

# Doo Seok Jeong

## List of Publications by Year in descending order

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123  
papers

5,989  
citations

126907

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h-index

71685

76  
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127  
all docs

127  
docs citations

127  
times ranked

6725  
citing authors

#	ARTICLE	IF	CITATIONS
1	Strategic allocation of two-dimensional van der Waals semiconductor as an oxygen reservoir for boosting resistive switching reliability. Applied Surface Science, 2022, 577, 151936.	6.1	2
2	Dot-Product Operation in Crossbar Array Using a Self-Rectifying Resistive Device. Advanced Materials Interfaces, 2022, 9, .	3.7	5
3	Low Energy and Analog Memristor Enabled by Regulation of Ru ion Motion for High Precision Neuromorphic Computing. Advanced Electronic Materials, 2022, 8, .	5.1	3
4	Hardware-Efficient Emulation of Leaky Integrate-and-Fire Model Using Template-Scaling-Based Exponential Function Approximation. IEEE Transactions on Circuits and Systems I: Regular Papers, 2021, 68, 350-362.	5.4	10
5	Self-rectifying resistive memory in passive crossbar arrays. Nature Communications, 2021, 12, 2968.	12.8	53
6	eWB: Event-Based Weight Binarization Algorithm for Spiking Neural Networks. IEEE Access, 2021, 9, 38097-38106.	4.2	4
7	Greedy Edge-Wise Training of Resistive Switch Arrays. Springer Series in Advanced Microelectronics, 2020, , 177-190.	0.3	0
8	Simplified calcium signaling cascade for synaptic plasticity. Neural Networks, 2020, 123, 38-51.	5.9	8
9	Highly Linear and Symmetric Weight Modification in HfO <sub>2</sub> -Based Memristive Devices for High-Precision Weight Entries. Advanced Electronic Materials, 2020, 6, 2000434.	5.1	16
10	TS-EFA: Resource-efficient High-precision Approximation of Exponential Functions Based on Template-scaling Method. , 2020, , .		5
11	Enhanced analog synaptic behavior of SiNx/a-Si bilayer memristors through Ge implantation. NPG Asia Materials, 2020, 12, .	7.9	16
12	Optimal Distribution of Spiking Neurons Over Multicore Neuromorphic Processors. IEEE Access, 2020, 8, 69426-69437.	4.2	4
13	SPSNN: nth Order Sequence-Predicting Spiking Neural Network. IEEE Access, 2020, 8, 110523-110534.	4.2	4
14	FPGA implementation of sequence-to-sequence predicting spiking neural networks. , 2020, , .		0
15	Combination-Encoding Content-Addressable Memory With High Content Density. IEEE Access, 2019, 7, 137620-137628.	4.2	2
16	Recent Progress in Real-Time Adaptable Digital Neuromorphic Hardware. Advanced Intelligent Systems, 2019, 1, 1900030.	6.1	21
17	Stochastic Learning with Back Propagation. , 2019, , .		2
18	Enhanced Reconfigurable Physical Unclonable Function Based on Stochastic Nature of Multilevel Cell RRAM. IEEE Transactions on Electron Devices, 2019, 66, 1717-1721.	3.0	19

