Jiyong

List of Publications by Year in Descending Order

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

79 papers	1,767 citations	22 h-index	40 g-index
92 ext. papers	2,118 ext. citations	3.8 avg, IF	5.06 L-index

#	Paper	IF	Citations
79	Ion-Driven Electrochemical Random-Access Memory-Based Synaptic Devices for Neuromorphic Computing Systems: A Mini-Review.. *Micromachines*, **2022**, 13,	3.3	3
78	Analog synaptic behavior of mobile ion source-limited electrochemical RAM using CuOx oxide electrode for deep learning accelerator. *Applied Physics Letters*, **2022**, 120, 122101	3.4	0
77	Area and Thickness Scaling of NbOx-Based Threshold Switches for Oscillation Neurons. *IEEE Journal of the Electron Devices Society*, **2022**, 10, 397-401	2.3	0
76	Hybrid memory characteristics of NbOx threshold switching devices. *Applied Physics Letters*, **2021**, 119, 092102	3.4	1
75	Cu-ion-actuated three-terminal neuromorphic synaptic devices based on binary metal-oxide electrolyte and channel. *Applied Physics Letters*, **2021**, 119, 072103	3.4	7
74	Recent Advancements in Emerging Neuromorphic Device Technologies. *Advanced Intelligent Systems*, **2020**, 2, 2070101	6	2
73	Artificial Perspiration Membrane by Programmed Deformation of Thermoresponsive Hydrogels. *Advanced Materials*, **2020**, 32, e1905901	24	10
72	Improved Ferroelectric Switching in Sputtered HfZrOx Device Enabled by High Pressure Annealing. *IEEE Electron Device Letters*, **2020**, 41, 232-235	4.4	11
71	Optimized annealing conditions to enhance stability of polarization in sputtered HfZrOx layers for non-volatile memory applications. *Current Applied Physics*, **2020**, 20, 1441-1446	2.6	7
70	Exploiting defective RRAM array as synapses of HTM spatial pooler with boost-factor adjustment scheme for defect-tolerant neuromorphic systems. *Scientific Reports*, **2020**, 10, 11703	4.9	6
69	Ferroelectric Switching in Trilayer AlO/HfZrO/AlO Structure. *Micromachines*, **2020**, 11,	3.3	2
68	Recent Advancements in Emerging Neuromorphic Device Technologies. *Advanced Intelligent Systems*, **2020**, 2, 2000111	6	8
67	Device Design and Material Considerations of Ovonic Threshold Switch (OTS) for Cross-point MRAM Array **2019**,		1
66	. *IEEE Electron Device Letters*, **2019**, 40, 1622-1625	4.4	5
65	Two-Terminal Structured Synaptic Device Using Ionic Electrochemical Reaction Mechanism for Neuromorphic System. *IEEE Electron Device Letters*, **2019**, 40, 546-549	4.4	26
64	Impact of Selector Devices in Analog RRAM-Based Crossbar Arrays for Inference and Training of Neuromorphic System. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2019**, 27, 2205-2212	2.6	18
63	Microstructural engineering in interface-type synapse device for enhancing linear and symmetric conductance changes. *Nanotechnology*, **2019**, 30, 305202	3.4	9

