

Gerhard Klimeck

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/1018878/publications.pdf>

Version: 2024-02-01

464
papers

15,490
citations

23500

58
h-index

24915

109
g-index

473
all docs

473
docs citations

473
times ranked

9679
citing authors

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

#	ARTICLE	IF	CITATIONS
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

#	ARTICLE	IF	CITATIONS
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-D 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 2° 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	sp ^{3s} *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

#	ARTICLE	IF	CITATIONS
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 III-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 $\langle \text{Si} \rangle$ $\langle \text{Ge} \rangle$ tight-binding parameterization. Physical Review B, 2007, 76, .	1.1	67
60	Saving Moore's Law Down To 1-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 III-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: from zinc-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

#	ARTICLE	IF	CITATIONS
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 Schrödinger 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 Spin Qubit. Physical Review Letters, 2014, 113, 246801.	2.9	47
82	Engineering Nanowire n-MOSFETs at the Nanoscale. 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 g-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-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

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

#	ARTICLE	IF	CITATIONS
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 Fowler-Nordheim to Nonequilibrium Green's Functions 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

#	ARTICLE	IF	CITATIONS
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 Si _{1-x} Ge _x . 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

#	ARTICLE	IF	CITATIONS
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	MoS ₂ 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 Γ -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	WSe ₂ 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	B $\frac{1}{4}$ ttiker 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

#	ARTICLE	IF	CITATIONS
163	Coherent electron transport by adiabatic passage in an imperfect donor chain. <i>Physical Review B</i> , 2010, 82, .	1.1	20
164	The polarization response in InAs quantum dots: theoretical correlation between composition and electronic properties. <i>Nanotechnology</i> , 2012, 23, 165202.	1.3	20
165	Design and Simulation of GaSb/InAs 2D Transmission-Enhanced Tunneling FETs. <i>IEEE Electron Device Letters</i> , 2016, 37, 107-110.	2.2	20
166	Scalable GaSb/InAs Tunnel FETs With Nonuniform Body Thickness. <i>IEEE Transactions on Electron Devices</i> , 2017, 64, 96-101.	1.6	20
167	Valley splitting in V-shaped quantum wells. <i>Journal of Applied Physics</i> , 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. <i>Journal of Applied Physics</i> , 2011, 110, 043713.	1.1	19
170	Brillouin zone unfolding method for effective phonon spectra. <i>Physical Review B</i> , 2014, 90, .	1.1	19
171	Transport of spin qubits with donor chains under realistic experimental conditions. <i>Physical Review B</i> , 2016, 94, .	1.1	19
172	Incoherent transport in NEMO5: realistic and efficient scattering on phonons. <i>Journal of Computational Electronics</i> , 2016, 15, 1123-1129.	1.3	19
173	Sensitivity Challenge of Steep Transistors. <i>IEEE Transactions on Electron Devices</i> , 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. <i>Physical Review Applied</i> , 2019, 12, .	1.5	19
175	Quantum and Semi-Classical Transport in NEMO 1-D. <i>Journal of Computational Electronics</i> , 2003, 2, 177-182.	1.3	18
176	Strain effects in large-scale atomistic quantum dot simulations. <i>Physica Status Solidi (B): Basic Research</i> , 2003, 239, 71-79.	0.7	18
177	Conduction-band tight-binding description for Si applied to P donors. <i>Physical Review B</i> , 2005, 72, .	1.1	18
178	Multiband transmission calculations for nanowires using an optimized renormalization method. <i>Physical Review B</i> , 2008, 77, .	1.1	18
179	Intrinsic Reliability Improvement in Biaxially Strained SiGe p-MOSFETs. <i>IEEE Electron Device Letters</i> , 2011, 32, 255-257.	2.2	18
180	Effects of interface disorder on valley splitting in SiGe/Si/SiGe quantum wells. <i>Applied Physics Letters</i> , 2012, 100, .	1.5	18

#	ARTICLE	IF	CITATIONS
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 Multi-Scale, Multi-Physics Quantum Transport Modeling of GaN-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 Green'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
188	Advancing nanoelectronic device modeling through peta-scale computing and deployment on nanoHUB. Journal of Physics: Conference Series, 2009, 180, 012075.	0.3	17
189	Strain and electric field control of hyperfine interactions for donor spin qubits in silicon. Physical Review B, 2015, 91, .	1.1	17
190	Characterizing Si:P quantum dot qubits with spin resonance techniques. Scientific Reports, 2016, 6, 31830.	1.6	17
191	Rate equations for the phonon peak in resonant-tunneling structures. Physical Review B, 1993, 48, 15132-15137.	1.1	16
192	Atomistic Modeling of Realistically Extended Semiconductor Devices with NEMO and OMEN. Computing in Science and Engineering, 2010, 12, 28-35.	1.2	16
193	Multiscale Metrology and Optimization of Ultra-Scaled InAs Quantum Well FETs. IEEE Transactions on Electron Devices, 2011, 58, 1963-1971.	1.6	16
194	Donor hyperfine Stark shift and the role of central-cell corrections in tight-binding theory. Journal of Physics Condensed Matter, 2015, 27, 154207.	0.7	16
195	Alloy Engineered Nitride Tunneling Field-Effect Transistor: A Solution for the Challenge of Heterojunction TFETs. IEEE Transactions on Electron Devices, 2019, 66, 736-742.	1.6	16
196	Atomistic non-equilibrium Green's function simulations of Graphene nano-ribbons in the quantum hall regime. Journal of Computational Electronics, 2008, 7, 407-410.	1.3	15
197	OMEN an Atomistic and Full-Band Quantum Transport Simulator for post-CMOS Nanodevices. , 2008, , .		15
198	Interface-induced heavy-hole/light-hole splitting of acceptors in silicon. Applied Physics Letters, 2015, 106, .	1.5	15