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19	Artificial Neural Network for Response Inference of a Nonvolatile Resistance-Switch Array. <i>Micromachines</i> , 2019, 10, 219.	2.9	1
20	Markov Chain Hebbian Learning Algorithm With Ternary Synaptic Units. <i>IEEE Access</i> , 2019, 7, 10208-10223.	4.2	4
21	Nano-Intrinsic True Random Number Generation: A Device to Data Study. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 2019, 66, 2615-2626.	5.4	19
22	Random nanohole arrays and its application to crystalline Si thin foils produced by proton induced exfoliation for solar cells. <i>Scientific Reports</i> , 2019, 9, 19736.	3.3	6
23	Reconfigurable Spike Routing Architectures for On-Chip Local Learning in Neuromorphic Systems. <i>Advanced Materials Technologies</i> , 2019, 4, 1800345.	5.8	16
24	Enhanced efficiency of crystalline Si solar cells based on kerfless-thin wafers with nanohole arrays. <i>Scientific Reports</i> , 2018, 8, 3504.	3.3	25
25	Nonvolatile Memory Materials for Neuromorphic Intelligent Machines. <i>Advanced Materials</i> , 2018, 30, e1704729.	21.0	187
26	Enhanced blue responses in nanostructured Si solar cells by shallow doping. <i>Journal Physics D: Applied Physics</i> , 2018, 51, 125102.	2.8	5
27	A Physical Unclonable Function With Redox-Based Nanoionic Resistive Memory. <i>IEEE Transactions on Information Forensics and Security</i> , 2018, 13, 437-448.	6.9	24
28	Co-diffusion of boron and phosphorus for ultra-thin crystalline silicon solar cells. <i>Journal Physics D: Applied Physics</i> , 2018, 51, 275101.	2.8	3
29	Onion-like carbon as dopant/modification-free electrocatalyst for $[VO]^{2+}/[VO_2]^+$ redox reaction: Performance-control mechanism. <i>Carbon</i> , 2018, 127, 31-40.	10.3	11
30	Pointer Based Routing Scheme for On-chip Learning in Neuromorphic Systems. , 2018, , .		0
31	Tutorial: Neuromorphic spiking neural networks for temporal learning. <i>Journal of Applied Physics</i> , 2018, 124, .	2.5	23
32	A Ru-Pt alloy electrode to suppress leakage currents of dynamic random-access memory capacitors. <i>Nanotechnology</i> , 2018, 29, 455202.	2.6	4
33	Fabrication of parabolic Si nanostructures by nanosphere lithography and its application for solar cells. <i>Scientific Reports</i> , 2017, 7, 7336.	3.3	26
34	Tungsten carbide nanowalls as electrocatalyst for hydrogen evolution reaction: New approach to durability issue. <i>Applied Catalysis B: Environmental</i> , 2017, 203, 684-691.	20.2	74
35	Scalable excitatory synaptic circuit design using floating gate based leaky integrators. <i>Scientific Reports</i> , 2017, 7, 17579.	3.3	5
36	Hardware Spiking Artificial Neurons, Their Response Function, and Noises. <i>Cognitive Systems Monographs</i> , 2017, , 1-16.	0.1	1

