Gerhard Klimeck

List of Publications by Year
in descending order

464 papers	15,490 citations	23544 58 h-index	24961 109 g-index
473 all docs	473 docs citations	473 times ranked	9679 citing authors

#	Article	IF	Citations
1	Silicon quantum electronics. Reviews of Modern Physics, 2013, 85, 961-1019.	16.4	892
2	A single-atom transistor. Nature Nanotechnology, 2012, 7, 242-246.	15.6	730
3	Single and multiband modeling of quantum electron transport through layered semiconductor devices. Journal of Applied Physics, 1997, 81, 7845-7869.	1.1	719
4	Atomistic simulation of nanowires in thesp3d5s*tight-binding formalism: From boundary conditions to strain calculations. Physical Review B, 2006, 74, .	1.1	357
5	Valence band effective-mass expressions in thesp3d5s*empirical tight-binding model applied to a Si and Ge parametrization. Physical Review B, 2004, 69, .	1.1	349
6	Ohmâ€™s Law Survives to the Atomic Scale. Science, 2012, 335, 64-67.	6.0	291
7	Gate-induced quantum-confinement transition of a single dopant atom in a siliconÂFinFET. Nature Physics, 2008, 4, 656-661.	6.5	287
8	Spin-valley lifetimes in a silicon quantum dot with tunable valley splitting. Nature Communications, 2013, 4, 2069.	5.8	231
9	Atomistic full-band simulations of silicon nanowire transistors: Effects of electron-phonon scattering. Physical Review B, 2009, 80, .	1.1	225
10	Diagonal parameter shifts due to nearest-neighbor displacements in empirical tight-binding theory. Physical Review B, 2002, 66, .	1.1	217
11	Atomistic Simulation of Realistically Sized Nanodevices Using NEMO 3-Dâ€"Part I: Models and Benchmarks. IEEE Transactions on Electron Devices, 2007, 54, 2079-2089.	1.6	201
12	Boundary conditions for the electronic structure of finite-extent embedded semiconductor nanostructures. Physical Review B, 2004, 69, .	1.1	200
13	Electronic Properties of Silicon Nanowires. IEEE Transactions on Electron Devices, 2005, 52, 1097-1103.	1.6	177
14	On the Validity of the Parabolic Effective-Mass Approximation for the Iâ€"V Calculation of Silicon Nanowire Transistors. IEEE Transactions on Electron Devices, 2005, 52, 1589-1595.	1.6	168
15	Bandstructure Effects in Silicon Nanowire Electron Transport. IEEE Transactions on Electron Devices, 2008, 55, 1286-1297.	1.6	167
16	nanoHUB.org: Advancing Education and Research in Nanotechnology. Computing in Science and Engineering, 2008, 10, 17-23.	1.2	163
17	Electrically Tunable Bandgaps in Bilayer MoS₂. Nano Letters, 2015, 15, 8000-8007.	4.5	161
18	Tunnel Field-Effect Transistors in 2-D Transition Metal Dichalcogenide Materials. IEEE Journal on Exploratory Solid-State Computational Devices and Circuits, 2015, 1, 12-18.	1.1	161