#	ARTICLE	IF	CITATIONS
199	Resolution of Resonances in a General Purpose Quantum Device Simulator (NEMO). VLSI Design, 1998, 6, 107-110.	0.5	14
200	Off-zone-center or indirect band-gap-like hole transport in heterostructures. Physical Review B, 2001, 63, .	1.1	14
201	Bandstructure effects in ballistic nanoscale MOSFETs. , 0, , .		14
202	In-surface confinement of topological insulator nanowire surface states. Applied Physics Letters, 2015, 107, 121605.	1.5	14
203	A Tight-Binding Study of Single-Atom Transistors. Small, 2015, 11, 374-381.	5.2	14
204	P-Type Tunnel FETs With Triple Heterojunctions. IEEE Journal of the Electron Devices Society, 2016, 4, 410-415.	1.2	14
205	Numerical guidelines for setting up a k.p simulator with applications to quantum dot heterostructures and topological insulators. Journal of Computational Electronics, 2016, 15, 115-128.	1.3	14
206	Combination of Equilibrium and Nonequilibrium Carrier Statistics Into an Atomistic Quantum Transport Model for Tunneling Heterojunctions. IEEE Transactions on Electron Devices, 2017, 64, 2512-2518.	1.6	14
207	A Multiscale Modeling of Triple-Heterojunction Tunneling FETs. IEEE Transactions on Electron Devices, 2017, 64, 2728-2735.	1.6	14
208	NEMO: general release of a new comprehensive quantum device simulator. , 1997, , .		13
209	Interface roughness and polar optical phonon scattering in RTDs. Semiconductor Science and Technology, 1998, 13, A163-A164.	1.0	13
210	An atomistic model for the simulation of acoustic phonons, strain distribution, and Gr $\frac{1}{4}$ neisen coefficients in zinc-blende semiconductors. Superlattices and Microstructures, 2003, 34, 553-556.	1.4	13
211	Disorder induced broadening in multimillion atom alloyed quantum dot systems. Physica Status Solidi C: Current Topics in Solid State Physics, 2003, 0, 1149-1152.	0.8	13
212	Atomistic simulations of long-range strain and spatial asymmetry molecular states of seven quantum dots. Journal of Physics: Conference Series, 2006, 38, 75-78.	0.3	13
213	Atomistic study of electronic structure of PbSe nanowires. Applied Physics Letters, 2011, 98, 212105.	1.5	13
214	Transistor roadmap projection using predictive full-band atomistic modeling. Applied Physics Letters, 2014, 105, 083508.	1.5	13
215	Universal Behavior of Atomistic Strain in Self-Assembled Quantum Dots. IEEE Journal of Quantum Electronics, 2016, 52, 1-8.	1.0	13
216	Channel Thickness Optimization for Ultrathin and 2-D Chemically Doped TFETs. IEEE Transactions on Electron Devices, 2018, 65, 4614-4621.	1.6	13

#	ARTICLE	IF	CITATIONS
217	Superior Performance of 5-nm Gate Length GaN Nanowire nFET for Digital Logic Applications. IEEE Electron Device Letters, 2019, 40, 874-877.	2.2	13
218	Impact of Body Thickness and Scattering on III-V Triple Heterojunction TFET Modeled With Atomistic Mode-Space Approximation. IEEE Transactions on Electron Devices, 2020, 67, 3478-3485.	1.6	13
219	Electronic structure and transmission characteristics of SiGe nanowires. Journal of Computational Electronics, 2008, 7, 350-354.	1.3	12
220	nanoHUB.org - Online Simulation and More Materials for Semiconductors and Nanoelectronics in Education and Research. , 2008, , .		12
221	Non-primitive rectangular cells for tight-binding electronic structure calculations. Physica E: Low-Dimensional Systems and Nanostructures, 2009, 41, 490-494.	1.3	12
222	Stark tuning of the charge states of a two-donor molecule in silicon. Nanotechnology, 2011, 22, 225202.	1.3	12
223	Design of three-well indirect pumping terahertz quantum cascade lasers for high optical gain based on nonequilibrium Green's function analysis. Applied Physics Letters, 2012, 100, .	1.5	12
224	An environment-dependent semi-empirical tight binding model suitable for electron transport in bulk metals, metal alloys, metallic interfaces, and metallic nanostructures. I. Model and validation. Journal of Applied Physics, 2014, 115, 123703.	1.1	12
225	Tunneling and Short Channel Effects in Ultrascaled InGaAs Double Gate MOSFETs. IEEE Transactions on Electron Devices, 2015, 62, 525-531.	1.6	12
226	Evolution time and energy uncertainty. European Journal of Physics, 2007, 28, 673-678.	0.3	11
227	Mapping Donor Electron Wave Function Deformations at a Sub-Bohr Orbit Resolution. Physical Review Letters, 2009, 103, 106802.	2.9	11
228	Million Atom Electronic Structure and Device Calculations on Peta-Scale Computers. , 2009, , .		11
229	Investigation of In _x Ga _{1-x} As Ultra-Thin-Body Tunneling FETs Using a Full-Band and Atomistic Approach. , 2009, , .		11
230	Low rank approximation method for efficient Green's function calculation of dissipative quantum transport. Journal of Applied Physics, 2013, 113, 213707.	1.1	11
231	Quantum Transport in AlGaSb/InAs TFETs With Gate Field In-Line With Tunneling Direction. IEEE Transactions on Electron Devices, 2015, 62, 2445-2449.	1.6	11
232	Creating impact in the digital space: digital practice dependency in communities of digital scientific innovations. Scientometrics, 2017, 110, 417-442.	1.6	11
233	Robust mode space approach for atomistic modeling of realistically large nanowire transistors. Journal of Applied Physics, 2018, 123, .	1.1	11
234	Thermal boundary resistance predictions with non-equilibrium Green's function and molecular dynamics simulations. Applied Physics Letters, 2019, 115, .	1.5	11

