

Shaloo Rakheja

List of Publications by Year in descending order

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63
papers

803
citations

623734

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552781

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65
all docs

65
docs citations

65
times ranked

743
citing authors

#	ARTICLE	IF	CITATIONS
1	Evaluation of the Potential Performance of Graphene Nanoribbons as On-Chip Interconnects. Proceedings of the IEEE, 2013, 101, 1740-1765.	21.3	105
2	Emerging GaN technologies for power, RF, digital, and quantum computing applications: Recent advances and prospects. Journal of Applied Physics, 2021, 130, .	2.5	89
3	An Ambipolar Virtual-Source-Based Charge-Current Compact Model for Nanoscale Graphene Transistors. IEEE Nanotechnology Magazine, 2014, 13, 1005-1013.	2.0	49
4	An Improved Virtual-Source-Based Transport Model for Quasi-Ballistic Transistorsâ€™Part I: Capturing Effects of Carrier Degeneracy, Drain-Bias Dependence of Gate Capacitance, and Nonlinear Channel-Access Resistance. IEEE Transactions on Electron Devices, 2015, 62, 2786-2793.	3.0	46
5	Circuit Simulation of Magnetization Dynamics and Spin Transport. IEEE Transactions on Electron Devices, 2014, 61, 1553-1560.	3.0	37
6	Impact of Dimensional Scaling and Size Effects on Spin Transport in Copper and Aluminum Interconnects. IEEE Transactions on Electron Devices, 2013, 60, 3913-3919.	3.0	34
7	Nonvolatile Reconfigurable 2D Schottky Barrier Transistors. Nano Letters, 2021, 21, 9318-9324.	9.1	31
8	Advancing hardware security using polymorphic and stochastic spin-hall effect devices. , 2018, , .		29
9	Voltage controlled Néel vector rotation in zero magnetic field. Nature Communications, 2021, 12, 1674.	12.8	29
10	Modeling and optimization for multi-layer graphene nanoribbon conductors. , 2011, , .		21
11	Gate-Voltage Tunability of Plasmons in Single-Layer Graphene Structuresâ€™Analytical Description, Impact of Interface States, and Concepts for Terahertz Devices. IEEE Nanotechnology Magazine, 2016, 15, 113-121.	2.0	19
12	A Physics-Based Compact Model for Ultrathin Black Phosphorus FETsâ€™Part I: Effect of Contacts, Temperature, Ambipolarity, and Traps. IEEE Transactions on Electron Devices, 2020, 67, 389-396.	3.0	19
13	A spin-based true random number generator exploiting the stochastic precessional switching of nanomagnets. Journal of Applied Physics, 2017, 121, .	2.5	17
14	Precessional spin-torque dynamics in biaxial antiferromagnets. Physical Review B, 2021, 103, .	3.2	17
15	Spin-Orbit Torque Devices for Hardware Security: From Deterministic to Probabilistic Regime. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020, 39, 1591-1606.	2.7	15
16	Opening the Doors to <i>Dynamic</i> Camouflaging: Harnessing the Power of Polymorphic Devices. IEEE Transactions on Emerging Topics in Computing, 2022, 10, 137-156.	4.6	15
17	Energy-Efficient Computing With Probabilistic Magnetic Bitsâ€™Performance Modeling and Comparison Against Probabilistic CMOS Logic. IEEE Transactions on Magnetics, 2017, 53, 1-10.	2.1	14
18	Performance Modeling of Silicon Carbide Photoconductive Switches for High-Power and High-Frequency Applications. IEEE Journal of the Electron Devices Society, 2020, 8, 1118-1128.	2.1	13

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19	Spin-Torque-Driven Terahertz Auto-Oscillations in Noncollinear Coplanar Antiferromagnets. <i>Physical Review Applied</i> , 2022, 17, .	3.8	13
20	The tuning of light-matter coupling and dichroism in graphene for enhanced absorption: Implications for graphene-based optical absorption devices. <i>Journal Physics D: Applied Physics</i> , 2016, 49, 115106.	2.8	12
21	Dynamics of magnetoelectric reversal of an antiferromagnetic domain. <i>Physical Review Applied</i> , 2019, 11, .	3.8	12
22	Intrinsic spin Hall effect in topological insulators: A first-principles study. <i>Physical Review Materials</i> , 2020, 4, .	2.4	11
23	Extrinsic spin-orbit coupling and spin relaxation in phosphorene. <i>Physical Review B</i> , 2019, 100, .	3.2	10
24	A Physics-Based Compact Model for Ultrathin Black Phosphorus FETsâ€”Part II: Model Validation Against Numerical and Experimental Data. <i>IEEE Transactions on Electron Devices</i> , 2020, 67, 397-405.	3.0	10
25	Design and Circuit Modeling of Graphene Plasmonic Nanoantennas. <i>IEEE Access</i> , 2020, 8, 129562-129575.	4.2	10
26	Design and Simulation of Near-Terahertz GaN Photoconductive Switchesâ€”Operation in the Negative Differential Mobility Regime and Pulse Compression. <i>IEEE Journal of the Electron Devices Society</i> , 2021, 9, 521-532.	2.1	10
27	SMART: A Secure Magnetoelectric Antiferromagnet-Based Tamper-Proof Non-Volatile Memory. <i>IEEE Access</i> , 2020, 8, 76130-76142.	4.2	9
28	Pulse Compression Photoconductive Switching Using Negative Differential Mobility. <i>IEEE Transactions on Electron Devices</i> , 2022, 69, 590-596.	3.0	9
29	A Probability-Density Function Approach to Capture the Stochastic Dynamics of the Nanomagnet and Impact on Circuit Performance. <i>IEEE Transactions on Electron Devices</i> , 2016, 63, 4119-4126.	3.0	8
30	On the Gaussian Pulse Propagation Through Multilayer Graphene Plasmonic Waveguidesâ€”Impact of Electrostatic Screening and Frequency Dispersion on Group Velocity and Pulse Distortion. <i>IEEE Nanotechnology Magazine</i> , 2016, 15, 936-946.	2.0	8
31	Dispersion characteristics of THz surface plasmons in nonlinear graphene-based parallel-plate waveguide with Kerr-type core dielectric. <i>Journal of Applied Physics</i> , 2017, 122, 083101.	2.5	7
32	Physical limitations on delay and energy dissipation of interconnects for post-CMOS devices. , 2010, , .		6
33	An analytic current-voltage model for quasi-ballistic III-nitride high electron mobility transistors. <i>Journal of Applied Physics</i> , 2018, 123, .	2.5	6
34	A virtual-source emission-diffusion I-V model for ultra-thin black phosphorus field-effect transistors. <i>Journal of Applied Physics</i> , 2019, 125, .	2.5	6
35	A unified static-dynamic analytic model for ultra-scaled III-nitride high electron mobility transistors. <i>Journal of Applied Physics</i> , 2019, 125, .	2.5	5
36	Voltage tunable plasmon propagation in dual gated bilayer graphene. <i>Journal of Applied Physics</i> , 2017, 122, 153101.	2.5	4