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19	Simulation of nanowire tunneling transistors: From the Wentzelâ€“Kramersâ€“Brillouin approximation to full-band phonon-assisted tunneling. Journal of Applied Physics, 2010, 107, .	1.1	158
20	Performance Analysis of a Ge/Si Core/Shell Nanowire Field-Effect Transistor. Nano Letters, 2007, 7, 642-646.	4.5	157
21	Atomistic Full-Band Design Study of InAs Band-to-Band Tunneling Field-Effect Transistors. IEEE Electron Device Letters, 2009, 30, 602-604.	2.2	147
22	TeraGrid Science Gateways and Their Impact on Science. Computer, 2008, 41, 32-41.	1.2	146
23	NEMO5: A Parallel Multiscale Nanoelectronics Modeling Tool. IEEE Nanotechnology Magazine, 2011, 10, 1464-1474.	1.1	144
24	Valley splitting in strained silicon quantum wells. Applied Physics Letters, 2004, 84, 115-117.	1.5	142
25	Quantitative simulation of a resonant tunneling diode. Journal of Applied Physics, 1997, 81, 3207-3213.	1.1	139
26	Electrically controlling single-spin qubits in a continuous microwave field. Science Advances, 2015, 1, e1500022.	4.7	125
27	Silicon quantum processor with robust long-distance qubit couplings. Nature Communications, 2017, 8, 450.	5.8	123
28	Electromagnetic coupling and gauge invariance in the empirical tight-binding method. Physical Review B, 2001, 63, .	1.1	121
29	Electron-hole correlations in semiconductor quantum dots with tight-binding wave functions. Physical Review B, 2001, 63, .	1.1	120
30	Spin blockade and exchange in Coulomb-confined silicon double quantum dots. Nature Nanotechnology, 2014, 9, 430-435.	15.6	117
31	Practical application of zone-folding concepts in tight-binding calculations. Physical Review B, 2005, 71, .	1.1	113
32	Experimental verification of an optical negative-index material. Laser Physics Letters, 2006, 3, 49-55.	0.6	110
33	Valley splitting in low-density quantum-confined heterostructures studied using tight-binding models. Physical Review B, 2004, 70, .	1.1	108
34	High Precision Quantum Control of Single Donor Spins in Silicon. Physical Review Letters, 2007, 99, 036403.	2.9	108
35	Approximate bandstructures of semiconductor alloys from tight-binding supercell calculations. Journal of Physics Condensed Matter, 2007, 19, 036203.	0.7	108
36	Room temperature operation of epitaxially grown Si/Si0.5Ge0.5/Si resonant interband tunneling diodes. Applied Physics Letters, 1998, 73, 2191-2193.	1.5	104

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37	Complementary Black Phosphorus Tunneling Field-Effect Transistors. ACS Nano, 2019, 13, 377-385.	7.3	103
38	Atomistic Simulation of Realistically Sized Nanodevices Using NEMO 3-Dâ€"Part II: Applications. IEEE Transactions on Electron Devices, 2007, 54, 2090-2099.	1.6	101
39	Si tight-binding parameters from genetic algorithm fitting. Superlattices and Microstructures, 2000, 27, 77-88.	1.4	100
40	Quantum device simulation with a generalized tunneling formula. Applied Physics Letters, 1995, 67, 2539-2541.	1.5	99
41	Valley splitting in strained silicon quantum wells modeled with 2Â° miscuts, step disorder, and alloy disorder. Applied Physics Letters, 2007, 90, 092109.	1.5	98
42	Conductance spectroscopy in coupled quantum dots. Physical Review B, 1994, 50, 2316-2324.	1.1	97
43	Resonant tunneling through quantum-dot arrays. Physical Review B, 1994, 50, 8035-8038.	1.1	97
44	sp3s*Tight-binding parameters for transport simulations in compound semiconductors. Superlattices and Microstructures, 2000, 27, 519-524.	1.4	94
45	Spatially resolving valley quantum interference of a donor in silicon. Nature Materials, 2014, 13, 605-610.	13.3	90
46	Few-layer Phosphorene: An Ideal 2D Material For Tunnel Transistors. Scientific Reports, 2016, 6, 28515.	1.6	90
47	Efficient and realistic device modeling from atomic detail to the nanoscale. Journal of Computational Electronics, 2013, 12, 592-600.	1.3	85
48	A Three-Dimensional Simulation Study of the Performance of Carbon Nanotube Field-Effect Transistors With Doped Reservoirs and Realistic Geometry. IEEE Transactions on Electron Devices, 2006, 53, 1782-1788.	1.6	84
49	Leakage-Reduction Design Concepts for Low-Power Vertical Tunneling Field-Effect Transistors. IEEE Electron Device Letters, 2010, 31, 621-623.	2.2	81
50	Quantum simulation of the Hubbard model with dopant atoms in silicon. Nature Communications, 2016, 7, 11342.	5.8	81
51	Computational Electronics. , 0, , .		81
52	Effect of wetting layers on the strain and electronic structure of InAs self-assembled quantum dots. Physical Review B, 2004, 70, .	1.1	77
53	Dielectric Engineered Tunnel Field-Effect Transistor. IEEE Electron Device Letters, 2015, 36, 1097-1100.	2.2	77
54	Performance analysis of statistical samples of graphene nanoribbon tunneling transistors with line edge roughness. Applied Physics Letters, 2009, 94, 223505.	1.5	73