#	ARTICLE	IF	CITATIONS
235	3-D atomistic nanoelectronic modeling on high performance clusters: multimillion atom simulations. Superlattices and Microstructures, 2002, 31, 171-179.	1.4	10
236	Title is missing!. Journal of Computational Electronics, 2002, 1, 317-321.	1.3	10
237	Atomistic Approach for Nanoscale Devices at the Scaling Limit and Beyondâ€“ Valley Splitting in Si. Japanese Journal of Applied Physics, 2005, 44, 2187-2190.	0.8	10
238	The discretized SchrÃ¶dinger equation for the finite square well and its relationship to solid-state physics. European Journal of Physics, 2005, 26, 865-881.	0.3	10
239	The NCN: Science, Simulation, and Cyber Services. , 0, , .		10
240	Allowed wavevectors under the application of incommensurate periodic boundary conditions. European Journal of Physics, 2006, 27, 5-10.	0.3	10
241	Characterization and Modeling of Subfemtofarad Nanowire Capacitance Using the CBCM Technique. IEEE Electron Device Letters, 2009, 30, 526-528.	2.2	10
242	Numerical strategies towards peta-scale simulations of nanoelectronics devices. Parallel Computing, 2010, 36, 117-128.	1.3	10
243	Thermionic Emission as a Tool to Study Transport in Undoped nFinFETs. IEEE Electron Device Letters, 2010, 31, 150-152.	2.2	10
244	Interface Trap Density Metrology of State-of-the-Art Undoped Si n-FinFETs. IEEE Electron Device Letters, 2011, 32, 440-442.	2.2	10
245	Does the low hole transport mass in $\sim 110\%$ and $\sim 111\%$ Si nanowires lead to mobility enhancements at high field and stress: A self-consistent tight-binding study. Journal of Applied Physics, 2012, 111, .	1.9	10
246	Utilizing the Unique Properties of Nanowire MOSFETs for RF Applications. Nano Letters, 2013, 13, 1549-1554.	4.5	10
247	Electron transport in nano-scaled piezoelectronic devices. Applied Physics Letters, 2013, 102, 193501.	1.5	10
248	Anisotropic strain in SmSe and SmTe: Implications for electronic transport. Physical Review B, 2014, 90, .	1.1	10
249	Optimization of edge state velocity in the integer quantum Hall regime. Physical Review B, 2018, 97, .	1.1	10
250	Electrical and physical modeling of contact defects due to fretting. IEEE Transactions on Components and Packaging Technologies, 1994, 17, 134-140.	0.7	9
251	Atomistic Simulation of Non-Degeneracy and Optical Polarization Anisotropy in Pyramidal Quantum Dots. , 2007, , .		9
252	Shape and orientation effects on the ballistic phonon thermal properties of ultra-scaled Si nanowires. Journal of Applied Physics, 2011, 110, .	1.1	9

#	ARTICLE	IF	CITATIONS
253	Subband engineering for p-type silicon ultra-thin layers for increased carrier velocities: An atomistic analysis. Journal of Applied Physics, 2011, 109, 053721.	1.1	9
254	Atomistic nanoelectronic device engineering with sustained performances up to 1.44 PFlop/s. , 2011, , .		9
255	Feasibility, accuracy, and performance of contact block reduction method for multi-band simulations of ballistic quantum transport. Journal of Applied Physics, 2012, 111, 063705.	1.1	9
256	Observation of 1D Behavior in Si Nanowires: Toward High-Performance TFETs. Nano Letters, 2012, 12, 5571-5575.	4.5	9
257	Electrically doped 2D material tunnel transistor. , 2015, , .		9
258	Achieving a higher performance in bilayer graphene FET - strain engineering. , 2015, , .		9
259	Doping Profile Engineered Triple Heterojunction TFETs With 12-nm Body Thickness. IEEE Transactions on Electron Devices, 2021, 68, 3104-3111.	1.6	9
260	The Effects of Electron Screening Length and Emitter Quasi-Bound States on the Polar-Optical Phonon Scattering in Resonant Tunneling Diodes. Physica Status Solidi (B): Basic Research, 1997, 204, 408-411.	0.7	8
261	Evolutionary Computation Technologies for the Automated Design of Space Systems. , 0, , .		8
262	Non-equilibrium Green's functions method: Non-trivial and disordered leads. Applied Physics Letters, 2014, 105, 213502.	1.5	8
263	An environment-dependent semi-empirical tight binding model suitable for electron transport in bulk metals, metal alloys, metallic interfaces, and metallic nanostructures. II. Applicationâ€”Effect of quantum confinement and homogeneous strain on Cu conductance. Journal of Applied Physics, 2014, 115, 123704.	1.1	8
264	Surface Passivation in Empirical Tight Binding. IEEE Transactions on Electron Devices, 2016, 63, 954-958.	1.6	8
265	Ultrafast characteristics of InGaP-InGaAlP laser amplifiers. IEEE Journal of Quantum Electronics, 1996, 32, 664-669.	1.0	7
266	Parallelization of the Nanoelectronic Modeling Tool (NEMO 1-D) on a Beowulf Cluster. Journal of Computational Electronics, 2002, 1, 75-79.	1.3	7
267	Smooth Quantum Hydrodynamic Model vs. NEMO Simulation of Resonant Tunneling Diodes. Journal of Computational Electronics, 2004, 3, 95-102.	1.3	7
268	Eigenvalue solvers for atomistic simulations of electronic structures with NEMO-3D. Journal of Computational Electronics, 2008, 7, 297-300.	1.3	7
269	Valley degeneracies in (111) silicon quantum wells. Applied Physics Letters, 2009, 94, .	1.5	7
270	Quantum approach to electronic noise calculations in the presence of electron-phonon interactions. Physical Review B, 2010, 82, .	1.1	7

