Supriyo Datta

List of Publications by Year in descending order

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65 papers	2,809 citations	257101 24 h-index	182168 51 g-index
65 all docs	65 docs citations	65 times ranked	2349 citing authors

#	Article	IF	Citations
1	Hardware-Aware In Situ Learning Based on Stochastic Magnetic Tunnel Junctions. Physical Review Applied, 2022, 17, .	1.5	36
2	Hardware Design for Autonomous Bayesian Networks. Frontiers in Computational Neuroscience, 2021, 15, 584797.	1.2	16
3	Unified Framework for Charge-Spin Interconversion in Spin-Orbit Materials. Physical Review Applied, 2021, 15, .	1.5	8
4	Quantitative Evaluation of Hardware Binary Stochastic Neurons. Physical Review Applied, 2021, 15, .	1.5	18
5	Probabilistic computing with p-bits. Applied Physics Letters, 2021, 119, .	1.5	31
6	Hardware implementation of Bayesian network building blocks with stochastic spintronic devices. Scientific Reports, 2020, 10, 16002.	1.6	19
7	Autonomous Probabilistic Coprocessing With Petaflips per Second. IEEE Access, 2020, 8, 157238-157252.	2.6	27
8	From Charge to Spin and Spin to Charge: Stochastic Magnets for Probabilistic Switching. Proceedings of the IEEE, 2020, 108, 1322-1337.	16.4	19
9	Probabilistic Circuits for Autonomous Learning: A Simulation Study. Frontiers in Computational Neuroscience, 2020, 14, 14.	1.2	13
10	Correlated fluctuations in spin orbit torque coupled perpendicular nanomagnets. Physical Review B, 2020, 101, .	1.1	22
11	Rectification in Spin-Orbit Materials Using Low-Energy-Barrier Magnets. Physical Review Applied, 2019, 11, .	1.5	2
12	Low-Barrier Magnet Design for Efficient Hardware Binary Stochastic Neurons. IEEE Magnetics Letters, 2019, 10, 1-5.	0.6	47
13	p-bits for probabilistic spin logic. Applied Physics Reviews, 2019, 6, .	5.5	110
14	Voltage-Driven Building Block for Hardware Belief Networks. IEEE Design and Test, 2019, 36, 15-21.	1.1	15
15	Probabilistic Computing with Binary Stochastic Neurons. , 2019, , .		2
16	Integer factorization using stochastic magnetic tunnel junctions. Nature, 2019, 573, 390-393.	13.7	298
17	Non-Equilibrium Green's Function Based Circuit Models for Coherent Spin Devices. IEEE Nanotechnology Magazine, 2019, 18, 858-865.	1.1	2
18	Tunable charge to spin conversion in strontium iridate thin films. Physical Review Materials, 2019, 3, .	0.9	37

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19	Multi-terminal spin valve in a strong Rashba channel exhibiting three resistance states. Scientific Reports, 2018, 8, 3397.	1.6	12
20	How we proposed the spin transistor. Nature Electronics, 2018, 1, 604-604.	13.1	23
21	Transmission-Line Model for Materials with Spin-Momentum Locking. Physical Review Applied, 2018, 10, .	1.5	13
22	Implementing Bayesian networks with embedded stochastic MRAM. AIP Advances, 2018, 8, .	0.6	41
23	Low-Barrier Nanomagnets as p-Bits for Spin Logic. IEEE Magnetics Letters, 2017, 8, 1-5.	0.6	62
24	Intrinsic optimization using stochastic nanomagnets. Scientific Reports, 2017, 7, 44370.	1.6	166
25	Hardware emulation of stochastic p-bits for invertible logic. Scientific Reports, 2017, 7, 10994.	1.6	57
26	Stochastic <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>p</mml:mi></mml:mrow></mml:math> -Bits for Invertible Logic. Physical Review X, 2017, 7, .	2.8	163
27	Implementing p-bits With Embedded MTJ. IEEE Electron Device Letters, 2017, 38, 1767-1770.	2.2	118
28	Proposal of a Single Nano-Magnet Memory Device. IEEE Electron Device Letters, 2017, 38, 1665-1668.	2.2	13
29	Manipulating quantum information with spin torque. Scientific Reports, 2016, 5, 17912.	1.6	15
30	Spin Funneling for Enhanced Spin Injection into Ferromagnets. Scientific Reports, 2016, 6, 28868.	1.6	15
31	Evaluating Spintronic Devices Using the Modular Approach. IEEE Journal on Exploratory Solid-State Computational Devices and Circuits, 2016, 2, 51-60.	1.1	13
32	Spin Circuit Model for 2D Channels with Spin-Orbit Coupling. Scientific Reports, 2016, 6, 20325.	1.6	12
33	Multi-Terminal Spin Valve on Channels with Spin-Momentum Locking. Scientific Reports, 2016, 6, 35658.	1.6	21
34	Spin Circuit Representation for the Spin Hall Effect. IEEE Nanotechnology Magazine, 2016, 15, 225-236.	1.1	24
35	Impact of Scaling on the Dipolar Coupling in Magnetâ€“Insulatorâ€“Magnet Structures. IEEE Transactions on Magnetics, 2016, 52, 1-7.	1.2	4
36	Modular Approach to Spintronics. Scientific Reports, 2015, 5, 10571.	1.6	75