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55	Polarization-Engineered III-Nitride Heterojunction Tunnel Field-Effect Transistors. IEEE Journal on Exploratory Solid-State Computational Devices and Circuits, 2015, 1, 28-34.	1.1	73
56	Performance Comparisons of IIIâ€"V and Strained-Si in Planar FETs and Nonplanar FinFETs at Ultrashort Gate Length (12 nm). IEEE Transactions on Electron Devices, 2012, 59, 2107-2114.	1.6	71
57	Evolution of analog circuits on field programmable transistor arrays. , 0, , .		70
58	Performance comparisons of tunneling field-effect transistors made of InSb, Carbon, and GaSb-InAs broken gap heterostructures. , 2009, , .		69
59	Brillouin-zone unfolding of perfect supercells having nonequivalent primitive cells illustrated with a<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi mathvariant="normal">Si</mml:mi><mml:mo>âˆ•</mml:mo><mml:mi mathvariant="normal">Ge</mml:mi></mml:mrow></mml:math>tight-binding parameterization. Physical Review B, 2007, 76, .	1.1	67
60	Saving Mooreâ€™s Law Down To 1â€‰nm Channels With Anisotropic Effective Mass. Scientific Reports, 2016, 6, 31501.	1.6	64
61	Full-band simulation of indirect phonon assisted tunneling in a silicon tunnel diode with delta-doped contacts. Applied Physics Letters, 2001, 78, 814-816.	1.5	60
62	Band-Structure Effects on the Performance of IIIâ€"V Ultrathin-Body SOI MOSFETs. IEEE Transactions on Electron Devices, 2008, 55, 1116-1122.	1.6	57
63	Transmission resonances and zeros in multiband models. Physical Review B, 1995, 52, 2754-2765.	1.1	56
64	Many-body levels of optically excited and multiply charged InAs nanocrystals modeled by semiempirical tight binding. Physical Review B, 2002, 66, .	1.1	56
65	Orbital Stark effect and quantum confinement transition of donors in silicon. Physical Review B, 2009, 80, .	1.1	56
66	Full Three-Dimensional Quantum Transport Simulation of Atomistic Interface Roughness in Silicon Nanowire FETs. IEEE Transactions on Electron Devices, 2011, 58, 1371-1380.	1.6	56
67	Thickness Engineered Tunnel Field-Effect Transistors Based on Phosphorene. IEEE Electron Device Letters, 2017, 38, 130-133.	2.2	56
68	Modified valence force field approach for phonon dispersion: fromÂzinc-blende bulk to nanowires. Journal of Computational Electronics, 2010, 9, 160-172.	1.3	55
69	Optimum High-k Oxide for the Best Performance of Ultra-Scaled Double-Gate MOSFETs. IEEE Nanotechnology Magazine, 2016, 15, 904-910.	1.1	55
70	Tight-binding analysis of Si and GaAs ultrathin bodies with subatomic wave-function resolution. Physical Review B, 2015, 92, .	1.1	54
71	Computational aspects of the three-dimensional feature-scale simulation of silicon-nanowire field-effect sensors for DNA detection. Journal of Computational Electronics, 2007, 6, 387-390.	1.3	53
72	Moving Toward Nano-TCAD Through Multimillion-Atom Quantum-Dot Simulations Matching Experimental Data. IEEE Nanotechnology Magazine, 2009, 8, 330-344.	1.1	52