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37	Design and Fabrication of Si Subwavelength Structures for Broadband Antireflection in Mid-Infrared Ranges. <i>Journal of Nanoscience and Nanotechnology</i> , 2017, 17, 8925-8934.	0.9	0
38	Leaky Integrate-and-Fire Neuron Circuit Based on Floating-Gate Integrator. <i>Frontiers in Neuroscience</i> , 2016, 10, 212.	2.8	55
39	Random Si Nanopillar Fabrication by Spontaneous Dewetting of Indium for Broadband Antireflection. <i>Journal of Nanoscience and Nanotechnology</i> , 2016, 16, 10644-10648.	0.9	0
40	Inherently-Forced Tensile Strain in Nanodiamond-Derived Onion-like Carbon: Consequences in Defect-Induced Electrochemical Activation. <i>Scientific Reports</i> , 2016, 6, 23913.	3.3	8
41	Polarity-tunable spin transport in all-oxide multiferroic tunnel junctions. <i>Nanoscale</i> , 2016, 8, 10799-10805.	5.6	9
42	Relaxation oscillator-realized artificial electronic neurons, their responses, and noise. <i>Nanoscale</i> , 2016, 8, 9629-9640.	5.6	39
43	Wafer-scale growth of MoS <sub>2</sub> thin films by atomic layer deposition. <i>Nanoscale</i> , 2016, 8, 10792-10798.	5.6	139
44	Random Si nanopillars for broadband antireflection in crystalline silicon solar cells. <i>Journal Physics D: Applied Physics</i> , 2016, 49, 375108.	2.8	8
45	Neuromorphic Computing: Memristors for Energy-Efficient New Computing Paradigms (Adv. Electron.) Tj ETQq1 1 0.784314 rgBT / C	5.1	3
46	Chameleonic electrochemical metallization cells: dual-layer solid electrolyte-inducing various switching behaviours. <i>Nanoscale</i> , 2016, 8, 15621-15628.	5.6	6
47	Memristors for Energy-Efficient New Computing Paradigms. <i>Advanced Electronic Materials</i> , 2016, 2, 1600090.	5.1	272
48	Frustration of Negative Capacitance in Al <sub>2</sub> O <sub>3</sub> /BaTiO <sub>3</sub> Bilayer Structure. <i>Scientific Reports</i> , 2016, 6, 19039.	3.3	44
49	Asymmetric back contact nanograting design for thin c-Si solar cells. <i>Current Applied Physics</i> , 2016, 16, 568-573.	2.4	3
50	Photocurrent enhancements of organic solar cells by altering dewetting of plasmonic Ag nanoparticles. <i>Scientific Reports</i> , 2015, 5, 14250.	3.3	36
51	Reliability of neuronal information conveyed by unreliable neuristor-based leaky integrate-and-fire neurons: a model study. <i>Scientific Reports</i> , 2015, 5, 9776.	3.3	38
52	Electric-field-induced Shift in the Threshold Voltage in LaAlO <sub>3</sub> /SrTiO <sub>3</sub> Heterostructures. <i>Scientific Reports</i> , 2015, 5, 8023.	3.3	13
53	Growth Enhancement and Nitrogen Loss in ZnO <sub>x</sub> N <sub>y</sub> Low-Temperature Atomic Layer Deposition with NH <sub>3</sub> . <i>Journal of Physical Chemistry C</i> , 2015, 119, 23470-23477.	3.1	7
54	Catalytic activity for oxygen reduction reaction on platinum-based core-shell nanoparticles: all-electron density functional theory. <i>Nanoscale</i> , 2015, 7, 15830-15839.	5.6	34

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55	Control of the initial growth in atomic layer deposition of Pt films by surface pretreatment. Nanotechnology, 2015, 26, 304003.	2.6	21
56	Orientation-Controlled Growth of Pt Films on SrTiO <sub>3</sub> (001) by Atomic Layer Deposition. Chemistry of Materials, 2015, 27, 6779-6783.	6.7	9
57	Population representation of artificial neural network. , 2014, , .		0
58	Multiprotocol-induced plasticity in artificial synapses. Nanoscale, 2014, 6, 15151-15160.	5.6	16
59	Silicon nanodisk array design for effective light trapping in ultrathin c-Si. Optics Express, 2014, 22, A1431.	3.4	29
60	Enhancement of Initial Growth of ZnO Films on Layer-Structured Bi <sub>2</sub> Te <sub>3</sub> by Atomic Layer Deposition. Chemistry of Materials, 2014, 26, 6448-6453.	6.7	14
61	Giant electrode effect on tunnelling electroresistance in ferroelectric tunnel junctions. Nature Communications, 2014, 5, 5414.	12.8	123
62	Enhanced power conversion efficiency of organic solar cells by embedding Ag nanoparticles in exciton blocking layer. Organic Electronics, 2014, 15, 2414-2419.	2.6	6
63	A Review of Three-Dimensional Resistive Switching Crossbar Array Memories from the Integration and Materials Property Points of View. Advanced Functional Materials, 2014, 24, 5316-5339.	14.9	319
64	Optical properties of amorphous Ge <sub>1-x</sub> Se <sub>x</sub> and Ge <sub>1-x</sub> As <sub>y</sub> Se <sub>x</sub> thin films – optical gap bowing and phonon modes. Journal of the Korean Physical Society, 2014, 64, 1726-1736.	0.7	1
65	SnO <sub>2</sub> thin films grown by atomic layer deposition using a novel Sn precursor. Applied Surface Science, 2014, 320, 188-194.	6.1	35
66	Atomic layer deposition of HfO <sub>2</sub> thin films using H <sub>2</sub> O <sub>2</sub> as oxidant. Applied Surface Science, 2014, 301, 451-455.	6.1	24
67	Triple-Junction Hybrid Tandem Solar Cells with Amorphous Silicon and Polymer-Fullerene Blends. Scientific Reports, 2014, 4, 7154.	3.3	19
68	Thickness dependence of surface plasmon resonance sensor response for metal ion detection. Journal Physics D: Applied Physics, 2013, 46, 315104.	2.8	11
69	Novel Aspect in Grain Size Control of Nanocrystalline Diamond Film for Thin Film Waveguide Mode Resonance Sensor Application. ACS Applied Materials & Interfaces, 2013, 5, 11631-11640.	8.0	9
70	Bipolar switching polarity reversal by electrolyte layer sequence in electrochemical metallization cells with dual-layer solid electrolytes. Nanoscale, 2013, 5, 12598.	5.6	9
71	Towards artificial neurons and synapses: a materials point of view. RSC Advances, 2013, 3, 3169.	3.6	171
72	Elastic resistance change and action potential generation of non-faradaic Pt/TiO <sub>2</sub> /Pt capacitors. Nanoscale, 2013, 5, 6363.	5.6	16