#	ARTICLE	IF	CITATIONS
271	Single layer MoS ₂ band structure and transport. , 2011, , .		7
272	Strain effects on the phonon thermal properties of ultra-scaled Si nanowires. Applied Physics Letters, 2011, 99, 083115.	1.5	7
273	Influence of cross-section geometry and wire orientation on the phonon shifts in ultra-scaled Si nanowires. Journal of Applied Physics, 2011, 110, .	1.1	7
274	A two-dimensional domain decomposition technique for the simulation of quantum-scale devices. Journal of Computational Physics, 2012, 231, 1293-1313.	1.9	7
275	The influence of proximity induced ferromagnetism, superconductivity and Fermi-velocity on evolution of Berry phase in Bi ₂ Se ₃ topological insulator. Semiconductor Science and Technology, 2015, 30, 045004.	1.0	7
276	A tunnel FET design for high-current, 120 mV operation. , 2016, , .		7
277	Extremely high simulated ballistic currents in triple-heterojunction tunnel transistors. , 2016, , .		7
278	Transport in vertically stacked hetero-structures from 2D materials. Journal of Physics: Conference Series, 2017, 864, 012053.	0.3	7
279	Non-orthogonal tight-binding models: Problems and possible remedies for realistic nano-scale devices. Journal of Applied Physics, 2019, 125, .	1.1	7
280	VolQD: Direct Volume Rendering of Multi-million Atom Quantum Dot Simulations. , 0, , .		7
281	Quantum kinetic analysis of mesoscopic systems: Linear response. Superlattices and Microstructures, 1992, 11, 137-140.	1.4	6
282	Mechanical modeling of fretting cycles of electrical contacts. , 0, , .		6
283	Writing Research Software in a Large Group for the NEMO Project. VLSI Design, 1998, 8, 79-86.	0.5	6
284	Evolutionary computing for spacecraft power subsystem design search and optimization. , 0, , .		6
285	Full-band and atomistic simulation of n- and p-doped double-gate MOSFETs for the 22nm technology node. , 2008, , .		6
286	From NEMO1D and NEMO3D to OMEN: Moving towards atomistic 3-D quantum transport in nano-scale semiconductors. , 2008, , .		6
287	Transport-based dopant metrology in advanced FinFETs. , 2008, , .		6
288	Design Guidelines for True Green LEDs and High Efficiency Photovoltaics Using ZnSe/GaAs Digital Alloys. Electrochemical and Solid-State Letters, 2010, 13, H5.	2.2	6

#	ARTICLE	IF	CITATIONS
289	Phonon-limited mobility and injection velocity in n- and p-doped ultrascaled nanowire field-effect transistors with different crystal orientations. , 2010, , .		6
290	Social Networks of Researchers and Educators on nanoHUB.org. , 2011, , .		6
291	Practical Considerations in Cloud Utilization for the Science Gateway nanoHUB.org. , 2011, , .		6
292	Interface trap density metrology from sub-threshold transport in highly scaled undoped Si n-FinFETs. Journal of Applied Physics, 2011, 110, 124507.	1.1	6
293	Multiband tight-binding model for strained and bilayer graphene from DFT calculations. , 2012, , .		6
294	An efficient algorithm to calculate intrinsic thermoelectric parameters based on Landauer approach. Journal of Computational Electronics, 2012, 11, 56-66.	1.3	6
295	Categorizing Users of Cloud Services. Service Science, 2016, 8, 59-70.	0.9	6
296	Explicit screening full band quantum transport model for semiconductor nanodevices. Journal of Applied Physics, 2018, 123, 244501.	1.1	6
297	Atomistic modeling trap-assisted tunneling in hole tunnel field effect transistors. Journal of Applied Physics, 2018, 123, 174504.	1.1	6
298	Self-Consistent Simulations of Nanowire Transistors Using Atomistic Basis Sets. , 2007, , 217-220.		6
299	Laser-bandwidth-induced fluctuations in the intensity transmitted by a Fabry-Pérot interferometer. Physical Review A, 1991, 44, 3222-3228.	1.0	5
300	Experimentally verified quantum device simulations based on multiband models, Hartree self-consistency, and scattering assisted charging. , 0, , .		5
301	Genetically Engineered Nanostructure Devices. Materials Research Society Symposia Proceedings, 1998, 551, 149.	0.1	5
302	A Generalized Tunneling Formula for Quantum Device Modeling. VLSI Design, 1998, 6, 9-12.	0.5	5
303	Off-center electron transport in resonant tunneling diodes due to incoherent scattering. Physical Review B, 2003, 68, .	1.1	5
304	Three-dimensional atomistic simulation of carbon nanotube FETs with realistic geometry. , 0, , .		5
305	Electronic Structure of Si/InAs Composite Channels. Materials Research Society Symposia Proceedings, 2007, 995, 1.	0.1	5
306	Corrections to a three-dimensional simulation study of the performance of carbon nanotube field-effect transistors with doped reservoirs and realistic geometry [Aug 06 1782-1788]. IEEE Transactions on Electron Devices, 2008, 55, 1094-1095.	1.6	5

