Sangbum Kim

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/1177884/publications.pdf

Version: 2024-02-01

72	4,251	361413 20	361022 35
papers	citations	h-index	g-index

74	74	74	4063
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Phase Change Memory. Proceedings of the IEEE, 2010, 98, 2201-2227.	21.3	1,420
2	Neuromorphic computing using non-volatile memory. Advances in Physics: X, 2017, 2, 89-124.	4.1	629
3	Recent Progress in Phase-Change<?Pub _newline ?>Memory Technology. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2016, 6, 146-162.	3.6	273
4	Tutorial: Brain-inspired computing using phase-change memory devices. Journal of Applied Physics, 2018, 124, .	2.5	206
5	Brain-like associative learning using a nanoscale non-volatile phase change synaptic device array. Frontiers in Neuroscience, 2014, 8, 205.	2.8	176
6	NVM neuromorphic core with 64k-cell (256-by-256) phase change memory synaptic array with on-chip neuron circuits for continuous in-situ learning. , 2015, , .		125
7	Thickness and stoichiometry dependence of the thermal conductivity of GeSbTe films. Applied Physics Letters, 2007, 91, .	3.3	112
8	Thermal Boundary Resistance Measurements for Phase-Change Memory Devices. IEEE Electron Device Letters, 2010, 31, 56-58.	3.9	105
9	Dualâ€Phase Allâ€Inorganic Cesium Halide Perovskites for Conductingâ€Bridge Memoryâ€Based Artificial Synapses. Advanced Functional Materials, 2019, 29, 1906686.	14.9	79
10	Selfâ€Healing of a Confined Phase Change Memory Device with a Metallic Surfactant Layer. Advanced Materials, 2018, 30, 1705587.	21.0	69
11	Phonon and electron transport through Ge2Sb2Te5 films and interfaces bounded by metals. Applied Physics Letters, 2013, 102, .	3.3	68
12	Scaling the MOSFET gate dielectric: From high-k to higher-k? (Invited Paper). Microelectronic Engineering, 2009, 86, 1603-1608.	2.4	65
13	Resistance and Threshold Switching Voltage Drift Behavior in Phase-Change Memory and Their Temperature Dependence at Microsecond Time Scales Studied Using a Micro-Thermal Stage. IEEE Transactions on Electron Devices, 2011, 58, 584-592.	3.0	58
14	ALD-based confined PCM with a metallic liner toward unlimited endurance. , 2016, , .		51
15	In Situ Transmission Electron Microscopy Observation of Nanostructural Changes in Phase-Change Memory. ACS Nano, 2011, 5, 2742-2748.	14.6	48
16	Analysis of Temperature in Phase Change Memory Scaling. IEEE Electron Device Letters, 2007, 28, 697-699.	3.9	46
17	Phase-change memory cycling endurance. MRS Bulletin, 2019, 44, 710-714.	3.5	43
18	Nanofiber Channel Organic Electrochemical Transistors for Lowâ€Power Neuromorphic Computing and Wideâ€Bandwidth Sensing Platforms. Advanced Science, 2021, 8, 2001544.	11.2	42

#	Article	IF	Citations
19	A low power phase change memory using thermally confined TaN/TiN bottom electrode. , 2011, , .		37
20	A phase change memory cell with metallic surfactant layer as a resistance drift stabilizer. , 2013, , .		35
21	Experimental demonstration of array-level learning with phase change synaptic devices. , 2013, , .		35
22	An Integrated Phase Change Memory Cell With Ge Nanowire Diode For Cross-Point Memory. , 2007, , .		33
23	Training a Probabilistic Graphical Model With Resistive Switching Electronic Synapses. IEEE Transactions on Electron Devices, 2016, 63, 5004-5011.	3.0	33
24	Catalyze Materials Science with Machine Learning. , 2021, 3, 1151-1171.		28
25	Thermal disturbance and its impact on reliability of phase-change memory studied by the micro-thermal stage. , 2010, , .		26
26	Cluster-type analogue memristor by engineering redox dynamics for high-performance neuromorphic computing. Nature Communications, 2022, 13, .	12.8	26
27	One-Dimensional Thickness Scaling Study of Phase Change Material $(hbox{Ge}_{2}hbox{Sb}_{2}hbox{Te}_{5})$ Using a Pseudo 3-Terminal Device. IEEE Transactions on Electron Devices, 2011, 58, 1483-1489.	3.0	24
28	A thermally robust phase change memory by engineering the Ge/N concentration in (Ge,) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 382 Td (		24
29	Integrating Phase-Change Memory Cell With Ge Nanowire Diode for Crosspoint Memoryâ€"Experimental Demonstration and Analysis. IEEE Transactions on Electron Devices, 2008, 55, 2307-2313.	3.0	20
30	Oxygen migration in TiO2-based higher-k gate stacks. Journal of Applied Physics, 2010, 107, 054102.	2.5	20
31	Elucidating Ionic Programming Dynamics of Metalâ€Oxide Electrochemical Memory for Neuromorphic Computing. Advanced Electronic Materials, 2021, 7, 2100185.	5.1	20
32	Atomic-level engineering of phase change material for novel fast-switching and high-endurance PCM for storage class memory application. , 2013, , .		19
33	On-Chip Trainable 1.4M 6T2R PCM Synaptic Array with 1.6K Stochastic LIF Neurons for Spiking RBM. , 2019, , .		18
34	7.3 A resistance-drift compensation scheme to reduce MLC PCM raw BER by over 100Ã— for storage-class memory applications. , 2016, , .		17
35	A novel inspection and annealing procedure to rejuvenate phase change memory from cycling-induced degradations for storage class memory applications. , 2014, , .		16
36	A Resistance Drift Compensation Scheme to Reduce MLC PCM Raw BER by Over $100imes $ for Storage Class Memory Applications. IEEE Journal of Solid-State Circuits, 2017, 52, 218-228.	5.4	15

