Sangbum Kim

List of Publications by Year
in descending order

72 papers	4,251 citations	411340 20 h-index	406436 35 g-index
74 all docs	74 docs citations	74 times ranked	4698 citing authors

#	Article	IF	Citations
1	Pattern Training, Inference, and Regeneration Demonstration Using On‐Chip Trainable Neuromorphic Chips for Spiking Restricted Boltzmann Machine. Advanced Intelligent Systems, 2022, 4, .	3.3	3
2	Cluster-type analogue memristor by engineering redox dynamics for high-performance neuromorphic computing. Nature Communications, 2022, 13, .	5.8	26
3	Analysis of Effect of Weight Variation on SNN Chip with PCM-Refresh Method. Neural Processing Letters, 2021, 53, 1741-1751.	2.0	4
4	Nanofiber Channel Organic Electrochemical Transistors for Low‐Power Neuromorphic Computing and Wide‐Bandwidth Sensing Platforms. Advanced Science, 2021, 8, 2001544.	5.6	42
5	Elucidating Ionic Programming Dynamics of Metal‐Oxide Electrochemical Memory for Neuromorphic Computing. Advanced Electronic Materials, 2021, 7, 2100185.	2.6	20
6	Catalyze Materials Science with Machine Learning. , 2021, 3, 1151-1171.		28
7	Elucidating Ionic Programming Dynamics of Metal‐Oxide Electrochemical Memory for Neuromorphic Computing (Adv. Electron. Mater. 8/2021). Advanced Electronic Materials, 2021, 7, 2170034.	2.6	0
8	1/f noise in amorphous Sb_2Te_3 for energy-efficient stochastic synapses in neuromorphic computing. Semiconductor Science and Technology, 2021, 36, 124001.	1.0	4
9	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.	1.9	2
10	Modeling of void formation in phase change memory devices. Solid-State Electronics, 2020, 164, 107684.	0.8	5
11	Analog Coding in Emerging Memory Systems. Scientific Reports, 2020, 10, 6831.	1.6	3
12	Dual‐Phase All‐Inorganic Cesium Halide Perovskites for Conducting‐Bridge Memory‐Based Artificial Synapses. Advanced Functional Materials, 2019, 29, 1906686.	7.8	79
13	Phase-change memory cycling endurance. MRS Bulletin, 2019, 44, 710-714.	1.7	43
14	On-Chip Trainable 1.4M 6T2R PCM Synaptic Array with 1.6K Stochastic LIF Neurons for Spiking RBM. , 2019, , .		18
15	Training Large-Scale Spiking Neural Networks on Multi-core Neuromorphic System Using Backpropagation. Lecture Notes in Computer Science, 2019, , 185-194.	1.0	0
16	Self‐Healing of a Confined Phase Change Memory Device with a Metallic Surfactant Layer. Advanced Materials, 2018, 30, 1705587.	11.1	69
17	Lightweight Refresh Method for PCM-based Neuromorphic Circuits. , 2018, , .		6
18	Reliability benefits of a metallic liner in confined PCM. , 2018, , .		6

#	ARTICLE	IF	CITATIONS
19	NVM Weight Variation Impact on Analog Spiking Neural Network Chip. Lecture Notes in Computer Science, 2018, , 676-685.	1.0	3
20	Tutorial: Brain-inspired computing using phase-change memory devices. Journal of Applied Physics, 2018, 124, .	1.1	206
21	Neuromorphic computing using non-volatile memory. Advances in Physics: X, 2017, 2, 89-124.	1.5	629
22	Spiking Neural Network with 256 Ã— 256 PCM Array. , 2017, , 153-164.		0
23	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.	3.5	15
24	(Invited) A Confined Phase Change Memory for M-Type Storage Class Memory. ECS Meeting Abstracts, 2017, , .	0.0	0
25	ALD-based confined PCM with a metallic liner toward unlimited endurance. , 2016, , .		51
26	Recent Progress in Phase-Change<?Pub _newline ?>Memory Technology. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2016, 6, 146-162.	2.7	273
27	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.	1.6	14
28	A Retention-Aware Multilevel Cell Phase Change Memory Program Evaluation Metric. IEEE Electron Device Letters, 2016, 37, 1422-1425.	2.2	5
29	A novel low power phase change memory using inter-granular switching. , 2016, , .		11
30	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
31	Training a Probabilistic Graphical Model With Resistive Switching Electronic Synapses. IEEE Transactions on Electron Devices, 2016, 63, 5004-5011.	1.6	33
32	7.3 A resistance-drift compensation scheme to reduce MLC PCM raw BER by over 100Ã— for storage-class memory applications. , 2016, , .		17
33	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
34	Crystalline-as-deposited ALD phase change material confined PCM cell for high density storage class memory. , 2015, , .		12
35	A novel self-converging write scheme for 2-bits/cell phase change memory for Storage Class Memory (SCM) application. , 2015, , .		13
36	A Procedure to Reduce Cell Variation in Phase Change Memory for Improving Multi-Level-Cell Performances. , 2015, , .		2