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73	Structural and optical properties of phase-change amorphous and crystalline Ge <sub>1-x</sub> Te <sub>x</sub> (0<math>x</math><math>\leq 1</math>) thin films. <i>Physica Status Solidi (Applications and Materials Science)</i> , 2013, 210, 267-275.		
74	Titanium dioxide thin films for next-generation memory devices. <i>Journal of Materials Research</i> , 2013, 28, 313-325.	2.6	67
75	Optical design of transparent metal grids for plasmonic absorption enhancement in ultrathin organic solar cells. <i>Optics Express</i> , 2013, 21, A669.	3.4	15
76	Effect of Ge Concentration in Ge <sub>x</sub> Se <sub>1-x</sub> Chalcogenide Glass on the Electronic Structures and the Characteristics of Ovonic Threshold Switching (OTS) Devices. <i>ECS Solid State Letters</i> , 2013, 2, Q75-Q77.	1.4	41
77	A Study on the Scalability of a Selector Device Using Threshold Switching in Pt/GeSe/Pt. <i>ECS Solid State Letters</i> , 2013, 2, N31-N33.	1.4	36
78	Effect of density of localized states on the ovonic threshold switching characteristics of the amorphous GeSe films. <i>Applied Physics Letters</i> , 2013, 103, .	3.3	28
79	Short-term memory of TiO <sub>2</sub> -based electrochemical capacitors: empirical analysis with adoption of a sliding threshold. <i>Nanotechnology</i> , 2013, 24, 384005.	2.6	33
80	A Special Section on Selected Peer-Reviewed Articles from the International Conference on Advanced Electromaterials 2011 (ICAE2011). <i>Journal of Nanoscience and Nanotechnology</i> , 2013, 13, 3254-3259.	0.9	0
81	Threshold resistive and capacitive switching behavior in binary amorphous GeSe. <i>Journal of Applied Physics</i> , 2012, 111, 102807.	2.5	33
82	Modified write-and-verify scheme for improving the endurance of multi-level cell phase-change memory using Ge-doped SbTe. <i>Solid-State Electronics</i> , 2012, 76, 67-70.	1.4	3
83	Emerging memories: resistive switching mechanisms and current status. <i>Reports on Progress in Physics</i> , 2012, 75, 076502.	20.1	881
84	Plasmonic nanograting design for inverted polymer solar cells. <i>Optics Express</i> , 2012, 20, A729.	3.4	29
85	Plasmonic absorption enhancement in organic solar cells by nano disks in a buffer layer. <i>Journal of Applied Physics</i> , 2012, 111, 103121.	2.5	26
86	Electric-field-enhanced ionic diffusivity in electrolytes: A model study. <i>Journal of the Korean Physical Society</i> , 2012, 61, 913-919.	0.7	2
87	Electrochemical metallization cells—blending nanoionics into nanoelectronics?. <i>MRS Bulletin</i> , 2012, 37, 124-130.	3.5	107
88	Size effects of metal nanoparticles embedded in a buffer layer of organic photovoltaics on plasmonic absorption enhancement. <i>Journal Physics D: Applied Physics</i> , 2012, 45, 065101.	2.8	31
89	Numerical study on passive crossbar arrays employing threshold switches as cell-selection-devices. <i>Electronic Materials Letters</i> , 2012, 8, 169-174.	2.2	3
90	Nanofilamentary resistive switching in binary oxide system; a review on the present status and outlook. <i>Nanotechnology</i> , 2011, 22, 254002.	2.6	530