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37	Anisotropy-driven quantum capacitance in multi-layered black phosphorus. Applied Physics Letters, 2017, 111, .	3.3	4
38	Reversal time of jump-noise magnetization dynamics in nanomagnets via Monte Carlo simulations. Journal of Applied Physics, 2018, 123, .	2.5	4
39	Voltage-Controlled Topological Spin Switch for Ultralow-Energy Computing: Performance Modeling and Benchmarking. Physical Review Applied, 2019, 11, .	3.8	4
40	Spin-Based Reconfigurable Logic for Power- and Area-Efficient Applications. IEEE Design and Test, 2019, 36, 22-30.	1.2	4
41	Compact modeling of gate leakage phenomenon in GaN HEMTs. , 2020, , .		4
42	Design considerations for gallium arsenide pulse compression photoconductive switch. Journal of Applied Physics, 2022, 131, .	2.5	4
43	Optimal III-nitride HEMTs: from materials and device design to compact model of the 2DEG charge density. Proceedings of SPIE, 2017, , .	0.8	3
44	Reversal Time of Jump-Noise Dynamics for Large Nucleation. IEEE Transactions on Magnetics, 2019, 55, 1-3.	2.1	3
45	Spin splitting and spin Hall conductivity in buckled monolayers of group 14: First-principles calculations. Physical Review B, 2021, 104, .	3.2	3
46	Tamper-Proof Hardware from Emerging Technologies. , 2021, , 195-209.		3
47	A unified current-voltage and charge-voltage model of quasi-ballistic III-nitride HEMTs for RF applications. , 2018, , .		2
48	Interconnect performance and energy-per-bit for post-CMOS logic circuits: Modeling, analysis, and comparison with CMOS logic. , 2011, , .		1
49	Engineering plasmons in graphene nanostructures in THz frequencies: Compact modeling and performance analysis for on-chip interconnects. , 2015, , .		1
50	Communication limits of on-chip graphene plasmonic interconnects. , 2017, , .		1
51	Analytic Modeling of Nonlinear Current Conduction in Access Regions of III-Nitride HEMTs. MRS Advances, 2018, 3, 131-136.	0.9	1
52	Analytic modeling of dipolar field requirements for robust coupling in a non-identical biaxial two-magnet system. Journal of Applied Physics, 2018, 124, 023901.	2.5	1
53	Switching Time of Spin-Torque-Driven Magnetization in Biaxial Ferromagnets. Physical Review Applied, 2020, 13, .	3.8	1
54	Modeling-based design and benchmarking of Al-rich AlGaN 3D nanosheet MOSFET and MOSHEMTs for RF Applications. , 2021, , .		1

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55	Intrinsic Entropy for True Random Number Generation. , 2021, , 103-122.		1
56	A Prony-Based Curve-Fitting Method for Characterization of RF Pulses From Optoelectronic Devices. IEEE Signal Processing Letters, 2022, 29, 364-368.	3.6	1
57	Evaluating Performance of Spintronics-Based Spiking Neural Network Chips using Parallel Discrete Event Simulation. , 2022, , .		1
58	Graphene-based plasma wave interconnects for on-chip communication in the terahertz band. , 2017, , .		0
59	Terahertz band communication using plasma wave propagation in multilayer graphene heterostructures. IET Cyber-Physical Systems: Theory and Applications, 2018, 3, 89-98.	3.3	0
60	A unified charge-current compact model of gallium nitride transistors for RF and digital applications. , 2019, , .		0
61	Modeling and Simulation of Quasi-Ballistic III-Nitride Transistors for RF and Digital Applications. International Journal of High Speed Electronics and Systems, 2019, 28, 1940011.	0.7	0
62	Performance evaluation of copper and graphene nanoribbons in 2-D NoC structures. , 2017, , .		0
63	Voltage-controlled topological-spin switch for ultra-low-energy computation. , 2018, , .		0