#	ARTICLE	IF	CITATIONS
307	A Parallel Sparse Linear Solver for Nearest-Neighbor Tight-Binding Problems. Lecture Notes in Computer Science, 2008, , 790-800.	1.0	5
308	Performance limitations of graphene nanoribbon tunneling FETS due to line edge roughness. , 2009, , .		5
309	Tuning lattice thermal conductance by porosity control in ultrascaled Si and Ge nanowires. Applied Physics Letters, 2011, 98, 083106.	1.5	5
310	Role of surface orientation on atomic layer deposited Al ₂ O ₃ /GaAs interface structure and Fermi level pinning: A density functional theory study. Applied Physics Letters, 2011, 99, 093508.	1.5	5
311	A new method to achieve RF linearity in SOI nanowire MOSFETs. , 2011, , .		5
312	Calculation of phonon spectrum and thermal properties in suspended $\text{In}_x\text{Ga}_{1-x}\text{As}$ nanowires. Journal of Computational Electronics, 2012, 11, 22-28.	1.3	5
313	Quantum transport in NEMO5: Algorithm improvements and high performance implementation. , 2014, , .		5
314	Design and Simulation of Two-Dimensional Superlattice Steep Transistors. IEEE Electron Device Letters, 2014, 35, 1212-1214.	2.2	5
315	Computational study of heterojunction graphene nanoribbon tunneling transistors with p-d orbital tight-binding method. Applied Physics Letters, 2014, 104, 243113.	1.5	5
316	Mode space tight binding model for ultra-fast simulations of III-V nanowire MOSFETs and heterojunction TFETs. , 2015, , .		5
317	Proximity induced ferromagnetism, superconductivity, and finite-size effects on the surface states of topological insulator nanostructures. Journal of Applied Physics, 2015, 117, 044304.	1.1	5
318	High-current InP-based triple heterojunction tunnel transistors. , 2016, , .		5
319	Performance degradation of superlattice MOSFETs due to scattering in the contacts. Journal of Applied Physics, 2016, 120, 224501.	1.1	5
320	Unfolding and effective bandstructure calculations as discrete real- and reciprocal-space operations. Physica B: Condensed Matter, 2016, 491, 22-30.	1.3	5
321	Low-temperature thermal transport and thermopower of monolayer transition metal dichalcogenide semiconductors. Journal of Physics Condensed Matter, 2017, 29, 405701.	0.7	5
322	Atomistic Tight-Binding Study of Contact Resistivity in Si/SiGe PMOS Schottky Contacts. IEEE Nanotechnology Magazine, 2018, 17, 968-973.	1.1	5
323	Strain and electronic structure interactions in realistically-scaled quantum dot stacks. AIP Conference Proceedings, 2007, , .	0.3	5
324	Ultralow current density RTDs for tunneling-based SRAM. , 1997, , .		4

#	ARTICLE	IF	CITATIONS
325	Numerical approximations to the treatment of interface roughness scattering in resonant tunnelling diodes. <i>Semiconductor Science and Technology</i> , 1998, 13, A165-A168.	1.0	4
326	NEMO 1-D: the first NEGF-based TCAD tool. , 2004, , 9-12.		4
327	Building semiconductor nanostructures atom by atom. <i>Microelectronics Journal</i> , 2008, 39, 318-326.	1.1	4
328	A multi-level parallel simulation approach to electron transport in nano-scale transistors. , 2008, , .		4
329	Surface and Orientation Dependence on Performance of Trigated Silicon Nanowire pMOSFETs. , 2009, , .		4
330	Strain-engineered self-organized InAs ^x GaAs quantum dots for long wavelength (1.3 μ m ^{1/4} –1.5 μ m ^{1/4}) optical applications. , 2010, , .		4
331	A comprehensive atomistic analysis of bandstructure velocities in si nanowires. , 2010, , .		4
332	Atomistic modeling of the phonon dispersion and lattice properties of free-standing (100) Si nanowires. , 2010, , .		4
333	Optical TCAD on the Net: A tight-binding study of inter-band light transitions in self-assembled InAs/GaAs quantum dot photodetectors. <i>Mathematical and Computer Modelling</i> , 2013, 58, 288-299.	2.0	4
334	Scaling effect on specific contact resistivity in nano-scale metal-semiconductor contacts. , 2013, , .		4
335	Investigation of ripple-limited low-field mobility in large-scale graphene nanoribbons. <i>Applied Physics Letters</i> , 2013, 102, .	1.5	4
336	Atomistic simulation on gate-recessed InAs/GaSb TFETs and performance benchmark. , 2013, , .		4
337	Atomistic simulation of phonon and alloy limited hole mobility in Si _x Ge _{1-x} nanowires. <i>Physica Status Solidi - Rapid Research Letters</i> , 2013, 7, 903-906.	1.2	4
338	Performance degradation due to thicker physical layer of high k oxide in ultra-scaled MOSFETs and mitigation through electrostatics design. , 2014, , .		4
339	Tunneling: The major issue in ultra-scaled MOSFETs. , 2015, , .		4
340	Novel III-N heterostructure devices for low-power logic and more. , 2016, , .		4
341	Quantum Transport Simulation of III-V TFETs with Reduced-Order $\vec{k} \cdot \vec{p}$ Method. , 2016, , 151-180.		4
342	Grain boundary resistance in nanoscale copper interconnections. , 2016, , .		4