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73	Effective-mass reproducibility of the nearest-neighborsp3s*models: Analytic results. Physical Review B, 1997, 56, 4102-4107.	1.1	51
74	Bandstructure Effects in Silicon Nanowire Hole Transport. IEEE Nanotechnology Magazine, 2008, 7, 710-719.	1.1	51
75	Transferable tight-binding model for strained group IV and III-V materials and heterostructures. Physical Review B, 2016, 94, .	1.1	51
76	Effect of anharmonicity of the strain energy on band offsets in semiconductor nanostructures. Applied Physics Letters, 2004, 85, 4193-4195.	1.5	50
77	Computing entries of the inverse of a sparse matrix using the FIND algorithm. Journal of Computational Physics, 2008, 227, 9408-9427.	1.9	50
78	The discretized SchrÃ¶dinger equation and simple models for semiconductor quantum wells. European Journal of Physics, 2004, 25, 503-514.	0.3	48
79	Performance evaluation of ballistic silicon nanowire transistors with atomic-basis dispersion relations. Applied Physics Letters, 2005, 86, 093113.	1.5	47
80	A Tight-Binding Study of the Ballistic Injection Velocity for Ultrathin-Body SOI MOSFETs. IEEE Transactions on Electron Devices, 2008, 55, 866-871.	1.6	47
81	Coherent Control of a Single<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mmultiscripts><mml:mrow><mml:mi>Si</mml:mi></mml:mrow><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>29</mml:mn></mml:mrow></mml:mmultiscripts></mml:mrow></mml:math>Nuclear Spin Qubit. Physical Review Letters, 2014, 113, 246801.	2.9	47
82	Engineering Nanowire n-MOSFETs at <formula formulatype="inline"><tex Notation="TeX">$L_{g}<8~{m nm}$</tex></formula>. IEEE Transactions on Electron Devices, 2013, 60, 2171-2177.	1.6	46
83	Design concepts of terahertz quantum cascade lasers: Proposal for terahertz laser efficiency improvements. Applied Physics Letters, 2010, 97, .	1.5	45
84	Experimental and atomistic theoretical study of degree of polarization from multilayer InAs/GaAs quantum dot stacks. Physical Review B, 2011, 84, .	1.1	45
85	Highly tunable exchange in donor qubits in silicon. Npj Quantum Information, 2016, 2, .	2.8	45
86	Gate-induced<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>g</mml:mi></mml:math>-factor control and dimensional transition for donors in multivalley semiconductors. Physical Review B, 2009, 80, .	1.1	44
87	Computational Study on the Performance of Si Nanowire pMOSFETs Based on the $k cdot p$ Method. IEEE Transactions on Electron Devices, 2010, 57, 2274-2283.	1.6	44
88	Electronic structure of realistically extended atomistically resolved disordered Si:P<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î´</mml:mi></mml:math>-doped layers. Physical Review B, 2011, 84, .	1.1	44
89	nanoHUB.org: cloud-based services for nanoscale modeling, simulation, and education. Nanotechnology Reviews, 2013, 2, 107-117.	2.6	43
90	Physical oxide thickness extraction and verification using quantum mechanical simulation. , 0, , .		42

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91	Interface-induced spin-orbit interaction in silicon quantum dots and prospects for scalability. Physical Review B, 2018, 97, .	1.1	42
92	Material Selection for Minimizing Direct Tunneling in Nanowire Transistors. IEEE Transactions on Electron Devices, 2012, 59, 2064-2069.	1.6	41
93	Simulations of nanowire transistors: atomistic vs. effective mass models. Journal of Computational Electronics, 2008, 7, 363-366.	1.3	40
94	Strain-induced, off-diagonal, same-atom parameters in empirical tight-binding theory suitable for [110] uniaxial strain applied to a silicon parametrization. Physical Review B, 2010, 81, .	1.1	40
95	Configurable Electrostatically Doped High Performance Bilayer Graphene Tunnel FET. IEEE Journal of the Electron Devices Society, 2016, 4, 124-128.	1.2	40
96	Quantum transport with spin dephasing: A nonequlibrium Greenâ€™s function approach. Physical Review B, 2007, 76, .	1.1	38
97	Rate equations from the Keldysh formalism applied to the phonon peak in resonant-tunneling diodes. Physical Review B, 1993, 47, 6427-6438.	1.1	37
98	Interface roughness, polar optical phonons, and the valley current of a resonant tunneling diode. Superlattices and Microstructures, 1996, 20, 279-285.	1.4	37
99	Role of interface roughness scattering in self-consistent resonant-tunneling-diode simulations. Physical Review B, 1998, 58, 7279-7285.	1.1	37
100	Spinâ€“orbit splittings in Si/SiGe quantum wells: from ideal Si membranes to realistic heterostructures. New Journal of Physics, 2011, 13, 013009.	1.2	37
101	Scaling Theory of Electrically Doped 2D Transistors. IEEE Electron Device Letters, 2015, 36, 726-728.	2.2	36
102	Coupled Mode Space Approach for the Simulation of Realistic Carbon Nanotube Field-Effect Transistors. IEEE Nanotechnology Magazine, 2007, 6, 475-480.	1.1	35
103	Accurate six-band nearest-neighbor tight-binding model for the Ï€-bands of bulk graphene and graphene nanoribbons. Journal of Applied Physics, 2011, 109, 104304.	1.1	35
104	Probing scattering mechanisms with symmetric quantum cascade lasers. Optics Express, 2013, 21, 7209.	1.7	35
105	Design Guidelines for Sub-12 nm Nanowire MOSFETs. IEEE Nanotechnology Magazine, 2015, 14, 210-213.	1.1	35
106	Design and discovery of materials guided by theory and computation. Npj Computational Materials, 2015, 1, .	3.5	33
107	Structures and energetics of silicon nanotubes from molecular dynamics and density functional theory. Physical Review B, 2008, 78, .	1.1	32
108	Engineered valley-orbit splittings in quantum-confined nanostructures in silicon. Physical Review B, 2011, 83, .	1.1	32

