	CITATIONS
471	Analogue neuro-memristive convolutional dropout nets. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2020, 476, .	2.1	9
472	Hardware and Software Co-optimization for the Initialization Failure of the ReRAM-based Cross-bar Array. ACM Journal on Emerging Technologies in Computing Systems, 2020, 16, 1-19.	2.3	1
473	Memristor Crossbar Arrays Performing Quantum Algorithms. IEEE Transactions on Circuits and Systems I: Regular Papers, 2022, 69, 552-563.	5.4	9
474	Current Research Status and Future Prospect of the In-Memory Computing. , 2021, , .		3
475	Sodiumâ€Doped Titania Selfâ€Rectifying Memristors for Crossbar Array Neuromorphic Architectures. Advanced Materials, 2022, 34, e2106913.	21.0	28
477	A fully hardware-based memristive multilayer neural network. Science Advances, 2021, 7, eabj4801.	10.3	37
478	A Universal, Analog, In-Memory Computing Primitive for Linear Algebra Using Memristors. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 4889-4899.	5.4	13
479	Analog Solutions of Discrete Markov Chains via Memristor Crossbars. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 4910-4923.	5.4	12
480	Multilevel switching memristor by compliance current adjustment for off-chip training of neuromorphic system. Chaos, Solitons and Fractals, 2021, 153, 111587.	5.1	28
481	How to Build a Memristive Integrate-and-Fire Model for Spiking Neuronal Signal Generation. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 4837-4850.	5.4	30
482	Memristor modeling: challenges in theories, simulations, and device variability. Journal of Materials Chemistry C, 2021, 9, 16859-16884.	5.5	89
483	A Survey of Memristors and Its Applications. Advances in Intelligent Systems and Computing, 2021, , 403-428.	0.6	0
484	Memristive Circuit Design of Brain-Inspired Emotional Evolution Based on Theories of Internal Regulation and External Stimulation. IEEE Transactions on Biomedical Circuits and Systems, 2021, 15, 1380-1392.	4.0	11
485	Flexible and Stretchable Memristive Arrays for in-Memory Computing. Frontiers in Nanotechnology, 2022, 3, .	4.8	3
486	An Accurate, Error-Tolerant, and Energy-Efficient Neural Network Inference Engine Based on SONOS Analog Memory. IEEE Transactions on Circuits and Systems I: Regular Papers, 2022, 69, 1480-1493.	5.4	11
487	Transfer modeling of 1T1R crossbar arrays with line resistances based on matrix algebra method. Solid-State Electronics, 2022, 189, 108220.	1.4	0
488	Cycle-to-cycle Variation Enabled Energy Efficient Privacy Preserving Technology in ANN. , 2020, , .		3
489	Impact of Switching Variability of 65nm CMOS Integrated Hafnium Dioxide-based ReRAM Devices on Distinct Level Operations. , 2020, , .		9

#	Article	IF	CITATIONS
490	Defect-Resilient Memristor Crossbar of Hierarchical Temporal Memory (HTM) Spatial Pooling for Near-IoT-Sensor Cognitive Computing. , 2020, , .		1
491	Mathematical modeling of a self-learning neuromorphic network based on nanosized memristive elements with 1T1R crossbar architecture. Izvestiya Vysshikh Uchebnykh Zavedenii Materialy Elektronnoi Tekhniki = Materials of Electronics Engineering, 2020, 23, 186-195.	0.2	2
492	Self-Amplifying Current-Mode Multiplier Design using a Multi-Memristor Crossbar Cell Structure. , 2020, , .		1
493	Memristive devices and arrays for neuromorphic computing. , 2020, , .		0
494	Defect tolerant in-memory analog computing with CMOS-integrated nanoscale crossbars: Invited. , 2021, , .		0
495	Pulse coding off-chip learning algorithm for memristive artificial neural network. Chinese Physics B, 2022, 31, 078702.	1.4	1
496	Ultra-low-power switching circuits based on a binary pattern generator with spiking neurons. Scientific Reports, 2022, 12, 1150.	3.3	8
497	2022 roadmap on neuromorphic computing and engineering. Neuromorphic Computing and Engineering, 2022, 2, 022501.	5.9	217
498	Neuromorphic behaviors of N-type locally-active memristor. Wuli Xuebao/Acta Physica Sinica, 2022, 71, 050502.	0.5	3
499	lsing Machine Based on Electrically Coupled Spin Hall Nano-Oscillators. Physical Review Applied, 2022, 17, .	3.8	12
500	A novel design of high performance and robust ultra-low power SRAM cell based on memcapacitor. Nanotechnology, 2022, 33, 165202.	2.6	3
501	A New Memristive Neuron Map Model and Its Network's Dynamics under Electrochemical Coupling. Electronics (Switzerland), 2022, 11, 153.	3.1	30
502	Memristors based on strained multi-walled carbon nanotubes. Diamond and Related Materials, 2022, 123, 108858.	3.9	8
503	Obtaining Fuzzy Membership Function of Clusters With the Memristor Hardware Implementation and On-Chip Learning. IEEE Transactions on Emerging Topics in Computational Intelligence, 2022, 6, 1008-1025.	4.9	2
504	Synapse-Neuron-Aware Training Scheme of Defect-Tolerant Neural Networks with Defective Memristor Crossbars. Micromachines, 2022, 13, 273.	2.9	6
505	Volatile and Nonvolatile Memristive Devices for Neuromorphic Computing. Advanced Electronic Materials, 2022, 8, .	5.1	94
506	Research Progress on Memristor: From Synapses to Computing Systems. IEEE Transactions on Circuits and Systems I: Regular Papers, 2022, 69, 1845-1857.	5.4	44
507	A Nonvolatile Multilevel Data Storage Memory Based on Two-Dimensional Materials for Aerospace Applications. IEEE Transactions on Device and Materials Reliability, 2022, 22, 187-193.	2.0	3

#	Article	IF	CITATIONS
508	Nanostructured perovskites for nonvolatile memory devices. Chemical Society Reviews, 2022, 51, 3341-3379.	38.1	71
509	Technology and neuromorphic functionality of magnetron-sputtered memristive devices. , 2022, , 109-131.		0
510	XBarNet: Computationally Efficient Memristor Crossbar Model Using Convolutional Autoencoder. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2022, 41, 5489-5500.	2.7	1
511	A Survey on Machine Learning Accelerators and Evolutionary Hardware Platforms. IEEE Design and Test, 2022, 39, 91-116.	1.2	17
512	Experimentally-Validated Crossbar Model for Defect-Aware Training of Neural Networks. IEEE Transactions on Circuits and Systems II: Express Briefs, 2022, 69, 2468-2472.	3.0	2
513	Bioâ€Inspired 3D Artificial Neuromorphic Circuits. Advanced Functional Materials, 2022, 32, .	14.9	45
514	Operando observation of analog resistance change in a buried metal/oxide interface by a laser-excited photoemission electron microscope. Japanese Journal of Applied Physics, 2022, 61, SM1001.	1.5	3
515	Efficient Training of the Memristive Deep Belief Net Immune to Nonâ€Idealities of the Synaptic Devices. Advanced Intelligent Systems, 2022, 4, .	6.1	8
516	Low-Power Artificial Neural Network Perceptron Based on Monolayer MoS <sub>2</sub> . ACS Nano, 2022, 16, 3684-3694.	14.6	20
517	Differentiable Content Addressable Memory with Memristors. Advanced Electronic Materials, 2022, 8,	5.1	3
518	Lightweight memristive gated recurrent unit networks. , 2022, , .		0
519	HfZrOx-based capacitive synapses with highly linear and symmetric multilevel characteristics for neuromorphic computing. Applied Physics Letters, 2022, 120, .	3.3	11
520	Ion-Driven Electrochemical Random-Access Memory-Based Synaptic Devices for Neuromorphic Computing Systems: A Mini-Review. Micromachines, 2022, 13, 453.	2.9	7
521	Trends and challenges in the circuit and macro of RRAM-based computing-in-memory systems. , 2022, 1, 100004.		12
522	Reduced Stochastic Resistive Switching in Organicâ€Inorganic Hybrid Memristors by Vaporâ€Phase Infiltration. Advanced Electronic Materials, 2022, 8, .	5.1	5
523	Improved analog switching characteristics of Ta <sub>2</sub> O <sub>5</sub> -based memristor using indium tin oxide buffer layer for neuromorphic computing. Nanotechnology, 2022, 33, 245202.	2.6	8
524	In-Memory Computation Based Mapping of Keccak-f Hash Function. Frontiers in Nanotechnology, 2022, 4, .	4.8	0
525	Reconfigurable and Efficient Implementation of 16ÂBoolean Logics and Fullâ€Adder Functions with Memristor Crossbar for Beyond von Neumann Inâ€Memory Computing. Advanced Science, 2022, 9, e2200036.	11.2	13