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37	Exponential Attenuation of Through-Bond Transmission in a Polyene: Theory and Potential Realizations. ACS Nano, 2015, 9, 11109-11120.	7.3	45
38	Emissionâ€“Diffusion Theory of the MOSFET. IEEE Transactions on Electron Devices, 2015, 62, 4174-4178.	1.6	17
39	Physics-based factorization of Magnetic Tunnel Junctions for modeling and circuit simulation. , 2014, , .		11
40	Quantum interference in polyenes. Journal of Chemical Physics, 2014, 141, 224311.	1.2	55
41	Spin switches for compact implementation of neuron and synapse. Applied Physics Letters, 2014, 104, .	1.5	19
42	Charge-Resistance Approach to Benchmarking Performance of Beyond-CMOS Information Processing Devices. IEEE Nanotechnology Magazine, 2014, 13, 143-150.	1.1	8
43	The spin switch oscillator: A new approach based on gain and feedback. , 2014, , .		4
44	All Spin Logic device as a compact artificial neuron. , 2012, , .		1
45	Unidirectional information transfer with cascaded All Spin Logic devices: A Ring Oscillator. , 2011, , .		2
46	All-Spin Logic Device With Inbuilt Nonreciprocity. IEEE Transactions on Magnetics, 2011, 47, 4026-4032.	1.2	126
47	Modeling all spin logic: Multi-magnet networks interacting via spin currents. , 2011, , .		10
48	Quantitative model for TMR and spin-transfer torque in MTJ devices. , 2010, , .		21
49	Conductance Asymmetry of Graphene p-n Junction. IEEE Transactions on Electron Devices, 2009, 56, 1292-1299.	1.6	114
50	Switching Energy of Ferromagnetic Logic Bits. IEEE Nanotechnology Magazine, 2009, 8, 505-514.	1.1	57
51	Atomistic non-equilibrium Greenâ€™s function simulations ofÂGraphene nano-ribbons in the quantum hall regime. Journal of Computational Electronics, 2008, 7, 407-410.	1.3	15
52	Key Role of Non Equilibrium Spin Density in Determining Spin Torque. , 2008, , .		0
53	Can the subthreshold swing in a classical FET be lowered below 60 mV/decade?. , 2008, , .		88
54	Interacting systems for self-correcting low power switching. Applied Physics Letters, 2007, 90, 093503.	1.5	83

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55	Theory of High Bias Coulomb Blockade in Ultrashort Molecules. IEEE Nanotechnology Magazine, 2007, 6, 536-544.	1.1	24
56	Simulation of Spin Torque Devices with Inelastic Spin flip Scattering. Device Research Conference, IEEE Annual, 2007, , .	0.0	0
57	Quantum Transport Simulation of Tunneling Based Spin Torque Transfer (STT) Devices: Design Trade offs and Torque Efficiency. , 2007, , .		13
58	Integrating Spintronics with Conventional Semiconductor Devices through Exchange Interaction. , 2006, , .		1
59	Self-consistent simulation of quantum transport and magnetization dynamics in spin-torque based devices. Applied Physics Letters, 2006, 89, 153504.	1.5	26
60	Self-Consistent Simulation of Hybrid Spintronic Devices. , 2006, , .		11
61	Theoretical investigation of surface roughness scattering in silicon nanowire transistors. Applied Physics Letters, 2005, 87, 043101.	1.5	134
62	Atomistic Simulation of Carbon Nanotube Field-Effect Transistors Using Non-Equilibrium Greenâ€™s Function Formalism. Journal of Computational Electronics, 2004, 3, 373-377.	1.3	24
63	A Quantum Mechanical Approach for the Simulation of Si/SiO2 Interface Roughness Scattering in Silicon Nanowire Transistors. Journal of Computational Electronics, 2004, 3, 453-457.	1.3	4
64	Silicon-based Molecular Electronics. Nano Letters, 2004, 4, 1803-1807.	4.5	196
65	Gating of a Molecular Transistor:Â Electrostatic and Conformational. Nano Letters, 2004, 4, 565-568.	4.5	131