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109	Dramatic Impact of Dimensionality on the Electrostatics of P-N Junctions and Its Sensing and Switching Applications. IEEE Nanotechnology Magazine, 2018, 17, 293-298.	1.1	32
110	Full band modeling of the excess current in a delta-doped silicon tunnel diode. Journal of Applied Physics, 2003, 94, 5005.	1.1	31
111	Hub-based Simulation and Graphics Hardware Accelerated Visualization for Nanotechnology Applications. IEEE Transactions on Visualization and Computer Graphics, 2006, 12, 1061-1068.	2.9	31
112	Modeling and simulation of field-effect biosensors (BioFETs) and their deployment on the nanoHUB. Journal of Physics: Conference Series, 2008, 107, 012004.	0.3	30
113	Cyber-Enabled Simulations in Nanoscale Science and Engineering. Computing in Science and Engineering, 2010, 12, 12-17.	1.2	30
114	On the bandstructure velocity and ballistic current of ultra-narrow silicon nanowire transistors as a function of cross section size, orientation, and bias. Journal of Applied Physics, 2010, 107, .	1.1	30
115	Can Homojunction Tunnel FETs Scale Below 10 nm?. IEEE Electron Device Letters, 2016, 37, 115-118.	2.2	30
116	Interactions of Fano resonances in the transmission of an Aharonov-Bohm ring with two embedded quantum dots in the presence of a magnetic field. Physical Review B, 2005, 72, .	1.1	29
117	Influence of vacancies on metallic nanotube transport properties. Applied Physics Letters, 2007, 90, 182119.	1.5	29
118	Experimental and theoretical study of polarization-dependent optical transitions in InAs quantum dots at telecommunication-wavelengths (1300-1500 nm). Journal of Applied Physics, 2011, 109, .	1.1	29
119	Noninvasive Spatial Metrology of Single-Atom Devices. Nano Letters, 2013, 13, 1903-1909.	4.5	29
120	Switching Mechanism and the Scalability of Vertical-TFETs. IEEE Transactions on Electron Devices, 2018, 65, 3065-3068.	1.6	29
121	Quantitative excited state spectroscopy of a single InGaAs quantum dot molecule through multi-million-atom electronic structure calculations. Nanotechnology, 2011, 22, 315709.	1.3	28
122	Giant quasiparticle bandgap modulation in graphene nanoribbons supported on weakly interacting surfaces. Applied Physics Letters, 2013, 103, .	1.5	28
123	Atomistic modeling of metallic nanowires in silicon. Nanoscale, 2013, 5, 8666.	2.8	28
124	Effect of Diameter Variation on Electrical Characteristics of Schottky Barrier Indium Arsenide Nanowire Field-Effect Transistors. ACS Nano, 2014, 8, 6281-6287.	7.3	28
125	From Fowlerâ€“Nordheim to Nonequilibrium Greenâ€™s Function Modeling of Tunneling. IEEE Transactions on Electron Devices, 2016, 63, 2871-2878.	1.6	28
126	Atomistic simulations of adiabatic coherent electron transport in triple donor systems. Physical Review B, 2009, 80, .	1.1	27