#	Article	IF	CITATIONS
526	Dynamic-quenching of a single-photon avalanche photodetector using an adaptive resistive switch. Nature Communications, 2022, 13, 1517.	12.8	5
527	Exploiting Non-idealities of Resistive Switching Memories for Efficient Machine Learning. Frontiers in Electronics, 2022, 3, .	3.2	6
528	Demonstration of Neuromodulationâ€inspired Stashing System for Energyâ€efficient Learning of Spiking Neural Network using a Selfâ€Rectifying Memristor Array. Advanced Functional Materials, 2022, 32, .	14.9	12
529	A Functional Novel Logic for Max/Min Computing in One-Transistor-One-Resistor Devices With Resistive Random Access Memory (RRAM). IEEE Transactions on Electron Devices, 2022, 69, 1811-1815.	3.0	4
530	Inâ€Memory Computing using Memristor Arrays with Ultrathin 2D PdSeO <i><sub>x</sub></i> /PdSe <sub>2</sub> Heterostructure. Advanced Materials, 2022, 34, e2201488.	21.0	36
531	Analog Signal Processing in High Frequency Circuits Using Crossbar Configurations. , 2021, , .		0
532	Hybrid Analog-Digital In-Memory Computing. , 2021, , .		10
533	Mathematical Modeling of an Analogue Self-Learning Neural Network Based on Memristive Elements Taking into Account Stochastic Switching Dynamics. Nanobiotechnology Reports, 2021, 16, 767-776.	0.6	4
534	Comparative Analysis and Optimization of the SystemC-AMS Analog Simulation Efficiency of Resistive Crossbar Arrays. , 2021, , .		1
535	Parasitic-Aware Modelling for Neural Networks Implemented with Memristor Crossbar Array. , 2021, , .		3
536	Prospects for Analog Circuits in Deep Networks. , 2022, , 49-61.		1
537	Mathematical Modeling of a Self-Learning Neuromorphic Network Based on Nanosized Memristive Elements with a 1T1R-Crossbar-Architecture. Russian Microelectronics, 2021, 50, 628-637.	0.5	2
538	Memristive System Based Image Processing Technology: A Review and Perspective. Electronics (Switzerland), 2021, 10, 3176.	3.1	6
539	A four-megabit compute-in-memory macro with eight-bit precision based on CMOS and resistive random-access memory for AI edge devices. Nature Electronics, 2021, 4, 921-930.	26.0	36
540	Uncertainty Quantification Based on Multilevel Conductance and Stochasticity of Heater Size Dependent C-doped Ge <sub>2</sub> Sb <sub>2</sub> Te <sub>5</sub> PCM Chip. , 2021, , .		3
541	High Performance and Self-rectifying Hafnia-based Ferroelectric Tunnel Junction for Neuromorphic Computing and TCAM Applications. , 2021, , .		13
542	Application of neuromorphic resistive random access memory in image processing. Wuli Xuebao/Acta Physica Sinica, 2022, 71, 148504.	0.5	1
543	Memristor-based analogue computing for brain-inspired sound localization with in situ training. Nature Communications, 2022, 13, 2026.	12.8	42

#	Article	IF	Citations
544	Ta/HfO <sub>2</sub> memristors: from device physics to neural networks. Japanese Journal of Applied Physics, 0, , .	1.5	1
545	Interface state-dependent synaptic characteristics of Pt/CeO2/Pt memristors controlled by post-deposition annealing. Materials Science in Semiconductor Processing, 2022, 147, 106718.	4.0	6
549	CMOS-compatible compute-in-memory accelerators based on integrated ferroelectric synaptic arrays for convolution neural networks. Science Advances, 2022, 8, eabm8537.	10.3	30
550	Variability-Aware Memristive Crossbars—A Tutorial. IEEE Transactions on Circuits and Systems II: Express Briefs, 2022, 69, 2570-2574.	3.0	3
551	Machine Vision With InP Based Floating-Gate Photo-Field-Effective Transistors for Color-Mixed Image Recognition. IEEE Journal of Quantum Electronics, 2022, 58, 1-7.	1.9	3
552	Pulse Truncation Enabled High Performance and Low Energy Memristor-based Accelerator. , 2022, , .		1
553	Implementing in-situ self-organizing maps with memristor crossbar arrays for data mining and optimization. Nature Communications, 2022, 13, 2289.	12.8	25
554	Status and challenges of in-memory computing for neural accelerators. , 2022, , .		2
555	Neural Network Training With Asymmetric Crosspoint Elements. Frontiers in Artificial Intelligence, 2022, 5, .	3.4	9
556	A Fully Integrated Systemâ€onâ€Chip Design with Scalable Resistive Randomâ€Access Memory Tile Design for Analog inâ€Memory Computing. Advanced Intelligent Systems, 2022, 4, .	6.1	5
557	Toward memristive in-memory computing: principles and applications. Frontiers of Optoelectronics, 2022, 15, .	3.7	17
558	Hardwareâ€Mappable Cellular Neural Networks for Distributed Wavefront Detection in Nextâ€Generation Cardiac Implants. Advanced Intelligent Systems, 2022, 4, .	6.1	3
559	Nonidealityâ€Aware Training for Accurate and Robust Lowâ€Power Memristive Neural Networks. Advanced Science, 2022, 9, e2105784.	11.2	17
560	Analog-to-digital and self-rectifying resistive switching behavior based on flower-like δ-MnO2. Applied Surface Science, 2022, 595, 153560.	6.1	15
561	Highly Reliable Synaptic Cell Array Based on Organic–Inorganic Hybrid Bilayer Stack toward Precise Offline Learning. Advanced Intelligent Systems, 2022, 4, .	6.1	4
562	Formingâ€Free Resistive Switching Memory Crosspoint Arrays for Inâ€Memory Machine Learning. Advanced Intelligent Systems, 2022, 4, .	6.1	9
563	Analog–digital hybrid computing with SnS2 memtransistor for low-powered sensor fusion. Nature Communications, 2022, 13, 2804.	12.8	14
564	Analogue In-Memory Computing with Resistive Switching Memories. , 2022, , 61-86.		2