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37	Greater than 2-bits/cell MLC storage for ultra high density phase change memory using a novel sensing scheme. , 2015, , .		10
38	Capacity optimization of emerging memory systems: A shannon-inspired approach to device characterization. , 2014, , .		4
39	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
40	A novel inspection and annealing procedure to rejuvenate phase change memory from cycling-induced degradations for storage class memory applications. , 2014, , .		16
41	Brain-like associative learning using a nanoscale non-volatile phase change synaptic device array. Frontiers in Neuroscience, 2014, 8, 205.	1.4	176
42	Phonon and electron transport through Ge2Sb2Te5 films and interfaces bounded by metals. Applied Physics Letters, 2013, 102, .	1.5	68
43	Atomic-level engineering of phase change material for novel fast-switching and high-endurance PCM for storage class memory application. , 2013, , .		19
44	A phase change memory cell with metallic surfactant layer as a resistance drift stabilizer. , 2013, , .		35
45	Experimental demonstration of array-level learning with phase change synaptic devices. , 2013, , .		35
46	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
47	The impact of melting during reset operation on the reliability of phase change memory. , 2012, , .		7
48	Transition of memory technologies. , 2012, , .		5
49	Optimization of programming current on endurance of phase change memory. , 2012, , .		5
50	Thermoelectric Characterization and Power Generation Using a Silicon-on-Insulator Substrate. Journal of Microelectromechanical Systems, 2012, 21, 4-6.	1.7	10
51	Post-silicon calibration of analog CMOS using phase-change memory cells. , 2011, , .		0
52	A low power phase change memory using thermally confined TaN/TiN bottom electrode. , 2011, , .		37
53	*In Situ* Transmission Electron Microscopy Observation of Nanostructural Changes in Phase-Change Memory. ACS Nano, 2011, 5, 2742-2748.	7.3	48
54	Recent Progress of Phase Change Memory (PCM) and Resistive Switching Random Access Memory (RRAM). , 2011, , .		6

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55	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.	1.6	58
56	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.	1.6	24
57	Microthermal Stage for Electrothermal Characterization of Phase-Change Memory. IEEE Electron Device Letters, 2011, 32, 952-954.	2.2	11
58	Phase Change Memory. Proceedings of the IEEE, 2010, 98, 2201-2227.	16.4	1,420
59	Recent progress of phase change memory (PCM) and resistive switching random access memory (RRAM). , 2010, , .		10
60	Oxygen migration in TiO2-based higher-k gate stacks. Journal of Applied Physics, 2010, 107, 054102.	1.1	20
61	Decoupled thermal resistances of phase change material and their impact on PCM devices. , 2010, , .		3
62	Thermal Boundary Resistance Measurements for Phase-Change Memory Devices. IEEE Electron Device Letters, 2010, 31, 56-58.	2.2	105
63	Thermal disturbance and its impact on reliability of phase-change memory studied by the micro-thermal stage. , 2010, , .		26
64	Scaling the MOSFET gate dielectric: From high-k to higher-k? (Invited Paper). Microelectronic Engineering, 2009, 86, 1603-1608.	1.1	65
65	Measurement of anisotropy in the thermal conductivity of Ge<inf>2</inf>Sb<inf>2</inf>Te<inf>5</inf> films. , 2009, , .		1
66	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
67	Fabrication and characterization of emerging nanoscale memory. , 2009, , .		4
68	Integrating Phase-Change Memory Cell With Ge Nanowire Diode for Crosspoint Memory—Experimental Demonstration and Analysis. IEEE Transactions on Electron Devices, 2008, 55, 2307-2313.	1.6	20
69	Analysis of Temperature in Phase Change Memory Scaling. IEEE Electron Device Letters, 2007, 28, 697-699.	2.2	46
70	An Integrated Phase Change Memory Cell With Ge Nanowire Diode For Cross-Point Memory. , 2007, , .		33
71	Thickness and stoichiometry dependence of the thermal conductivity of GeSbTe films. Applied Physics Letters, 2007, 91, .	1.5	112
72	Generalized Phase Change Memory Scaling Rule Analysis. , 0, , .		1