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127	Design principles for HgTe based topological insulator devices. Journal of Applied Physics, 2013, 114, .	1.1	27
128	Spin-Lattice Relaxation Times of Single Donors and Donor Clusters in Silicon. Physical Review Letters, 2014, 113, 246406.	2.9	27
129	Quantum Transport with Band-Structure and Schottky Contacts. Physica Status Solidi (B): Basic Research, 1997, 204, 354-357.	0.7	26
130	Design Space for Low Sensitivity to Size Variations in [110] PMOS Nanowire Devices: The Implications of Anisotropy in the Quantization Mass. Nano Letters, 2009, 9, 623-630.	4.5	26
131	Current density and continuity in discretized models. European Journal of Physics, 2010, 31, 1077-1087.	0.3	26
132	Electric field reduced charging energies and two-electron bound excited states of single donors in silicon. Physical Review B, 2011, 84, .	1.1	26
133	A predictive analytic model for high-performance tunneling field-effect transistors approaching non-equilibrium Green's function simulations. Journal of Applied Physics, 2015, 118, .	1.1	26
134	Room-Temperature Graphene-Nanoribbon Tunneling Field-Effect Transistors. Npj 2D Materials and Applications, 2019, 3, .	3.9	26
135	Multimillion Atom Simulations with Nemo3D. , 2009, , 5745-5783.		26
136	Strong wavevector dependence of hole transport in heterostructures. Superlattices and Microstructures, 2001, 29, 187-216.	1.4	25
137	Evolutionary computation technologies for space systems. , 2005, , .		25
138	Effect of electron-nuclear spin interactions for electron-spin qubits localized in InGaAs self-assembled quantum dots. Journal of Applied Physics, 2005, 97, 043706.	1.1	25
139	Enhanced valence force field model for the lattice properties of gallium arsenide. Physical Review B, 2011, 84, .	1.1	25
140	Atomistic approach to alloy scattering in Si1â^'xGex. Applied Physics Letters, 2011, 98, .	1.5	25
141	Learning and research in the cloud. Nature Nanotechnology, 2013, 8, 786-789.	15.6	25
142	The Electronic Structure and Transmission Characteristics of Disordered AlGaAs Nanowires. IEEE Nanotechnology Magazine, 2007, 6, 43-47.	1.1	24
143	Valley splitting in Si quantum dots embedded in SiGe. Applied Physics Letters, 2008, 93, 112102.	1.5	24
144	Indirectly pumped 37 THz InGaAs/InAlAs quantum-cascade lasers grown by metal-organic vapor-phase epitaxy. Optics Express, 2012, 20, 20647.	1.7	24

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145	Empirical tight binding parameters for GaAs and MgO with explicit basis through DFT mapping. Journal of Computational Electronics, 2013, 12, 56-60.	1.3	24
146	MoS₂ for Enhanced Electrical Performance of Ultrathin Copper Films. ACS Applied Materials & Interfaces, 2019, 11, 28345-28351.	4.0	24
147	Resonant-tunneling diodes with emitter prewells. Applied Physics Letters, 1999, 75, 1302-1304.	1.5	23
148	Valence-band warping in tight-binding models. Physical Review B, 1999, 59, 7301-7304.	1.1	23
149	Full band atomistic modeling of homo-junction InGaAs band-to-band tunneling diodes including band gap narrowing. Applied Physics Letters, 2012, 100, 063504.	1.5	23
150	Simulation Study of Thin-Body Ballistic n-MOSFETs Involving Transport in Mixed $Gamma$-L Valleys. IEEE Electron Device Letters, 2013, 34, 1196-1198.	2.2	23
151	Limits to Metallic Conduction in Atomic-Scale Quasi-One-Dimensional Silicon Wires. Physical Review Letters, 2014, 113, 246802.	2.9	23
152	Grain-Boundary Resistance in Copper Interconnects: From an Atomistic Model to a Neural Network. Physical Review Applied, 2018, 9, .	1.5	23
153	WSe₂ Homojunction Devices: Electrostatically Configurable as Diodes, MOSFETs, and Tunnel FETs for Reconfigurable Computing. Small, 2019, 15, e1902770.	5.2	23
154	Lifetime-Enhanced Transport in Silicon due to Spin and Valley Blockade. Physical Review Letters, 2011, 107, 136602.	2.9	22
155	BÃ¼ttiker probes for dissipative phonon quantum transport in semiconductor nanostructures. Applied Physics Letters, 2016, 108, .	1.5	22
156	High-Current Tunneling FETs With (110) Orientation and a Channel Heterojunction. IEEE Electron Device Letters, 2016, 37, 345-348.	2.2	22
157	Full-band and atomistic simulation of realistic 40 nm InAs HEMT. , 2008, , .		21
158	On the Validity of the Top of the Barrier Quantum Transport Model for Ballistic Nanowire MOSFETs. , 2009, , .		21
159	Performance Prediction of Ultrascaled SiGe/Si Core/Shell Electron and Hole Nanowire MOSFETs. IEEE Electron Device Letters, 2010, 31, 278-280.	2.2	21
160	Design Rules for High Performance Tunnel Transistors From 2-D Materials. IEEE Journal of the Electron Devices Society, 2016, 4, 260-265.	1.2	21
161	Control of interlayer physics in 2H transition metal dichalcogenides. Journal of Applied Physics, 2017, 122, .	1.1	21
162	Mechanical modeling of fretting cycles in electrical contacts. Wear, 2001, 249, 12-19.	1.5	20