#	Article	IF	CITATIONS
565	Offline Training-Based Mitigation of IR Drop for ReRAM-Based Deep Neural Network Accelerators. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2023, 42, 521-532.	2.7	2
566	Optical and optoelectronic neuromorphic devices based on emerging memory technologies. Nanotechnology, 2022, 33, 372001.	2.6	5
567	Multimode Synaptic Operation of a HfAlO <i><sub>x</sub></i> Based Memristor as a Metaplastic Device for Neuromorphic Applications. ACS Applied Electronic Materials, 0, , .	4.3	3
568	Variance-aware weight quantization of multi-level resistive switching devices based on Pt/LaAlO3/SrTiO3 heterostructures. Scientific Reports, 2022, 12, .	3.3	6
569	A Learningâ€Rate Modulable and Reliable TiO <i><sub>x</sub></i> Memristor Array for Robust, Fast, and Accurate Neuromorphic Computing. Advanced Science, 2022, 9, .	11.2	22
570	Computationally efficient memristor model based on Hann window function. Microelectronics Journal, 2022, 125, 105476.	2.0	5
571	Seizure Detection and Prediction by Parallel Memristive Convolutional Neural Networks. IEEE Transactions on Biomedical Circuits and Systems, 2022, 16, 609-625.	4.0	10
572	Memristor-Based In-Memory Computing Architecture for Scientific Computing. , 2022, , 141-165.		1
573	A non-linear two-dimensional float gate transistor as a lateral inhibitory synapse for retinal early visual processing. Materials Horizons, 2022, 9, 2335-2344.	12.2	9
574	Ta/HfO2-based Memristor and Crossbar Arrays for In-Memory Computing. , 2022, , 167-188.		1
576	Optical Memristors: Review of Switching Mechanisms and New Computing Paradigms. , 2022, , 219-244.		3
577	Graph neural network based on RRAM array. , 2022, , .		1
578	A Metal Oxide Memristor-Based Oscillators and Filters. Proceedings of the Technical University of Sofia, 2022, 72, .	0.1	0
579	Dotâ€Product Operation in Crossbar Array Using a Selfâ€Rectifying Resistive Device. Advanced Materials Interfaces, 2022, 9, .	3.7	5
580	Quantization, training, parasitic resistance correction, and programming techniques of memristor-crossbar neural networks for edge intelligence. Neuromorphic Computing and Engineering, 2022, 2, 032001.	5.9	4
581	Antimonotonicity, Hysteresis and Coexisting Attractors in a Shinriki Circuit with a Physical Memristor as a Nonlinear Resistor. Electronics (Switzerland), 2022, 11, 1920.	3.1	6
582	Interval Model of a Memristor Crossbar Network. Physica Status Solidi (B): Basic Research, 2022, 259, .	1.5	4
583	Material design strategies for emulating neuromorphic functionalities with resistive switching memories. Japanese Journal of Applied Physics, 2022, 61, SM0806.	1.5	4

#	Article	IF	CITATIONS
584	A Digital–Analog Integrated Memristor Based on a ZnO NPs/CuO NWs Heterostructure for Neuromorphic Computing. ACS Applied Electronic Materials, 2022, 4, 3525-3534.	4.3	18
585	Toward Reflective Spiking Neural Networks Exploiting Memristive Devices. Frontiers in Computational Neuroscience, 0, 16, .	2.1	18
586	Reconfigurable heterogeneous integration using stackable chips with embedded artificial intelligence. Nature Electronics, 2022, 5, 386-393.	26.0	57
587	Synchronization of Traveling Waves in Memristively Coupled Ensembles of FitzHugh–Nagumo Neurons With Periodic Boundary Conditions. Frontiers in Physics, 0, 10, .	2.1	0
588	A biomimetic afferent nervous system based on the flexible artificial synapse. Nano Energy, 2022, 100, 107486.	16.0	17
589	A Novel Encrypted Computing-in-Memory (eCIM) by Implementing Random Telegraph Noise (RTN) as Keys Based on 55 nm NOR Flash Technology. IEEE Electron Device Letters, 2022, 43, 1455-1458.	3.9	2
590	Computing with nonvolatile memories for artificial intelligence. , 2022, , 305-334.		4
591	Impact of Switching Variability, Memory Window, and Temperature on Vector Matrix Operations Using 65nm CMOS Integrated Hafnium Dioxide-based ReRAM Devices. , 2022, , .		2
592	Novel <scp>Porphyrin ontaining</scp> Polymer Based Memristor for Synaptic Plasticity Simulation. Chinese Journal of Chemistry, 2022, 40, 2451-2456.	4.9	5
593	Tactile Near‧ensor Analogue Computing for Ultrafast Responsive Artificial Skin. Advanced Materials, 2022, 34, .	21.0	42
594	Associative memories using complex-valued Hopfield networks based on spin-torque oscillator arrays. Neuromorphic Computing and Engineering, 2022, 2, 034003.	5.9	5
595	Overview of Memristor-Based Neural Network Design and Applications. Frontiers in Physics, 0, 10, .	2.1	9
596	Inâ€ <b>S</b> ensor Computing: Materials, Devices, and Integration Technologies. Advanced Materials, 2023, 35, .	21.0	63
597	Twoâ€dimensional In <sub>2</sub> Se <sub>3</sub> : A rising advanced material for ferroelectric data storage. InformaÄnÃ-Materiály, 2022, 4, .	17.3	43
598	Memristive, Spintronic, and 2Dâ€Materialsâ€Based Devices to Improve and Complement Computing Hardware. Advanced Intelligent Systems, 2022, 4, .	6.1	13
599	Room-Temperature Fabricated Multilevel Nonvolatile Lead-Free Cesium Halide Memristors for Reconfigurable In-Memory Computing. ACS Nano, 2022, 16, 12979-12990.	14.6	16
600	Inâ€Memory Mathematical Operations with Spinâ€Orbit Torque Devices. Advanced Science, 2022, 9, .	11.2	4
601	Electrical bistability based on metal–organic frameworks. Chemical Communications, 2022, 58, 9971-9978.	4.1	6

#	Article	IF	CITATIONS
602	Optically modulated dualâ€mode memristor arrays based on coreâ€shell CsPbBr <sub>3</sub> @graphdiyne nanocrystals for fully memristive neuromorphic computing hardware. SmartMat, 2023, 4, .	10.7	16
603	Hexagonal boron nitride (h-BN) memristor arrays for analog-based machine learning hardware. Npj 2D Materials and Applications, 2022, 6, .	7.9	10
604	A photosensor employing data-driven binning for ultrafast image recognition. Scientific Reports, 2022, 12, .	3.3	6
605	An Adaptive Intelligent System Based on Energyâ€Efficient Synaptic Resistor Circuits with Fast Realâ€Time Learning. Advanced Intelligent Systems, 0, , 2200105.	6.1	2
606	Aqueous analog MAC machine. Advanced Materials, 0, , 2205096.	21.0	3
607	2D materials and van der Waals heterojunctions for neuromorphic computing. Neuromorphic Computing and Engineering, 2022, 2, 032004.	5.9	14
608	Quantization and sparsity-aware processing for energy-efficient NVM-based convolutional neural networks. Frontiers in Electronics, 0, 3, .	3.2	1
609	Ag/HfO <sub><i>x</i></sub> /Pt Unipolar Memristor for High-Efficiency Logic Operation. Journal of Physical Chemistry Letters, 2022, 13, 8019-8025.	4.6	6
610	In-sensor optoelectronic computing using electrostatically doped silicon. Nature Electronics, 2022, 5, 519-525.	26.0	43
611	Energy-efficient neural network design using memristive MAC unit. Frontiers in Electronics, 0, 3, .	3.2	0
612	Research progress of neuromorphic devices based on two-dimensional layered materials. Wuli Xuebao/Acta Physica Sinica, 2022, 71, 218504.	0.5	1
613	Energy Efficient Learning With Low Resolution Stochastic Domain Wall Synapse for Deep Neural Networks. IEEE Access, 2022, 10, 84946-84959.	4.2	9
614	8-b Precision 8-Mb ReRAM Compute-in-Memory Macro Using Direct-Current-Free Time-Domain Readout Scheme for Al Edge Devices. IEEE Journal of Solid-State Circuits, 2023, 58, 303-315.	5.4	15
615	Fast Algorithms for Exact IR Drop De-Embedding in Analog Multiply–Accumulate Computing. IEEE Transactions on Electron Devices, 2022, 69, 6376-6383.	3.0	0
616	Memristive Fast-Canny Operation for Edge Detection. IEEE Transactions on Electron Devices, 2022, 69, 6043-6048.	3.0	2
617	RM-NTT: An RRAM-Based Compute-in-Memory Number Theoretic Transform Accelerator. IEEE Journal on Exploratory Solid-State Computational Devices and Circuits, 2022, 8, 93-101.	1.5	5
618	Compute-in-Memory Technologies and Architectures for Deep Learning Workloads. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2022, 30, 1615-1630.	3.1	3
619	Modeling and Mitigating the Interconnect Resistance Issue in Analog RRAM Matrix Computing Circuits. IEEE Transactions on Circuits and Systems I: Regular Papers, 2022, 69, 4367-4380.	5.4	6