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91	Overview on the Resistive Switching in TiO <sub>2</sub> Solid Electrolyte. Integrated Ferroelectrics, 2011, 124, 87-96.	0.7	5
92	Multi-level cell storage with a modulated current method for phase-change memory using Ge-doped SbTe. Current Applied Physics, 2011, 11, e79-e81.	2.4	6
93	Dc current transport behavior in amorphous GeSe films. Applied Physics A: Materials Science and Processing, 2011, 102, 1027-1032.	2.3	6
94	Pt/Ti/Al <sub>2</sub> O <sub>3</sub> /Al tunnel junctions exhibiting electroforming-free bipolar resistive switching behavior. Solid-State Electronics, 2011, 63, 1-4.	1.4	28
95	Controlled recrystallization for low-current RESET programming characteristics of phase-change memory with Ge-doped SbTe. Applied Physics Letters, 2011, 99, 143505.	3.3	15
96	A study on the temperature dependence of the threshold switching characteristics of Ge <sub>2</sub> Sb <sub>2</sub> Te <sub>5</sub> . Applied Physics Letters, 2010, 96, .	3.3	24
97	The effect of Ge addition on the RESET operation of a phase-change memory (PCM) device using Ge-doped SbTe. Current Applied Physics, 2010, 10, e79-e82.	2.4	3
98	Unipolar Switching in Pt <sup>x</sup> GeSe <sub>x</sub> Te <sub>1-x</sub> Pt. Electrochemical and Solid-State Letters, 2010, 13, G111.	2.2	5
99	First-principles calculations on the energetics of nitrogen-doped hexagonal Ge <sub>2</sub> Sb <sub>2</sub> Te <sub>5</sub> . Journal of Applied Physics, 2010, 107, .	2.5	9
100	Improved stability of a phase change memory device using Ge-doped SbTe at varying ambient temperature. Applied Physics Letters, 2010, 96, 133510.	3.3	16
101	A study on the temperature dependence of characteristics of phase change memory devices. Applied Physics Letters, 2009, 95, 093504.	3.3	6
102	Abnormal bipolar-like resistance change behavior induced by symmetric electroforming in Pt/TiO <sub>2</sub> /Pt resistive switching cells. Nanotechnology, 2009, 20, 375201.	2.6	33
103	Mechanism for bipolar switching in a Pt/TiO <sub>2</sub> /Pt resistive switching cell. Physical Review B, 2009, 79, .	2.6	33
104	Characteristic electroforming behavior in Pt/TiO <sub>2</sub> /Pt resistive switching cells depending on atmosphere. Journal of Applied Physics, 2008, 104, .	2.5	262
105	Coexistence of Bipolar and Unipolar Resistive Switching Behaviors in a Pt <sup>x</sup> TiO <sub>2</sub> Pt Stack. Electrochemical and Solid-State Letters, 2007, 10, G51.	2.2	293
106	Resistive switching in a Pt/TiO <sub>2</sub> /Pt thin film stack "a candidate for a non-volatile ReRAM. Microelectronic Engineering, 2007, 84, 1982-1985.	2.4	75
107	Impedance spectroscopy of TiO <sub>2</sub> thin films showing resistive switching. Applied Physics Letters, 2006, 89, 082909.	3.3	99
108	Study of the negative resistance phenomenon in transition metal oxide films from a statistical mechanics point of view. Journal of Applied Physics, 2006, 100, 113724.	2.5	36