#	ARTICLE	IF	CITATIONS
343	Multi-scale, multi-physics NEGF quantum transport for nitride LEDs. , 2016, , .		4
344	A high-current InP-channel triple heterojunction tunnel transistor design. , 2017, , .		4
345	nanoHUB.org: Experiences and Challenges in Software Sustainability for a Large Scientific Community. Journal of Open Research Software, 2014, 2, .	2.7	4
346	Informations- und Kommunikationstechnologien für die Instandhaltungsplanung und -steuerung. , 2009, , 151-161.		4
347	Indirect Bandgap-Like Current Flow in Direct Bandgap Electron Resonant Tunneling Diodes. Physica Status Solidi (B): Basic Research, 2001, 226, 9-19.	0.7	3
348	The impact of the nanoscale vision on the future of learning and teaching. , 2006, , .		3
349	QUANTUM SIMULATIONS OF DUAL GATE MOSFET DEVICES: BUILDING AND DEPLOYING COMMUNITY NANOTECHNOLOGY SOFTWARE TOOLS ON NANOHUB.ORG. International Journal of High Speed Electronics and Systems, 2007, 17, 485-494.	0.3	3
350	Computational nanoelectronics research and education at nanoHUB.org. Journal of Computational Electronics, 2009, 8, 124-131.	1.3	3
351	ABACUS and AQME: Semiconductor Device and Quantum Mechanics Education on nanoHUB.org. , 2009, , .		3
352	A Study of Temperature-dependent Properties of N-type d-doped Si Band-structures in Equilibrium. , 2009, , .		3
353	Adaptive quadrature for sharply spiked integrands. Journal of Computational Electronics, 2010, 9, 252-255.	1.3	3
354	Contact modeling and analysis of InAs HEMT transistors. , 2011, , .		3
355	The nanoelectronic modeling tool NEMO 5: Capabilities, validation, and application to Sb-heterostructures. , 2011, , .		3
356	NanoHUB.org - the ABACUS tool suite as a framework for semiconductor education courses. , 2011, , .		3
357	Effects of interface roughness scattering on radio frequency performance of silicon nanowire transistors. Applied Physics Letters, 2011, 99, .	1.5	3
358	Archimedes, the free Monte Carlo simulator: A GNU package for submicron semiconductor devices on nanoHUB. , 2012, , .		3
359	Spectroscopy of a deterministic single-donor device in silicon. Proceedings of SPIE, 2012, , .	0.8	3
360	More Moore landscape for system readiness - ITRS2.0 requirements. , 2014, , .		3

#	ARTICLE	IF	CITATIONS
361	Optimization of the anharmonic strain model to capture realistic strain distributions in quantum dots. , 2014, , .		3
362	Atomistic quantum transport approach to time-resolved device simulations. , 2015, , .		3
363	General Retarded Contact Self-energies in and beyond the Non-equilibrium Green's Functions Method. Journal of Physics: Conference Series, 2016, 696, 012019.	0.3	3
364	III-N heterostructure devices for low-power logic. , 2017, , .		3
365	Comparison of numerical quantum device models. , 2003, , .		2
366	Building and deploying community nanotechnology software tools on nanoHUB.org - atomistic simulations of multimillion-atom quantum dot nanostructures. , 0, , .		2
367	A Study of Alloyed Nanowires from Two Perspectives: Approximate Dispersion and Transmission. AIP Conference Proceedings, 2007, , .	0.3	2
368	Transport calculation of Semiconductor Nanowires Coupled to Quantum Well Reservoirs. Journal of Computational Electronics, 2007, 6, 199-202.	1.3	2
369	Dimensionality in metal-oxide-semiconductor field-effect transistors: A comparison of one-dimensional and two-dimensional ballistic transistors. Journal of Vacuum Science & Technology B, 2008, 26, 1628.	1.3	2
370	HUB is where the heart is. IEEE Nanotechnology Magazine, 2008, 2, 28-31.	0.9	2
371	Atomistic Understanding of a Single Gated Dopant Atom in a MOSFET. Materials Research Society Symposia Proceedings, 2008, 1067, 1.	0.1	2
372	Quantum Confined Stark Shift and Ground State Optical Transition Rate in [100] Laterally Biased InAs/GaAs Quantum Dots. , 2009, , .		2
373	Dependence of Injection Velocity and Capacitance of Si Nanowires on Diameter, Orientation, and Gate Bias: An Atomistic Tight-Binding Study. , 2009, , .		2
374	Modeling fluctuations in the threshold voltage and ON-current and threshold voltage fluctuation due to random telegraph noise. , 2010, , .		2
375	Performance enhancement of GaAs UTB pFETs by strain, orientation and body thickness engineering. , 2011, , .		2
376	Designing a large scale quantum computer with atomistic simulations. , 2014, , .		2
377	2D tunnel transistors for ultra-low power applications: Promises and challenges. , 2015, , .		2
378	Transistors for VLSI, for wireless: A view forwards through fog. , 2015, , .		2