	CITATION	Report	
# 620	ARTICLE Multiferroic antiferromagnetic artificial synapse. Journal of Applied Physics, 2022, 132, 084102.	IF 2.5	Citations
621	Unraveling the Atomic Redox Process in Quantum Conductance and Synaptic Events for Neuromorphic Computing. Advanced Electronic Materials, 2022, 8, .	5.1	1
622	Stacked Oneâ€5electorâ€Oneâ€Resistive Memory Crossbar Array With High Nonlinearity and On urrent Density for the Neuromorphic Applications. Advanced Electronic Materials, 2022, 8, .	5.1	7
623	A novel hyperchaotic map with sine chaotification and discrete memristor. Chinese Physics B, 2022, 31, 120501.	1.4	6
624	Multiscale Modeling of Ion Dynamics in Memristive Elements. Physica Status Solidi (B): Basic Research, 0, , 2200151.	1.5	1
625	A memristor-based analogue reservoir computing system for real-time and power-efficient signal processing. Nature Electronics, 2022, 5, 672-681.	26.0	75
626	Flexible Active Crossbar Arrays Using Amorphous Oxide Semiconductor Technology toward Artificial Neural Networks Hardware. Advanced Electronic Materials, 2022, 8, .	5.1	9
627	Digital Keying Enabled by Reconfigurable 2D Modulators. Advanced Materials, 2022, 34, .	21.0	2
628	Acoustic scene analysis using analog spiking neural network. Neuromorphic Computing and Engineering, 0, , .	5.9	0
629	In-sensor image memorization and encoding via optical neurons for bio-stimulus domain reduction toward visual cognitive processing. Nature Communications, 2022, 13, .	12.8	25
630	An efficient deep neural network accelerator using controlled ferroelectric domain dynamics. Neuromorphic Computing and Engineering, 2022, 2, 041001.	5.9	4
631	Pinning synchronization of stochastic neutral memristive neural networks with reaction–diffusion terms. Neural Networks, 2023, 157, 1-10.	5.9	4
632	Study on sneak path effect in self-rectifying crossbar arrays based on emerging memristive devices. Frontiers in Electronic Materials, 0, 2, .	3.1	1
633	Efficient Spectral Graph Convolutional Network Deployment on Memristive Crossbars. IEEE Transactions on Emerging Topics in Computational Intelligence, 2023, 7, 415-425.	4.9	10
634	The gate injection-based field-effect synapse transistor with linear conductance update for online training. Nature Communications, 2022, 13, .	12.8	21
635	Memristorâ€Based Intelligent Humanâ€Like Neural Computing. Advanced Electronic Materials, 2023, 9, .	5.1	16
636	Analog Tunnel Memory Based on Programmable Metallization for Passive Neuromorphic Circuits. ACS Applied Materials & amp; Interfaces, 2022, 14, 47941-47951.	8.0	4
637	An Effective Sneakâ€Path Solution Based on a Transientâ€Relaxation Device. Advanced Materials, 2023, 35, .	21.0	6

#	Article	IF	CITATIONS
638	An optoelectronic synapse based on α-In2Se3 with controllable temporal dynamics for multimode and multiscale reservoir computing. Nature Electronics, 2022, 5, 761-773.	26.0	127
639	Bayesian neural networks using magnetic tunnel junction-based probabilistic in-memory computing. Frontiers in Nanotechnology, 0, 4, .	4.8	6
640	Experimentally validated memristive memory augmented neural network with efficient hashing and similarity search. Nature Communications, 2022, 13, .	12.8	16
641	Si-based self-programming neuromorphic integrated circuits for intelligent morphing wings. Journal of Composite Materials, 2022, 56, 4561-4575.	2.4	4
642	Recent Advances in Synaptic Nonvolatile Memory Devices and Compensating Architectural and Algorithmic Methods Toward Fully Integrated Neuromorphic Chips. Advanced Materials Technologies, 2023, 8, .	5.8	15
643	An Analogue In-Memory Ridge Regression Circuit With Application to Massive MIMO Acceleration. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2022, 12, 952-962.	3.6	5
644	A Wide Dynamic Range Read-out System For Resistive Switching Technology. , 2022, , .		2
645	An End-to-end Computer Vision System Architecture. , 2022, , .		2
646	A general tree-based machine learning accelerator with memristive analog CAM. , 2022, , .		0
647	Analog Acceleration of the Power Method using Memristor Crossbars. , 2022, , .		2
648	SDEX: Monte Carlo Simulation of Stochastic Differential Equations on Memristor Crossbars. , 2022, , .		2
649	Beneficial Role of Noise in Hf-based Memristors. , 2022, , .		1
650	A Mathematical Formulation of the Wire Resistance Problem in Memristor Crossbars. , 2022, , .		1
651	Unconventional Logic on Unipolar CBRAM Based Oscillators. , 2022, , .		0
652	An All-in-One Bioinspired Neural Network. ACS Nano, 2022, 16, 20100-20115.	14.6	9
653	Bioderived materials for stimuli-responsive, adaptive, and neuromorphic systems: A perspective. Journal of Composite Materials, 2023, 57, 659-678.	2.4	1
654	Floating Gate Transistorâ€Based Accurate Digital Inâ€Memory Computing for Deep Neural Networks. Advanced Intelligent Systems, 0, , 2200127.	6.1	1
655	Resistive-Switching Memories. Springer Handbooks, 2023, , 1043-1092.	0.6	0

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CI	TAT	ION	1 K F	'PO	RT

#	Article	IF	CITATIONS
656	Redox memristors with volatile threshold switching behavior for neuromorphic computing. Journal of Electronic Science and Technology, 2022, 20, 100177.	3.6	4
657	Ultrathin HfO <sub>2</sub> /Al <sub>2</sub> O <sub>3</sub> bilayer based reliable 1T1R RRAM electronic synapses with low power consumption for neuromorphic computing. Neuromorphic Computing and Engineering, 2022, 2, 044012.	5.9	8
658	Perspective on oxide-based three-terminal artificial synapses in physical neural networks. Applied Physics Letters, 2022, 121, .	3.3	4
659	Memristive Fieldâ€Programmable Analog Arrays for Analog Computing. Advanced Materials, 2023, 35, .	21.0	7
660	Emulating Epileptic Seizures on Coupled Chua's Circuit Networks. Symmetry, 2022, 14, 2325.	2.2	3
661	Memristive/CMOS Devices for Neuromorphic Applications. Springer Handbooks, 2023, , 1167-1199.	0.6	0
662	Xbar-Partitioning: A Practical Way for Parasitics and Noise Tolerance in Analog IMC Circuits. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2022, 12, 867-877.	3.6	3
663	Exploring Neuromorphic Computing Based on Spiking Neural Networks: Algorithms to Hardware. ACM Computing Surveys, 2023, 55, 1-49.	23.0	19
664	Memristive Circuit Design of Quantized Convolutional Auto-Encoder. IEEE Transactions on Emerging Topics in Computational Intelligence, 2023, 7, 1301-1313.	4.9	1
665	Gas-phase synthesis of nanoparticles: current application challenges and instrumentation development responses. Physical Chemistry Chemical Physics, 2023, 25, 897-912.	2.8	2
666	Delay-dependent and order-dependent conditions for stability and stabilization of fractional-order memristive neural networks with time-varying delays. Neurocomputing, 2023, 522, 53-63.	5.9	7
667	A Novel In-Sensor Computing Architecture Based onÂSingle Photon Avalanche Diode andÂDynamic Memristor. Lecture Notes in Computer Science, 2022, , 489-500.	1.3	0
668	A Novel Array Programming Scheme for Large Matrix Processing in Flash-Based Computing-in-Memory (CIM) With Ultrahigh Bit Density. IEEE Transactions on Electron Devices, 2023, 70, 461-467.	3.0	4
669	Reliable Computing of ReRAM Based Compute-in-Memory Circuits for AI Edge Devices. , 2022, , .		1
670	SACA: System-level Analog CIM Accelerators Simulation Framework: Accurate Simulation of Non-Ideal Components. , 2022, , .		1
671	A Compact Butterfly-Style Silicon Photonic–Electronic Neural Chip for Hardware-Efficient Deep Learning. ACS Photonics, 2022, 9, 3906-3916.	6.6	15
672	A Spintronic 2M/7T Computation-in-Memory Cell. Journal of Low Power Electronics and Applications, 2022, 12, 63.	2.0	0
673	Inâ€Sensor Reservoir Computing Based on Optoelectronic Synapse. Advanced Intelligent Systems, 2023, 5,	6.1	15