62	Design Space Exploration of Ovonic Threshold Switch (OTS) for Sub-Threshold Read Operation in Cross-Point Memory Arrays **2019**,		1
61	Integrated Crossbar Array With Resistive Synapses and Oscillation Neurons. *IEEE Electron Device Letters*, **2019**, 40, 1313-1316	4.4	15
60	Understanding and Optimization of Pulsed SET Operation in HfOx-Based RRAM Devices for Neuromorphic Computing Applications. *IEEE Electron Device Letters*, **2018**, 39, 672-675	4.4	26
59	Comparative Study of Cross-Point MRAM Array With Exponential and Threshold Selectors for Read Operation. *IEEE Electron Device Letters*, **2018**, 39, 680-683	4.4	9
58	Resistive Memory-Based Analog Synapse: The Pursuit for Linear and Symmetric Weight Update. *IEEE Nanotechnology Magazine*, **2018**, 12, 36-44	1.7	54
57	CMOS compatible low-power volatile atomic switch for steep-slope FET devices. *Applied Physics Letters*, **2018**, 113, 033501	3.4	6
56	Implementation of Convolutional Kernel Function Using 3-D TiOx Resistive Switching Devices for Image Processing. *IEEE Transactions on Electron Devices*, **2018**, 65, 4716-4718	2.9	9
55	Design Considerations of Selector Device in Cross-Point RRAM Array for Neuromorphic Computing **2018**,		15
54	Two-Step Read Scheme in One-Selector and One-RRAM Crossbar-Based Neural Network for Improved Inference Robustness. *IEEE Transactions on Electron Devices*, **2018**, 65, 5549-5553	2.9	8
53	Controllable quantized conductance for multilevel data storage applications using conductive bridge random access memory. *Nanotechnology*, **2017**, 28, 115707	3.4	22
52	HfZrOx-Based Ferroelectric Synapse Device With 32 Levels of Conductance States for Neuromorphic Applications. *IEEE Electron Device Letters*, **2017**, 38, 732-735	4.4	140
51	Communication Effect of a Self-Limited Reset Operation on the Reset Breakdown Characteristics of a Monolithically Integrated 1T1R RRAM. *ECS Journal of Solid State Science and Technology*, **2017**, 6, P440-P442	2	2
50	Dual functionality of threshold and multilevel resistive switching characteristics in nanoscale HfO 2 -based RRAM devices for artificial neuron and synapse elements. *Microelectronic Engineering*, **2017**, 182, 42-45	2.5	28
49	Linking Conductive Filament Properties and Evolution to Synaptic Behavior of RRAM Devices for Neuromorphic Applications. *IEEE Electron Device Letters*, **2017**, 38, 1220-1223	4.4	49
48	Self-Limited CBRAM With Threshold Selector for 1S1R Crossbar Array Applications. *IEEE Electron Device Letters*, **2017**, 38, 1532-1535	4.4	24
47	Effects of Liner Thickness on the Reliability of AgTe/TiO2-Based Threshold Switching Devices. *IEEE Transactions on Electron Devices*, **2017**, 64, 4763-4767	2.9	18
46	Improved Synaptic Behavior Under Identical Pulses Using AlOx/HfO2 Bilayer RRAM Array for Neuromorphic Systems. *IEEE Electron Device Letters*, **2016**, 37, 994-997	4.4	253
45	Optimized Programming Scheme Enabling Linear Potentiation in Filamentary HfO2 RRAM Synapse for Neuromorphic Systems. *IEEE Transactions on Electron Devices*, **2016**, 63, 5064-5067	2.9	53

44	TiOx-Based RRAM Synapse With 64-Levels of Conductance and Symmetric Conductance Change by Adopting a Hybrid Pulse Scheme for Neuromorphic Computing. *IEEE Electron Device Letters*, **2016**, 37, 1559-1562	4.4	123
43	EditorsVChoice CommunicationHourglass-Shaped Metal-Filament Switching Device with Multi-Layer (AlOX/TiO2) Oxide Electrolytes. *ECS Journal of Solid State Science and Technology*, **2016**, 5, Q219-Q221	2	
42	Retention modeling for ultra-thin density of Cu-based conductive bridge random access memory (CBRAM). *AIP Advances*, **2016**, 6, 025203	1.5	20
41	CommunicationImpact of Filament Instability in an Ag2S-Based Conductive-Bridge RAM for Cross-Point Selector Applications. *ECS Journal of Solid State Science and Technology*, **2016**, 5, Q98-Q100	2	10
40	Introduction of WO3 Layer in a Cu-Based Al2O3 Conductive Bridge RAM System for Robust Cycling and Large Memory Window. *IEEE Journal of the Electron Devices Society*, **2016**, 4, 163-166	2.3	23
39	Role of Local Chemical Potential of Cu on Data Retention Properties of Cu-Based Conductive-Bridge RAM. *IEEE Electron Device Letters*, **2016**, 37, 173-175	4.4	19
38	Improved reset breakdown strength in a HfOx-based resistive memory by introducing RuOx oxygen diffusion barrier. *AIP Advances*, **2016**, 6, 055114	1.5	7
37	**2016**,		6
36	Comprehensive scaling study of NbO2 insulator-metal-transition selector for cross point array application. *Applied Physics Letters*, **2016**, 108, 153502	3.4	61
35	Monolithic integration of AgTe/TiO2 based threshold switching device with TiN liner for steep slope field-effect transistors **2016**,		11
34	Steep Slope Field-Effect Transistors With Ag/TiO2-Based Threshold Switching Device. *IEEE Electron Device Letters*, **2016**, 37, 932-934	4.4	36
33	CommunicationComprehensive Assessment of a Back-to-Back Schottky Diode with Ultrathin TiO2Layer for Cross-Point Selector Applications. *ECS Journal of Solid State Science and Technology*, **2016**, 5, Q188-Q190	2	4
32	Multilevel conductance switching of a HfO2 RRAM array induced by controlled filament for neuromorphic applications **2016**,		6
31	. *IEEE Electron Device Letters*, **2015**, 36, 681-683	4.4	115
30	The band-gap energy dependence of metal oxides on non-linear characteristics in the HfO2-based resistive random access memory. *Microelectronic Engineering*, **2015**, 147, 321-324	2.5	4
29	Effect of AC pulse overshoot on nonlinearity and reliability of selectorless resistive random access memory in AC pulse operation. *Solid-State Electronics*, **2015**, 104, 70-74	1.7	8
28	Structurally engineered stackable and scalable 3D titanium-oxide switching devices for high-density nanoscale memory. *Advanced Materials*, **2015**, 27, 59-64	24	37
27	Bidirectional threshold switching in engineered multilayer (Cu2O/Ag:Cu2O/Cu2O) stack for cross-point selector application. *Applied Physics Letters*, **2015**, 107, 113504	3.4	34