#	ARTICLE	IF	CITATIONS
379	Exploring channel doping designs for high-performance tunneling FETs. , 2016, , .		2
380	NEMO5: realistic and efficient NEGF simulations of GaN light-emitting diodes. Proceedings of SPIE, 2017, , .	0.8	2
381	Theoretical study of strain-dependent optical absorption in a doped self-assembled InAs/InGaAs/GaAs/AlGaAs quantum dot. Beilstein Journal of Nanotechnology, 2018, 9, 1075-1084.	1.5	2
382	nanoHUB as a Platform for Implementing ICME Simulations in Research and Education. , 2015, , 269-276.		2
383	Interface effects in tunneling models with identical real and complex dispersions. Physical Review B, 1999, 59, 7316-7319.	1.1	1
384	Quantum cascade laser gain medium modeling using a second-nearest-neighbor tight-binding model. Superlattices and Microstructures, 2005, 37, 410-424.	1.4	1
385	Investigation of device parameters for field-effect DNA-sensors by three-dimensional simulation. , 2006, , .		1
386	NanoHUB.org Tutorial: Education Simulation Tools. , 2007, , .		1
387	Symmetry Breaking and Fine Structure Splitting in Zincblende Quantum Dots: Atomistic Simulations of Long-Range Strain and Piezoelectric Field. AIP Conference Proceedings, 2007, , .	0.3	1
388	NEMO-3D based atomistic simulation of a double quantum dot structure for spin-blockaded transport. Journal of Computational Electronics, 2008, 7, 403-406.	1.3	1
389	A Tight Binding Study of Strain-Reduced Confinement Potentials in Identical and Non-Identical InAs/GaAs Vertically Stacked Quantum Dots. , 2008, , .		1
390	Indium gallium arsenide on silicon interband tunnel diodes for NDR-based memory and steep subthreshold slope transistor applications. , 2009, , .		1
391	Atomistic simulations for SiGe pMOS devices — Bandstructure to transport. , 2009, , .		1
392	nanoHUB.org serving over 120,000 users worldwide: It's first cyber-environment assessment. , 2010, , .		1
393	Ballistic hole injection velocity analysis in Ge UTB pMOSFETs: Dependence on body thickness, orientation and strain. , 2011, , .		1
394	Enhancement of thermoelectric efficiency by uniaxial tensile stress in n-type GaAs nanowires. , 2011, , .		1
395	Automated grid probe system to improve end-to-end grid reliability for a science gateway. , 2011, , .		1
396	Publisher's Note: Engineered valley-orbit splittings in quantum-confined nanostructures in silicon [Phys. Rev. B 83, 195323 (2011)]. Physical Review B, 2011, 83, .	1.1	1

#	ARTICLE	IF	CITATIONS
397	Multiscale Modeling of a Quantum Dot Heterostructure. Materials Research Society Symposia Proceedings, 2011, 1370, 47.	0.1	1
398	Network for Computational Nanotechnology - a strategic plan for global knowledge transfer in research and education. , 2011, , .		1
399	Model development for lattice properties of gallium arsenide using parallel genetic algorithm. , 2011, , .		1
400	Design of high-current L-valley GaAs=AlAs$\times 0.56$/math>Sb$\times 0.44$/math>/InP (111) ultra-thin-body nMOSFETs. , 2012, , .		1
401	nanoHUB-U: A science gateway ventures into structured online education. , 2013, , .		1
402	Atomistic simulation of steep subthreshold slope Bi-layer MoS$_2$ transistors. , 2014, , .		1
403	Tunnel transistors. , 2014, , 117-143.		1
404	The evaluation of non-topological components in Berry phase and momentum relaxation time in a gapped 3D topological insulator. Journal of Physics Condensed Matter, 2015, 27, 335505.	0.7	1
405	Electrically doped WTe$_2$ tunnel transistors. , 2015, , .		1
406	Optimal Ge/SiGe nanofin geometries for hole mobility enhancement: Technology limit from atomic simulations. Journal of Applied Physics, 2015, 117, .	1.1	1
407	NEMO5: Predicting MoS$_2$ heterojunctions. , 2016, , .		1
408	Sb- and Al-free ultra-high-current tunnel FET designs. , 2017, , .		1
409	Assessment of Si/SiGe PMOS Schottky contacts through atomistic tight binding simulations: Can we achieve the $10^9 \text{ } \hat{\text{C}}\text{-cm}^2$ target?. , 2017, , .		1
410	NemoViz: a visual interactive system for atomistic simulations design. Visualization in Engineering, 2018, 6, .	8.8	1
411	Microwave-induced capacitance resonances and anomalous magnetoresistance in double quantum wells. Journal of Applied Physics, 2019, 125, .	1.1	1
412	Increasing Contributions in an Online Scientific Community: The Effect of Virtual Rewards, Social Messages and Observation Cues. SSRN Electronic Journal, 0, , .	0.4	1
413	Introduction to Computational Electronics. , 2017, , 1-22.		1
414	Efficient I-V simulation of quantum devices using full bandstructure models. , 0, , .		0