#	Article	IF	CITATIONS
674	Broadband Visual Adaption and Image Recognition in a Monolithic Neuromorphic Machine Vision System. Advanced Functional Materials, 2023, 33, .	14.9	19
675	Memristive Synapse Based on Singleâ€Crystalline LiNbO <sub>3</sub> Thin Film with Bioinspired Microstructure for Experienceâ€Based Dynamic Image Mask Generation. Advanced Electronic Materials, 2023, 9, .	5.1	3
676	Understanding effect of distortions and vacancies in wurtzite AlScN ferroelectric memory materials: Vacancy-induced multiple defect state types and relaxation dependence in transition energy levels. AIP Advances, 2022, 12, .	1.3	2
677	Chemically-inspired Memristor-based Neuron-like Oscillating Circuit. , 2022, , .		0
678	Graph Analysis with Multifunctional Selfâ€Rectifying Memristive Crossbar Array. Advanced Materials, 2023, 35, .	21.0	6
679	Spiking Neuron Implementation Using a Novel Floating Memcapacitor Emulator. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2022, 32, .	1.7	1
680	Electroencephalogram signal analysis with 1T1R arrays toward high-efficiency brain computer interface. AIP Advances, 2022, 12, .	1.3	1
681	Flexible Memristor Constructed by 2D Cadmium Phosphorus Trichalcogenide for Artificial Synapse and Logic Operation. Advanced Functional Materials, 2023, 33, .	14.9	16
682	On the Accuracy of Analog Neural Network Inference Accelerators. IEEE Circuits and Systems Magazine, 2022, 22, 26-48.	2.3	8
683	ReRAM-Based Neuromorphic Computing. , 2023, , 43-65.		1
684	Freely switching between ferroelectric and resistive switching in Hf0.5Zr0.5O2 films and its application on high accuracy on-chip deep neural networks. Science China Information Sciences, 2023, 66, .	4.3	2
685	CMOS-compatible self-aligned 3D memristive elements for reservoir computing systems. Applied Physics Letters, 2023, 122, .	3.3	7
686	PAWN: Programmed Analog Weights for Non-Linearity Optimization in Memristor-Based Neuromorphic Computing System. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2023, 13, 436-444.	3.6	1
687	Ultralow-Power Implementation of Neural Networks Using Inverter-Based Memristive Crossbars. , 2023, , 327-385.		0
688	Fault Modeling and Testing of Memristor-Based Spiking Neural Networks. , 2022, , .		3
689	Discrete Hilbert Transform via Memristor Crossbars for Compact Biosignal Processing. , 2022, , .		0
691	Spectral Ranking in Complex Networks Using Memristor Crossbars. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2023, 13, 357-370.	3.6	1
692	1/ <i>f</i> Noise in Synaptic Ferroelectric Tunnel Junction: Impact on Convolutional Neural Network. Advanced Intelligent Systems, 2023, 5, .	6.1	8

#	Article	IF	CITATIONS
693	In-Memory Computing Circuit Implementation of Complex-Valued Hopfield Neural Network for Efficient Portrait Restoration. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2023, 42, 3338-3351.	2.7	0
695	Discovering the in-Memory Kernels of 3D Dot-Product Engines. , 2023, , .		0
696	RVComp., 2023,,.		2
697	A Mathematical Analysis of Wire Resistance Problem in Memristor Crossbars. , 2022, , .		0
698	Simulation of memristive crossbar arrays for seizure detection and prediction using parallel Convolutional Neural Networks. Software Impacts, 2023, 15, 100473.	1.4	1
699	Energy-efficient and reconfigurable complementary filter based on analog–digital hybrid computing with SnS2 memtransistor. Nano Energy, 2023, 109, 108333.	16.0	0
700	A Memristive Cell with Long Retention Time in 65 nm CMOS Technology. Advanced Electronic Materials, 0, , .	5.1	0
701	Active Traffic Signal Decisions Using Vectorâ€Matrix Multiplication. Advanced Intelligent Systems, 2023, 5, .	6.1	0
702	Artificial HfO2/TiOx Synapses with Controllable Memory Window and High Uniformity for Brain-Inspired Computing. Nanomaterials, 2023, 13, 605.	4.1	2
703	Introductory Chapter: An Overview to the Internet of Things. , 0, , .		2
704	Circuit Design and Application of Discrete Cosine Transform Based on Memristor. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2023, 13, 502-513.	3.6	4
705	Synaptic Resistor Circuits Based on Al Oxide and Ti Silicide for Concurrent Learning and Signal Processing in Artificial Intelligence Systems. Advanced Materials, 0, , 2210484.	21.0	4
706	In-memory computing with emerging memory devices: Status and outlook. , 2023, 1, .		14
707	Organic Memristor with Synaptic Plasticity for Neuromorphic Computing Applications. Nanomaterials, 2023, 13, 803.	4.1	5
708	Amyloid–Gold Nanoparticle Hybrids for Biocompatible Memristive Devices. Materials, 2023, 16, 1884.	2.9	0
709	Environmentally Stable and Reconfigurable Ultralow-Power Two-Dimensional Tellurene Synaptic Transistor for Neuromorphic Edge Computing. ACS Applied Materials & Interfaces, 2023, 15, 18463-18472.	8.0	6
710	Memristor-based neural networks: a bridge from device to artificial intelligence. Nanoscale Horizons, 2023, 8, 716-745.	8.0	25
711	Technology Roadmap for Flexible Sensors. ACS Nano, 2023, 17, 5211-5295.	14.6	238

		CITATION REPORT		
#	Article		IF	CITATIONS
712	From memristive devices to neuromorphic systems. Applied Physics Letters, 2023, 122, 110501.		3.3	4
713	Synapse-Mimetic Hardware-Implemented Resistive Random-Access Memory for Artificial Neural Network. Sensors, 2023, 23, 3118.		3.8	4
714	Geometric deep optical sensing. Science, 2023, 379, .		12.6	22
715	<scp>Selfâ€selective</scp> memristorâ€enabled i <scp>nâ€memory</scp> search for highly efficie mining. InformaÄnÃ-Materiály, 2023, 5, .	nt data	17.3	4
716	An ultrafast bipolar flash memory for self-activated in-memory computing. Nature Nanotechnology 2023, 18, 486-492.	,	31.5	21
717	An in-memory computing architecture based on a duplex two-dimensional material structure for in situ machine learning. Nature Nanotechnology, 2023, 18, 493-500.		31.5	28
718	Research Process of Carbon Dots in Memristors. Advanced Electronic Materials, 2023, 9, .		5.1	6
719	Thousands of conductance levels in memristors integrated on CMOS. Nature, 2023, 615, 823-829		27.8	66
720	Accelerating Adversarial Attack using Process-in-Memory Architecture. , 2022, , .			0
721	Efficient Signed Arithmetic Multiplication on Memristor-Based Crossbar. IEEE Access, 2023, 11, 33964-33978.		4.2	2
722	STREAM: Toward READ-Based In-Memory Computing for Streaming-Based Processing for Data-Inte Applications. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 202 3854-3867.	nsive 23, 42,	2.7	2
723	Enhancing memristor fundamentals through instrumental characterization and understanding reliability issues. Materials Advances, 2023, 4, 1850-1875.		5.4	3
724	A Laborer's Mask-Wearing Behavior Detection Approach in the Manufacturing Field. Processes 1086.	, 2023, 11,	2.8	0
725	A Generalized Block-Matrix Circuit for Closed-Loop Analog In-Memory Computing. IEEE Journal on Exploratory Solid-State Computational Devices and Circuits, 2023, 9, 47-55.		1.5	0
726	Imidazole-based artificial synapses for neuromorphic computing: a cluster-type conductive filamen <i>via</i> controllable nanocluster nucleation. Materials Horizons, 2023, 10, 2035-2046.	t	12.2	3
727	Parallel synaptic design of ferroelectric tunnel junctions for neuromorphic computing. Neuromorphic Computing and Engineering, 2023, 3, 024001.		5.9	2
728	Memristor-Based Signal Processing for Compressed Sensing. Nanomaterials, 2023, 13, 1354.		4.1	3
729	In-Memory Computing for Machine Learning and Deep Learning. IEEE Journal of the Electron Device Society, 2023, 11, 587-601.	2S	2.1	2