26	Threshold switching behavior of Ag-Si based selector device and hydrogen doping effect on its characteristics. *AIP Advances*, **2015**, 5, 127221	1.5	43
25	Accelerated Retention Test Method by Controlling Ion Migration Barrier of Resistive Random Access Memory. *IEEE Electron Device Letters*, **2015**, 36, 238-240	4.4	10
24	Demonstration of Low Power 3-bit Multilevel Cell Characteristics in a TaOx-Based RRAM by Stack Engineering. *IEEE Electron Device Letters*, **2015**, 36, 32-34	4.4	86
23	Dependence of reactive metal layer on resistive switching in a bi-layer structure Ta/HfOx filament type resistive random access memory. *Applied Physics Letters*, **2014**, 104, 083507	3.4	13
22	Engineering Oxygen Vacancy of Tunnel Barrier and Switching Layer for Both Selectivity and Reliability of Selector-Less ReRAM. *IEEE Electron Device Letters*, **2014**, 35, 1022-1024	4.4	20
21	Stepwise set operation for reliable switching uniformity and low operating current of ReRAMs. *Solid-State Electronics*, **2014**, 102, 42-45	1.7	1
20	Selector devices for 3-D cross-point ReRAM **2014**,		6
19	Control of Cu Conductive Filament in Complementary Atom Switch for Cross-Point Selector Device Application. *IEEE Electron Device Letters*, **2014**, 35, 60-62	4.4	27
18	Optimized Lightning-Rod Effect to Overcome Trade-Off Between Switching Uniformity and On/Off Ratio in ReRAM. *IEEE Electron Device Letters*, **2014**, 35, 214-216	4.4	5
17	Internal resistor of multi-functional tunnel barrier for selectivity and switching uniformity in resistive random access memory. *Nanoscale Research Letters*, **2014**, 9, 364	5	13
16	Effects of High-Pressure Hydrogen Annealing on the Formation of Conducting Filaments in Filament-Type Resistive Random-Access Memory. *Journal of Electronic Materials*, **2014**, 43, 3635-3639	1.9	2
15	Low-temperature spin-on-glass method involving high-pressure annealing for filling high-aspect-ratio structures. *Japanese Journal of Applied Physics*, **2014**, 53, 068007	1.4	2
14	Hardware implementation of associative memory characteristics with analogue-type resistive-switching device. *Nanotechnology*, **2014**, 25, 495204	3.4	22
13	Resistive-switching analogue memory device for neuromorphic application **2014**,		2
12	Improvement in reliability characteristics (retention and endurance) of RRAM by using high-pressure hydrogen annealing **2014**,		2
11	Tunnel barrier engineering of titanium oxide for high non-linearity of selector-less resistive random access memory. *Applied Physics Letters*, **2014**, 104, 052108	3.4	11
10	**2014**,		4
9	A nitrogen-treated memristive device for tunable electronic synapses. *Semiconductor Science and Technology*, **2014**, 29, 104006	1.8	10

8	Nanoscale (~10nm) 3D vertical ReRAM and NbO2 threshold selector with TiN electrode **2013**,		28
7	Selector-less ReRAM with an excellent non-linearity and reliability by the band-gap engineered multi-layer titanium oxide and triangular shaped AC pulse **2013**,		16
6	Highly Reliable Resistive Switching Without an Initial Forming Operation by Defect Engineering. *IEEE Electron Device Letters*, **2013**, 34, 1515-1517	4.4	16
5	BEOL compatible (300℃) TiN/TiOx/Ta/TiN 3D nanoscale (~10nm) IMT selector **2013**,		7
4	Vertically Stacked ReRAM Composed of a Bidirectional Selector and CB-RAM for Cross-Point Array Applications. *IEEE Electron Device Letters*, **2013**, 34, 1512-1514	4.4	23
3	Defect Engineering Using Bilayer Structure in Filament-Type RRAM. *IEEE Electron Device Letters*, **2013**, 34, 1250-1252	4.4	9
2	Multilayer-oxide-based bidirectional cell selector device for cross-point resistive memory applications. *Applied Physics Letters*, **2013**, 103, 202113	3.4	11
1	Two- and three-terminal HfO2-based multilevel resistive memories for neuromorphic analog synaptic elements. *Neuromorphic Computing and Engineering*,		5