#	Article	IF	Citations
37	A Phase Change Memory Cell With Metal Nitride Liner as a Resistance Stabilizer to Reduce Read Current Noise for MLC Optimization. IEEE Transactions on Electron Devices, 2016, 63, 3922-3927.	3.0	14
38	A novel self-converging write scheme for 2-bits/cell phase change memory for Storage Class Memory (SCM) application. , 2015, , .		13
39	1D thickness scaling study of phase change material (Ge<inf>2</inf>Sb<inf>2</inf>Te<inf>5</inf>) using a pseudo 3-terminal device. , 2009, , .		12
40	Crystalline-as-deposited ALD phase change material confined PCM cell for high density storage class memory. , 2015, , .		12
41	Microthermal Stage for Electrothermal Characterization of Phase-Change Memory. IEEE Electron Device Letters, 2011, 32, 952-954.	3.9	11
42	A novel low power phase change memory using inter-granular switching. , 2016, , .		11
43	Recent progress of phase change memory (PCM) and resistive switching random access memory (RRAM). , 2010, , .		10
44	Thermoelectric Characterization and Power Generation Using a Silicon-on-Insulator Substrate. Journal of Microelectromechanical Systems, 2012, 21, 4-6.	2.5	10
45	Greater than 2-bits/cell MLC storage for ultra high density phase change memory using a novel sensing scheme. , 2015, , .		10
46	The impact of melting during reset operation on the reliability of phase change memory. , 2012, , .		7
47	Recent Progress of Phase Change Memory (PCM) and Resistive Switching Random Access Memory (RRAM). , 2011, , .		6
48	A Double-Data- Rate 2 (DDR2) Interface Phase-Change Memory with 533MB/s Read -Write Data Rate and 37.5ns Access Latency for Memory-Type Storage Class Memory Applications. , 2016, , .		6
49	Lightweight Refresh Method for PCM-based Neuromorphic Circuits. , 2018, , .		6
50	Reliability benefits of a metallic liner in confined PCM. , 2018, , .		6
51	Transition of memory technologies. , 2012, , .		5
52	Optimization of programming current on endurance of phase change memory. , 2012, , .		5
53	A Retention-Aware Multilevel Cell Phase Change Memory Program Evaluation Metric. IEEE Electron Device Letters, 2016, 37, 1422-1425.	3.9	5
54	Modeling of void formation in phase change memory devices. Solid-State Electronics, 2020, 164, 107684.	1.4	5

#	Article	IF	Citations
55	Fabrication and characterization of emerging nanoscale memory. , 2009, , .		4
56	Capacity optimization of emerging memory systems: A shannon-inspired approach to device characterization. , 2014, , .		4
57	Analysis of Effect of Weight Variation on SNN Chip with PCM-Refresh Method. Neural Processing Letters, 2021, 53, 1741-1751.	3.2	4
58	1/f noise in amorphous Sb₂Te₃ for energy-efficient stochastic synapses in neuromorphic computing. Semiconductor Science and Technology, 2021, 36, 124001.	2.0	4
59	Decoupled thermal resistances of phase change material and their impact on PCM devices. , 2010, , .		3
60	NVM Weight Variation Impact on Analog Spiking Neural Network Chip. Lecture Notes in Computer Science, 2018, , 676-685.	1.3	3
61	Analog Coding in Emerging Memory Systems. Scientific Reports, 2020, 10, 6831.	3.3	3
62	Pattern Training, Inference, and Regeneration Demonstration Using Onâ€Chip Trainable Neuromorphic Chips for Spiking Restricted Boltzmann Machine. Advanced Intelligent Systems, 2022, 4, .	6.1	3
63	A Procedure to Reduce Cell Variation in Phase Change Memory for Improving Multi-Level-Cell Performances. , 2015, , .		2
64	Simulation-based analysis of novel phase change memory structure with separated program and read paths for low program current and endurance enhancement. Materials Science in Semiconductor Processing, 2021, 134, 105987.	4.0	2
65	Generalized Phase Change Memory Scaling Rule Analysis. , 0, , .		1
66	Measurement of anisotropy in the thermal conductivity of Ge<inf>2</inf>Sb<inf>2</inf>Te<inf>5</inf> films. , 2009, , .		1
67	Towards the integration of both ROM and RAM functions phase change memory cells on a single die for system-on-chip (SOC) applications. , 2014, , .		1
68	Post-silicon calibration of analog CMOS using phase-change memory cells. , 2011, , .		0
69	Spiking Neural Network with 256 Ã— 256 PCM Array. , 2017, , 153-164.		0
70	Elucidating Ionic Programming Dynamics of Metalâ€Oxide Electrochemical Memory for Neuromorphic Computing (Adv. Electron. Mater. 8/2021). Advanced Electronic Materials, 2021, 7, 2170034.	5.1	0
71	(Invited) A Confined Phase Change Memory for M-Type Storage Class Memory. ECS Meeting Abstracts, 2017, , .	0.0	0
72	Training Large-Scale Spiking Neural Networks on Multi-core Neuromorphic System Using Backpropagation. Lecture Notes in Computer Science, 2019, , 185-194.	1.3	0