#	Article	IF	CITATIONS
730	Picosecond Timeâ€Scale Resistive Switching Monitored in Realâ€Time. Advanced Electronic Materials, 2023, 9, .	5.1	6
731	Integrated Memristor Network for Physiological Signal Processing. Advanced Electronic Materials, 2023, 9, .	5.1	6
732	Memcapacitive to Memristive Transition in Al/Y\$_{ext{2}}\$O\$_{ext{3}}\$/GZO Crossbar Array. IEEE Transactions on Electron Devices, 2023, , 1-6.	3.0	0
733	The bottom of the memory hierarchy: Semiconductor and DNA data storage. MRS Bulletin, 2023, 48, 547-559.	3.5	1
734	Simulation modeling of an analog impulse neural network based on a memristor crossbar using parallel computing technologies. Izvestiya Vysshikh Uchebnykh Zavedenii Materialy Elektronnoi Tekhniki = Materials of Electronics Engineering, 2023, 25, 288-297.	0.2	0
735	In-memory photonic dot-product engine with electrically programmable weight banks. Nature Communications, 2023, 14, .	12.8	27
736	Accelerate and actualize: Can 2D materials bridge the gap between neuromorphic hardware and the human brain?. Matter, 2023, 6, 1348-1365.	10.0	2
737	Near-infrared optoelectronic synapses based on a Te/ $\hat{i}$ ±-In2Se3 heterojunction for neuromorphic computing. Science China Information Sciences, 2023, 66, .	4.3	1
738	Compute-in-Memory Architecture. , 2023, , 1-40.		0
739	EEG Signal Classification using Memristor-based Reservoir Computing System. , 2023, , .		0
740	Investigating Series and Parallel Oxide Memtransistors for Tunable Weight Update Properties. ACS Applied Electronic Materials, 2023, 5, 3232-3240.	4.3	3
741	Rucklidge-based memristive chaotic system: Dynamic analysis and image encryption. Chinese Physics B, 2023, 32, 100503.	1.4	1
742	Approximate digital-in analog-out multiplier with asymmetric nonvolatility and low energy consumption. The Integration VLSI Journal, 2023, , .	2.1	0
743	Reconfigurable Neuromorphic Computing: Materials, Devices, and Integration. Advanced Materials, 2023, 35, .	21.0	5
744	Sparse matrix multiplication in a record-low power self-rectifying memristor array for scientific computing. Science Advances, 2023, 9, .	10.3	9
745	Selectively Nitrogen Doped ALD-IGZO TFTs with Extremely High Mobility and Reliability. ACS Applied Materials & amp; Interfaces, 2023, 15, 31652-31663.	8.0	4
746	Recent Advances and Future Prospects for Memristive Materials, Devices, and Systems. ACS Nano, 2023, 17, 11994-12039.	14.6	34
747	Nanograin network memory with reconfigurable percolation paths for synaptic interactions. Light: Science and Applications, 2023, 12, .	16.6	0

#	Article	IF	CITATIONS
748	Hybrid Tuning of Subâ€Filaments to Improve Analog Switching Performance in Memristive Devices. Advanced Materials Technologies, 0, , .	5.8	0
749	Volatile threshold switching memristor: An emerging enabler in the AloT era. Journal of Semiconductors, 2023, 44, 053102.	3.7	6
750	Reconfigurable Low-Power TiO <sub>2</sub> Memristor for Integration of Artificial Synapse and Nociceptor. ACS Applied Materials & Interfaces, 2023, 15, 25713-25725.	8.0	8
751	Electrochemicalâ€Memristorâ€Based Artificial Neurons and Synapses—Fundamentals, Applications, and Challenges. Advanced Materials, 2023, 35, .	21.0	11
752	Real-time study of imaging electron current density on metal filament evolution in SiO2 during <i>in situ</i> TEM. Applied Physics Letters, 2023, 122, .	3.3	2
753	Memristive circuit design of mood-dependent memory with learning curve. AEU - International Journal of Electronics and Communications, 2023, 170, 154801.	2.9	0
754	Bi <sub>2</sub> Se <sub>3</sub> -Based Memristive Devices for Neuromorphic Processing of Analogue Video Signals. ACS Applied Electronic Materials, 2023, 5, 3830-3842.	4.3	0
755	Memristor Crossbar Circuits Implementing Equilibrium Propagation for On-Device Learning. Micromachines, 2023, 14, 1367.	2.9	1
756	Enhanced regularization for on-chip training using analog and temporary memory weights. Neural Networks, 2023, 165, 1050-1057.	5.9	0
757	Tunable voltage polarity-dependent resistive switching characteristics by interface energy barrier modulation in ceria-based bilayer memristors for neuromorphic computing. Journal of Alloys and Compounds, 2023, 963, 171211.	5.5	5
758	A CMOS-integrated spintronic compute-in-memory macro for secure Al edge devices. Nature Electronics, 2023, 6, 534-543.	26.0	4
759	Electronically Controllable Fully Floating Memcapacitor Circuit. Circuits, Systems, and Signal Processing, 0, , .	2.0	0
760	Carbon nanotube field effect transistors: an overview of device structure, modeling, fabrication and applications. Physica Scripta, 2023, 98, 082003.	2.5	4
761	Memristor-based Offset Cancellation Technique in Analog Crossbars. , 2023, , .		0
762	A Survey of Ensemble Methods for Mitigating Memristive Neural Network Non-idealities. , 2023, , .		0
763	Gaussian Process for Nonlinear Regression via Memristive Crossbars. , 2023, , .		0
764	A Survey of Memory-Centric Energy Efficient Computer Architecture. IEEE Transactions on Parallel and Distributed Systems, 2023, 34, 2657-2670.	5.6	1
765	Stepped Identical Reset-Pulse and Lookup Table Programming of Multilevel Conductance in HfO <sub> <i>x</i> </sub> /AlO <sub> <i>y</i> </sub> Superlattice-Like Memristors. IEEE Transactions on Electron Devices, 2023, 70, 4628-4634.	3.0	1

#	Apticie	IE	CITATIONS
#	A self-tuning PID controller based on analog–digital hybrid computing with a double-gate	IF	CHATIONS
766	SnS <sub>2</sub> memtransistor. Nanoscale, 2023, 15, 13675-13684.	5.6	1
767	Investigating synchronization phenomena in chaotic ring oscillators coupled through memristive devices. , 2023, , .		0
768	Exploring Multifunctionality in MgOâ€Based Magnetic Tunnel Junctions with Coexisting Magnetoresistance and Memristive Properties. Advanced Functional Materials, 2023, 33, .	14.9	2
769	Voltage Controlled Nanoscale Magnetic Devices for Non-Volatile Memory and Scalable Quantum Computing. , 2023, , .		0
770	Emerging memristive artificial neuron and synapse devices for the neuromorphic electronics era. Nanoscale Horizons, 2023, 8, 1456-1484.	8.0	4
771	Diverse long-term potentiation and depression based on multilevel LiSiOx memristor for neuromorphic computing. Nanotechnology, 0, , .	2.6	0
772	A wavelength-multiplexed photonic tensor processor based on Mach-Zehnder modulator. , 2023, , .		0
773	State-Space Modeling and Tuning of Memristors for Neuromorphic Computing Applications. , 2023, , .		0
774	Monolithic 3D Integration of Analog RRAMâ€based Computingâ€inâ€Memory and Sensor for Energyâ€Efficient Nearâ€Sensor Computing. Advanced Materials, 0, , .	21.0	0
775	Realizing avalanche criticality in neuromorphic networks on a 2D hBN platform. Materials Horizons, 0, , .	12.2	0
776	Memristors in Cellular-Automata-Based Computing:A Review. Electronics (Switzerland), 2023, 12, 3523.	3.1	0
777	Multi-level resistive switching in hafnium-oxide-based devices for neuromorphic computing. Nano Convergence, 2023, 10, .	12.1	3
778	Double-Forming Mechanism of TaOx-Based Resistive Memory Device and Its Synaptic Applications. Materials, 2023, 16, 6184.	2.9	0
779	Memory, Memristive, and Neuromorphic Devices Based on Two-dimensional Transition Metal Dichalcogenides. , 2023, , 307-338.		0
780	Digital image processing realized by memristor-based technologies. , 2023, 18, .		0
781	Fixed/predefined-time synchronization of memristive neural networks based on state variable index coefficient. Neurocomputing, 2023, 560, 126849.	5.9	2
782	Emerging Memory-Based Chip Development for Neuromorphic Computing: Status, Challenges, and Perspectives. , 2023, 1, 33-49.		2
783	Tuning Electrochemical Stability of 5,10-Ditolylphenazine-Based Antiaromatic Materials for Unipolar Memristor toward Artificial Synapses Application. ACS Applied Materials & Interfaces, 2023, 15, 44033-44042.	8.0	0