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163	Coherent electron transport by adiabatic passage in an imperfect donor chain. Physical Review B, 2010, 82, .	1.1	20
164	The polarization response in InAs quantum dots: theoretical correlation between composition and electronic properties. Nanotechnology, 2012, 23, 165202.	1.3	20
165	Design and Simulation of GaSb/InAs 2D Transmission-Enhanced Tunneling FETs. IEEE Electron Device Letters, 2016, 37, 107-110.	2.2	20
166	Scalable GaSb/InAs Tunnel FETs With Nonuniform Body Thickness. IEEE Transactions on Electron Devices, 2017, 64, 96-101.	1.6	20
167	Valley splitting in V-shaped quantum wells. Journal of Applied Physics, 2005, 97, 113702.	1.1	19
168	Performance analysis of ultra-scaled InAs HEMTs. , 2009, , .		19
169	Distributed non-equilibrium Greenâ€™s function algorithms for the simulation of nanoelectronic devices with scattering. Journal of Applied Physics, 2011, 110, 043713.	1.1	19
170	Brillouin zone unfolding method for effective phonon spectra. Physical Review B, 2014, 90, .	1.1	19
171	Transport of spin qubits with donor chains under realistic experimental conditions. Physical Review B, 2016, 94, .	1.1	19
172	Incoherent transport in NEMO5: realistic and efficient scattering on phonons. Journal of Computational Electronics, 2016, 15, 1123-1129.	1.3	19
173	Sensitivity Challenge of Steep Transistors. IEEE Transactions on Electron Devices, 2018, 65, 1633-1639.	1.6	19
174	Band-tail Formation and Band-gap Narrowing Driven by Polar Optical Phonons and Charged Impurities in Atomically Resolved III-V Semiconductors and Nanodevices. Physical Review Applied, 2019, 12, .	1.5	19
175	Quantum and Semi-Classical Transport in NEMO 1-D. Journal of Computational Electronics, 2003, 2, 177-182.	1.3	18
176	Strain effects in large-scale atomistic quantum dot simulations. Physica Status Solidi (B): Basic Research, 2003, 239, 71-79.	0.7	18
177	Conduction-band tight-binding description for Si applied to P donors. Physical Review B, 2005, 72, .	1.1	18
178	Multiband transmission calculations for nanowires using an optimized renormalization method. Physical Review B, 2008, 77, .	1.1	18
179	Intrinsic Reliability Improvement in Biaxially Strained SiGe p-MOSFETs. IEEE Electron Device Letters, 2011, 32, 255-257.	2.2	18
180	Effects of interface disorder on valley splitting in SiGe/Si/SiGe quantum wells. Applied Physics Letters, 2012, 100, .	1.5	18

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181	Design, fabrication, and analysis of p-channel arsenide/antimonide hetero-junction tunnel transistors. Journal of Applied Physics, 2014, 115, .	1.1	18
182	Quantitative Multiâ€Scale, Multiâ€Physics Quantum Transport Modeling of GaNâ€Based Light Emitting Diodes. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1700662.	0.8	18
183	Two-electron states of a group-V donor in silicon from atomistic full configuration interactions. Physical Review B, 2018, 97, .	1.1	18
184	Generation and intensity-correlation measurements of the real Gaussian field. Physical Review A, 1990, 41, 6376-6384.	1.0	17
185	Elastic and inelastic scattering in quantum dots in the Coulomb-blockade regime. Physical Review B, 1994, 50, 5484-5496.	1.1	17
186	Non-equilibrium Greenâ€™s function (NEGF) simulation of metallic carbon nanotubes including vacancy defects. Journal of Computational Electronics, 2007, 6, 317-320.	1.3	17
187	Valley splitting in finite barrier quantum wells. Physical Review B, 2008, 77, .	1.1	17
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