#	ARTICLE	IF	CITATIONS
415	Resonant tunneling in disordered materials such as SiO ₂ /Si/SiO ₂ . , 1997, , .		0
416	Transverse momentum dependence of electron and hole tunneling in a full band tight-binding simulation [resonant tunnelling diodes]. , 0, , .		0
417	Nanoelectronic 3-D (NEMO 3-D) simulation of multimillion atom quantum dot systems. , 0, , .		0
418	Short course IV Nano hub. , 2006, , .		0
419	Nanoelectronics: Metrology and Computation. AIP Conference Proceedings, 2007, , .	0.3	0
420	EnergyDispersion Relations for Holes in Silicon Quantum Wells and Quantum Wires. Journal of Computational Electronics, 2007, 6, 227-230.	1.3	0
421	Determination of the eigenstates and wavefunctions of a single gated As donor. , 2008, , .		0
422	Contact Block Reduction method for ballistic quantum transport with semi-empirical sp ³ d ⁵ s* tight binding band models. , 2008, , .		0
423	Level Spectrum of a Single Gated Arsenic Donor in a Three Terminal Geometry. Materials Research Society Symposia Proceedings, 2008, 1117, 103.	0.1	0
424	Transport spectroscopy of a single atom in a FinFET. Journal of Physics: Conference Series, 2008, 109, 012003.	0.3	0
425	Study of ultra-scaled SiGe/Si core/shell nanowire FETs for CMOS applications. , 2009, , .		0
426	Proposal of ZnSe/GaAs digital alloys for high band gap solar cells and true green LEDs. , 2009, , .		0
427	Sub-threshold study of undoped trigate nFinFET. Thin Solid Films, 2010, 518, 2521-2523.	0.8	0
428	+Level Spectrum Of Single Gated As Donors. , 2010, , .		0
429	Innovative characterization techniques for ultra-scaled FinFETs. , 2010, , .		0
430	Scattering in Si-nanowires — Where does it matter?. , 2010, , .		0
431	Quantum transport in ultra-scaled phosphorous-doped silicon nanowires. , 2010, , .		0
432	Atomistic modeling of the thermoelectric power factor in ultra-scaled Silicon nanowires. , 2010, , .		0

#	ARTICLE	IF	CITATIONS
433	Rough interfaces in THz quantum cascade lasers. , 2010, , .		0
434	Valley degeneracy in (110) Si quantum wells strain and misorientation effects. , 2010, , .		0
435	Fullband Study of Ultra-Scaled Electron and Hole SiGe Nanowire FETs. , 2010, , .		0
436	Effects of interface roughness scattering on RF performance of nanowire transistors. , 2011, , .		0
437	Tuning lattice thermal conductance in ultra-scaled hollow SiNW: Role of porosity size, density and distribution. Materials Research Society Symposia Proceedings, 2011, 1329, 1.	0.1	0
438	Computational Study of the Electronic Performance of Cross-Plane Superlattice Peltier Devices. Materials Research Society Symposia Proceedings, 2011, 1314, 1.	0.1	0
439	Current density and continuity in discretized models. European Journal of Physics, 2011, 32, 631-631.	0.3	0
440	Full-band study of ultra-thin Si:P nanowires. , 2012, , .		0
441	A tight-binding study of channel modulation in atomic-scale Si:P nanowires. , 2013, , .		0
442	Quantum corrected drift-diffusion simulation for prediction of CMOS scaling. , 2013, , .		0
443	Silicon at the fundamental scaling limit-atomic-scale donor-based quantum electronics. , 2014, , .		0
444	Statistical modeling of ultra-scaled donor-based silicon phosphorus devices. , 2014, , .		0
445	Nanohub as a Platform for Implementing ICME Simulations in Research and Education. , 2015, , 269-276.		0
446	Interactive Analytic Systems for Understanding the Scholarly Impact of Large-Scale E-science Cyberenvironments. , 2015, , .		0
447	Quantum dot lab: an online platform for quantum dot simulations. , 2015, , .		0
448	Finite difference schemes for $k \cdot p$ models: A comparative study. , 2015, , .		0
449	nanoHUB.org: A Gateway to Undergraduate Simulation-Based Research in Materials Science and Related Fields. Materials Research Society Symposia Proceedings, 2015, 1762, 7.	0.1	0
450	Engineering the optical transitions of self-assembled quantum dots. , 2015, , .		0

#	ARTICLE	IF	CITATIONS
451	Multiscale transport simulation of nanoelectronic devices with NEMO5. , 2016, , .		0
452	Insights from simple models for surface states in nanostructures. European Journal of Physics, 2017, 38, 025501.	0.3	0
453	Particle-Based Device Simulation Methods. , 2017, , 241-334.		0
454	Quantum Corrections to Semiclassical Approaches. , 2017, , 367-444.		0
455	Quantum Transport in Semiconductor Systems. , 2017, , 445-492.		0
456	Surface and Grain-boundary Effects in Copper interconnects Thin Films Modeling with an Atomistic Basis. , 2018, , .		0
457	Electron-only explicit screening quantum transport model for semiconductor nanodevices. , 2018, , .		0
458	Design Guidelines and Limitations of Multilayer Two-dimensional Vertical Tunneling FETs for UltraLow Power Logic Applications. , 2018, , .		0
459	nanoHUB.org â€œ always â€œONâ€œNew Paradigms in Global Scientific Knowledge Transfer, Publishing, and Assessment. , 2019, , .		0
460	QUANTUM SIMULATIONS OF DUAL GATE MOSFET DEVICES: BUILDING AND DEPLOYING COMMUNITY NANOTECHNOLOGY SOFTWARE TOOLS ON NANOHUB.ORG. Selected Topics in Electornics and Systems, 2008, , 41-50.	0.2	0
461	Theory and Simulations of Controlled Electronic States Bound to a Single Dopant in Silicon. , 2013, , .		0
462	Tool-Based Curricula and Visual Learning. Electronics, 2014, 17, .	0.2	0
463	Multimillion Atom Simulation of Electronic and Optical Properties of Nanoscale Devices Using NEMO 3-D. , 2015, , 1-69.		0
464	Numerical Integral Eigensolver for a Ring Region on the Complex Plane. Lecture Notes in Computational Science and Engineering, 2017, , 19-30.	0.1	0