#	Article	IF	CITATIONS
784	Open-loop analog programmable electrochemical memory array. Nature Communications, 2023, 14, .	12.8	4
785	Neural image caption generator based on crossbar array design of memristor module. Neurocomputing, 2023, 560, 126766.	5.9	0
786	Accelerating massive MIMO in 6G communications by analog in-memory computing circuits. , 2023, , .		0
787	Quantized Neural Network via Synaptic Segregation Based on Ternary Chargeâ€Trap Transistors. Advanced Electronic Materials, 2023, 9, .	5.1	0
788	A Review on Role of Image Processing Techniques to Enhancing Security of IoT Applications. IEEE Access, 2023, 11, 101924-101948.	4.2	0
789	CorrectNet+: Dealing with HW Non-Idealities in In-Memory-Computing Platforms by Error Suppression and Compensation. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2023, , 1-1.	2.7	0
790	Engineering Atomicâ€Scale Patterning and Resistive Switching in 2D Crystals and Application in Image Processing. Advanced Materials, 2023, 35, .	21.0	1
791	ReRAM-based graph attention network with node-centric edge searching and hamming similarity. , 2023, , .		0
792	Wetâ€Etchingâ€Boosted Charge Storage in 1D Nitrideâ€Based Systems for Imitating Biological Synaptic Behaviors. Advanced Functional Materials, 2023, 33, .	14.9	0
793	UpTime: Towards Flow-based In-Memory Computing with High Fault-Tolerance. , 2023, , .		0
794	Broadband sensory networks with locally stored responsivities for neuromorphic machine vision. Science Advances, 2023, 9, .	10.3	2
795	Neuromorphic Circuits with Redox-Based Memristive Devices. Springer Series on Bio- and Neurosystems, 2024, , 43-85.	0.2	0
796	Redox-Based Bi-Layer Metal Oxide Memristive Devices. Springer Series on Bio- and Neurosystems, 2024, , 87-114.	0.2	0
797	Triboiontronics for efficient energy and information flow. Matter, 2023, 6, 3912-3926.	10.0	3
798	Technology and Integration Roadmap for Optoelectronic Memristor. Advanced Materials, 2024, 36, .	21.0	2
799	Memristor-Based In-Memory Computing. , 2024, , 97-121.		0
800	An FPGA-Based Training System for a 1T1R Memristor Array With 500 nS Conductance Resolution Limit. IEEE Access, 2023, 11, 110750-110761.	4.2	0
802	Spin device-based image edge detection architecture for neuromorphic computing. Nanotechnology, 0,	2.6	0

#	Article	IF	CITATIONS
803	Silicon Oxide-based CBRAM Memory and Neuromorphic Properties. , 2023, , 515-529.		0
804	In-sensor Computing Based on Two-terminal Optoelectronic Memristors. , 2023, , 339-372.		0
805	Algorithmic Optimisation for Memristive Deep Learning Accelerators. , 2023, , 656-679.		0
806	Adaptive biogeography based optimizer evolution depth convolutional neural network for image classification. , 2023, , .		0
807	Bring memristive in-memory computing into general-purpose machine learning: A perspective. , 2023, 1, .		0
808	Flexible multilevel nonvolatile biocompatible memristor with high durability. Journal of Nanobiotechnology, 2023, 21, .	9.1	1
809	Analog programming of CMOS-compatible Al2O3/TiO2â^'x memristor at 4.2 K after metal-insulator transition suppression by cryogenic reforming. Applied Physics Letters, 2023, 123, .	3.3	0
810	Forward stagewise regression with multilevel memristor for sparse coding. Journal of Semiconductors, 2023, 44, 104101.	3.7	0
811	Highly Reconfigurable Logicâ€Inâ€Memory Operations in Tunable Gaussian Transistors for Multifunctional Image Processing. Advanced Functional Materials, 0, , .	14.9	0
812	Approaching the Zeroâ€Power Operating Limit in a Selfâ€Coordinated Organic Protonic Synapse. Advanced Science, 2023, 10, .	11.2	2
813	An 8b-Precision 8-Mb STT-MRAM Near-Memory-Compute Macro Using Weight-Feature and Input-Sparsity Aware Schemes for Energy-Efficient Edge AI Devices. IEEE Journal of Solid-State Circuits, 2023, , 1-12.	5.4	0
814	Near-threshold-voltage operation in flash-based high-precision computing-in-memory to implement Poisson image editing. Science China Information Sciences, 2023, 66, .	4.3	0
815	Spinel ferrites for resistive random access memory applications. Emergent Materials, 2024, 7, 103-131.	5.7	0
816	A full spectrum of computing-in-memory technologies. Nature Electronics, 2023, 6, 823-835.	26.0	3
817	A large-scale integrated vector–matrix multiplication processor based on monolayer molybdenum disulfide memories. Nature Electronics, 0, , .	26.0	1
818	Widefield Diamond Quantum Sensing with Neuromorphic Vision Sensors. Advanced Science, 2024, 11, .	11.2	0
819	Selfâ€Rectifying Memristors for Threeâ€DimensionalÂInâ€Memory Computing. Advanced Materials, 2024, 36, .	21.0	1
820	Artificial sensory system based on memristive devices. Exploration, 2024, 4, .	11.0	0

#	Article	IF	CITATIONS
821	Memristor based electronic devices towards biomedical applications. Journal of Materials Chemistry C, 0, , .	5.5	0
822	Quantum Transport Properties of Nanosized Ta <sub>2</sub> O <sub>5</sub> Resistive Switches: Variable Transmission Atomic Synapses for Neuromorphic Electronics. ACS Applied Nano Materials, 2023, 6, 21340-21349.	5.0	0
823	Silicon–van der Waals heterointegration for CMOS-compatible logic-in-memory design. Science Advances, 2023, 9, .	10.3	0
824	Novel crossbar array of silicon nitride resistive memories on SOI enables memristor rationed logic. Solid-State Electronics, 2024, 211, 108819.	1.4	0
825	An in-sensor humidity computing system for contactless human–computer interaction. Materials Horizons, 2024, 11, 939-948.	12.2	0
826	Automated Synthesis for In-Memory Computing. , 2023, , .		0
827	Towards Energy-Efficient Spiking Neural Networks: A Robust Hybrid CMOS-Memristive Accelerator. ACM Journal on Emerging Technologies in Computing Systems, 2024, 20, 1-20.	2.3	0
828	Ultralow Energy Consumption Angstrom-Fluidic Memristor. Nano Letters, 0, , .	9.1	1
829	HfO <sub>2</sub> -Based Memristors for Gamma-Ray Detection: An Experimental and Computational Investigation. IEEE Sensors Journal, 2023, , 1-1.	4.7	0
830	Fabrication and integration of photonic devices for phase-change memory and neuromorphic computing. International Journal of Extreme Manufacturing, 0, , .	12.7	0
831	Neuromorphic Analog Machine Vision Enabled by Nanoelectronic Memristive Devices. Applied Sciences (Switzerland), 2023, 13, 13309.	2.5	0
832	Domain Wall-Magnetic Tunnel Junction Analog Content Addressable Memory Using Current and Projected Data. IEEE Nanotechnology Magazine, 2023, , 1-9.	2.0	0
833	Highly flexible and robust HfOx-based memristor for wearable in-memory computing. Applied Physics Letters, 2023, 123, .	3.3	0
834	HARDSEA: Hybrid Analog-ReRAM Clustering and Digital-SRAM In-Memory Computing Accelerator for Dynamic Sparse Self-Attention in Transformer. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2024, 32, 269-282.	3.1	0
835	Design and Implementation of Image Recognition System Based on AI Intelligent Video Technology. , 2023, , .		0
836	Memristor-Based Artificial Chips. ACS Nano, 2024, 18, 14-27.	14.6	1
837	Brain organoid reservoir computing for artificial intelligence. Nature Electronics, 2023, 6, 1032-1039.	26.0	12
838	Path-Based Processing using In-Memory Systolic Arrays for Accelerating Data-Intensive Applications. , 2023, , .		0