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109	Resistive Switching in Pt <sup>2</sup> Al <sub>3</sub> TiO <sub>2</sub> Ru Stacked Structures. Electrochemical and Solid-State Letters, 2006, 9, G343.	2.2	107
110	Influence of carrier injection on resistive switching of TiO <sub>2</sub> thin films with Pt electrodes. Applied Physics Letters, 2006, 89, 162912.	3.3	66
111	Fabrication of ultrathin IrO <sub>2</sub> top electrode for improving thermal stability of metal-insulator-metal field emission cathodes. Thin Solid Films, 2005, 471, 236-242.	1.8	11
112	Reasons for obtaining an optical dielectric constant from the Poole-Frenkel conduction behavior of atomic-layer-deposited HfO <sub>2</sub> films. Applied Physics Letters, 2005, 86, 072903.	3.3	60
113	Improvement of the current-voltage characteristics of a tunneling dielectric by adopting a Si <sub>3</sub> N <sub>4</sub> -SiO <sub>2</sub> -Si <sub>3</sub> N <sub>4</sub> multilayer for flash memory application. Applied Physics Letters, 2005, 87, 152106.	3.3	19
114	Dielectric constant dispersion of yttrium-doped (Ba,Sr)TiO <sub>3</sub> films in the high-frequency (10kHz-67GHz) domain. Applied Physics Letters, 2005, 87, 232903.	3.3	7
115	Tunneling current from a metal electrode to many traps in an insulator. Physical Review B, 2005, 71, .	3.2	15
116	Identification of a determining parameter for resistive switching of TiO <sub>2</sub> thin films. Applied Physics Letters, 2005, 86, 262907.	3.3	317
117	Tunneling-assisted Poole-Frenkel conduction mechanism in HfO <sub>2</sub> thin films. Journal of Applied Physics, 2005, 98, 113701.	2.5	80
118	Growth Characteristics of Atomic Layer Deposited TiO <sub>2</sub> Thin Films on Ru and Si Electrodes for Memory Capacitor Applications. Journal of the Electrochemical Society, 2005, 152, C552.	2.9	64
119	Comparison between atomic-layer-deposited HfO <sub>2</sub> films using O <sub>3</sub> or H <sub>2</sub> O oxidant and Hf[N(CH <sub>3</sub> ) <sub>2</sub> ] <sub>4</sub> precursor. Applied Physics Letters, 2004, 85, 5953-5955.	3.3	78
120	Phosphorus ion implantation and POCl <sub>3</sub> doping effects of n <sup>+</sup> -polycrystalline-silicon/high-k gate dielectric (HfO <sub>2</sub> and Al <sub>2</sub> O <sub>3</sub> ) films. Applied Physics Letters, 2004, 84, 2868-2870.	3.3	3
121	Positive temperature coefficient of resistivity in paraelectric (Ba,Sr)TiO <sub>3</sub> thin films. Applied Physics Letters, 2004, 84, 94-96.	3.3	14
122	Voltage-induced degradation in self-aligned polycrystalline silicon gate n-type field-effect transistors with HfO <sub>2</sub> gate dielectrics. Applied Physics Letters, 2004, 85, 5965-5967.	3.3	11
123	Improvement of the current-voltage characteristics of a tunneling dielectric by barrier engineering by adopting an atomic-layer-deposited sin layer for flash memory applications. , 0, , .		2