#	Article	IF	CITATIONS
839	Memristorâ€Based Neuromorphic Chips. Advanced Materials, 2024, 36, .	21.0	2
840	Purely self-rectifying memristor-based passive crossbar array for artificial neural network accelerators. Nature Communications, 2024, 15, .	12.8	0
841	Implementation of Convolutional Neural Networks in Memristor Crossbar Arrays with Binary Activation and Weight Quantization. ACS Applied Materials & Interfaces, 2024, 16, 1054-1065.	8.0	1
842	Nonvolatile Memristive Materials and Physical Modeling for Inâ€Memory and Inâ€Sensor Computing. Small Science, 2024, 4, .	9.9	0
843	Integrated multi-operand optical neurons for scalable and hardware-efficient deep learning. Nanophotonics, 2024, .	6.0	1
844	Advances in neuromorphic computing: Expanding horizons for AI development through novel artificial neurons and in-sensor computing. Chinese Physics B, 2024, 33, 030702.	1.4	0
845	2Memristorâ€I Capacitor Integrated Temporal Kernel for Highâ€Dimensional Data Mapping. Small, 0, , .	10.0	0
846	ECG Classification using Binary CNN on RRAM Crossbar with Nonidealities-Aware Training, Readout Compensation and CWT Preprocessing. , 2023, , .		0
847	2D neuromorphic photonics. , 2024, , 141-165.		0
848	Noise tailoring, noise annealing, and external perturbation injection strategies in memristive Hopfield neural networks. , 2024, 2, .		Ο
849	Light- and Pressure-Stimulated Silver Oxide (AgO <sub><i>x</i></sub> )-Based Memristors for In-Sensor Memory and Computing Applications. ACS Applied Electronic Materials, 2024, 6, 1007-1017.	4.3	0
850	Photonic neural networks and optics-informed deep learning fundamentals. APL Photonics, 2024, 9, .	5.7	1
851	Melting-free integrated photonic memory with layered polymorphs. Nanophotonics, 2024, .	6.0	0
852	Compact Modeling and Mitigation of Parasitics in Crosspoint Accelerators of Neural Networks. IEEE Transactions on Electron Devices, 2024, 71, 1900-1906.	3.0	Ο
853	Anodic Niobium–Titanium Oxide Crossbar Memristor Arrays for pH Sensing in Liquids. Physica Status Solidi (A) Applications and Materials Science, 0, , .	1.8	1
854	An SRAM-based reconfigurable analog in-memory computing circuit for solving linear algebra problems. , 2023, , .		0
855	Memristor-based storage system with convolutional autoencoder-based image compression network. Nature Communications, 2024, 15, .	12.8	0
856	Toward a Brain–Neuromorphics Interface. Advanced Materials, 0, ,	21.0	0

#	Article	IF	CITATIONS
857	Meminductor emulators using off-the-shelf active blocks with application in chaotic oscillator. The Integration VLSI Journal, 2024, 96, 102165.	2.1	0
858	Regulated resistive switching behaviors of Pt/Ni0.5Zn0.5Fe2O4/Pt composite films by oxygen pressure. Ceramics International, 2024, 50, 16481-16488.	4.8	0
859	High-Reliability and Self-Rectifying Alkali Ion Memristor through Bottom Electrode Design and Dopant Incorporation. ACS Nano, 2024, 18, 6373-6386.	14.6	0
860	Enhancing in-situ updates of quantized memristor neural networks: a Siamese network learning approach. Cognitive Neurodynamics, 0, , .	4.0	0
861	Recent Advances in In-Memory Computing: Exploring Memristor and Memtransistor Arrays with 2D Materials. Nano-Micro Letters, 2024, 16, .	27.0	0
862	Enabling Reconfigurable Resistive Switching via Tailored Multimodal Phase Transition. ACS Applied Electronic Materials, 2024, 6, 1475-1482.	4.3	0
863	Interfacial Resistive Switching of Niobium–Titanium Anodic Memristors with Self-Rectifying Capabilities. Nanomaterials, 2024, 14, 381.	4.1	0
864	Programming memristor arrays with arbitrarily high precision for analog computing. Science, 2024, 383, 903-910.	12.6	0
865	Photonic neuromorphic architecture for tens-of-task lifelong learning. Light: Science and Applications, 2024, 13, .	16.6	0
866	Chalcogen Vacancy Engineering of Two-Dimensional Transition Metal Dichalcogenides for Electronic Applications. ACS Applied Nano Materials, 0, , .	5.0	0
867	Artificial neuromodulator–synapse mimicked by a three-terminal vertical organic ferroelectric barristor for fast and energy-efficient neuromorphic computing. Nano Energy, 2024, 124, 109435.	16.0	0
868	Electrolyteâ€Gated Transistor Array (20 × 20) with Lowâ€Programming Interference Based on Coplana Gate Structure for Unsupervised Learning. Small Science, 2024, 4, .	r <sub>9.9</sub>	0
869	Hardware implementation of memristor-based artificial neural networks. Nature Communications, 2024, 15, .	12.8	0
870	Simulation Modeling of an Analog Impulse Neural Network Based on a Memristor Crossbar Using Parallel Computing Technologies. Russian Microelectronics, 2023, 52, 786-792.	0.5	0
871	In Situ Imaging of Dynamic Current Paths in a Neuromorphic Nanoparticle Network with Critical Spiking Behavior. Advanced Functional Materials, 0, , .	14.9	0
872	Coherent General-Purpose Photonic Matrix Processor. ACS Photonics, 2024, 11, 1189-1196.	6.6	0
873	Ag-doped non–imperfection-enabled uniform memristive neuromorphic device based on van der Waals indium phosphorus sulfide. Science Advances, 2024, 10, .	10.3	0
874	Spinâ€Transferâ€Torque Magnetic Tunnel Junction Nonlinear Inâ€5ensor Computing Synapse for Improving the Performance of the Feedforward Neural Network. Advanced Intelligent Systems, 0, , . 	6.1	0

#	Article	IF	CITATIONS
875	Local prediction-learning in high-dimensional spaces enables neural networks to plan. Nature Communications, 2024, 15, .	12.8	0
876	Energy efficient photonic memory based on electrically programmable embedded III-V/Si memristors: switches and filters. , 2024, 3, .		0
877	Nanofluidic logic with mechano–ionic memristive switches. Nature Electronics, 2024, 7, 271-278.	26.0	0
878	Multiphase Reset Induced Reliable Dual-Mode Resistance Switching of the Ta/HfO <sub>2</sub> /RuO <sub>2</sub> Memristor. ACS Applied Materials & Interfaces, 2024, 16, 16462-16473.	8.0	0
879	Enabling reliable two-terminal memristor network by exploiting the dynamic reverse recovery in a diode selector. , 2024, 2, 100329.		0