

M S Lundstrom

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111
papers

7,187
citations

42
h-index

84
g-index

121
ext. papers

8,291
ext. citations

3.5
avg, IF

6.21
L-index

#	Paper	IF	Citations
111	Fundamentals of Carrier Transport 2000 ,		664
110	Carbon Nanotube Field-Effect Transistors with Integrated Ohmic Contacts and High- κ Gate Dielectrics. <i>Nano Letters</i> , 2004 , 4, 447-450	11.5	430
109	Elementary scattering theory of the Si MOSFET. <i>IEEE Electron Device Letters</i> , 1997 , 18, 361-363	4.4	422
108	Essential physics of carrier transport in nanoscale MOSFETs. <i>IEEE Transactions on Electron Devices</i> , 2002 , 49, 133-141	2.9	376
107	Applied physics. Moore's law forever?. <i>Science</i> , 2003 , 299, 210-1	33.3	313
106	Performance Comparison Between p-i-n Tunneling Transistors and Conventional MOSFETs. <i>IEEE Transactions on Electron Devices</i> , 2009 , 56, 456-465	2.9	304
105	A three-dimensional quantum simulation of silicon nanowire transistors with the effective-mass approximation. <i>Journal of Applied Physics</i> , 2004 , 96, 2192-2203	2.5	271
104	A numerical study of scaling issues for Schottky-barrier carbon nanotube transistors. <i>IEEE Transactions on Electron Devices</i> , 2004 , 51, 172-177	2.9	218
103	Performance Projections for Ballistic Graphene Nanoribbon Field-Effect Transistors. <i>IEEE Transactions on Electron Devices</i> , 2007 , 54, 677-682	2.9	204
102	Modeling of Nanoscale Devices. <i>Proceedings of the IEEE</i> , 2008 , 96, 1511-1550	14.3	201
101	Influence of dimensionality on thermoelectric device performance. <i>Journal of Applied Physics</i> , 2009 , 105, 034506	2.5	162
100	Universality of non-Ohmic shunt leakage in thin-film solar cells. <i>Journal of Applied Physics</i> , 2010 , 108, 124509	2.5	158
99	On the performance limits for Si MOSFETs: a theoretical study. <i>IEEE Transactions on Electron Devices</i> , 2000 , 47, 232-240	2.9	144
98	Assessment of high-frequency performance potential of carbon nanotube transistors. <i>IEEE Nanotechnology Magazine</i> , 2005 , 4, 715-721	2.6	143
97	Bandstructure Effects in Silicon Nanowire Electron Transport. <i>IEEE Transactions on Electron Devices</i> , 2008 , 55, 1286-1297	2.9	142
96	On the validity of the parabolic effective-mass approximation for the I-V calculation of silicon nanowire transistors. <i>IEEE Transactions on Electron Devices</i> , 2005 , 52, 1589-1595	2.9	139
95	Transport effects on signal propagation in quantum wires. <i>IEEE Transactions on Electron Devices</i> , 2005 , 52, 1734-1742	2.9	134

94	A simple quantum mechanical treatment of scattering in nanoscale transistors. <i>Journal of Applied Physics</i> , 2003 , 93, 5613-5625	2.5	129
93	nanoHUB.org: Advancing Education and Research in Nanotechnology. <i>Computing in Science and Engineering</i> , 2008 , 10, 17-23	1.5	126
92	Nonequilibrium Green's Function Treatment of Phonon Scattering in Carbon-Nanotube Transistors. <i>IEEE Transactions on Electron Devices</i> , 2007 , 54, 2339-2351	2.9	123
91	Theoretical investigation of surface roughness scattering in silicon nanowire transistors. <i>Applied Physics Letters</i> , 2005 , 87, 043101	3.4	118
90	On Landauer versus Boltzmann and full band versus effective mass evaluation of thermoelectric transport coefficients. <i>Journal of Applied Physics</i> , 2010 , 107, 023707	2.5	114
89	Generalized effective-mass approach for n-type metal-oxide-semiconductor field-effect transistors on arbitrarily oriented wafers. <i>Journal of Applied Physics</i> , 2005 , 97, 053702	2.5	109
88	Compact Models and the Physics of Nanoscale FETs. <i>IEEE Transactions on Electron Devices</i> , 2014 , 61, 225-233	2.3	106
87	Effects of surface band bending and scattering on thermoelectric transport in suspended bismuth telluride nanoplates. <i>Nano Letters</i> , 2013 , 13, 5316-22	11.5	106
86	Conductance Asymmetry of Graphene p-n Junction. <i>IEEE Transactions on Electron Devices</i> , 2009 , 56, 1292-1299	2.9	100
85	Ballistic transport in high electron mobility transistors. <i>IEEE Transactions on Electron Devices</i> , 2003 , 50, 1604-1609	2.9	80
84	Design of GaAs Solar Cells Operating Close to the Shockley-Queisser Limit. <i>IEEE Journal of Photovoltaics</i> , 2013 , 3, 737-744	3.7	79
83	Full dispersion versus Debye model evaluation of lattice thermal conductivity with a Landauer approach. <i>Journal of Applied Physics</i> , 2011 , 109, 073718	2.5	75
82	Role of phonon scattering in carbon nanotube field-effect transistors. <i>Applied Physics Letters</i> , 2005 , 86, 193103	3.4	74
81	Thermoelectric properties of epitaxial ScN films deposited by reactive magnetron sputtering onto MgO(001) substrates. <i>Journal of Applied Physics</i> , 2013 , 113, 153704	2.5	71
80	Does source-to-drain tunneling limit the ultimate scaling of MOSFETs?		67
79	A computational study of the thermoelectric performance of ultrathin Bi ₂ Te ₃ films. <i>Applied Physics Letters</i> , 2013 , 102, 093103	3.4	61
78	Electrostatics of nanowire transistors. <i>IEEE Nanotechnology Magazine</i> , 2003 , 2, 329-334	2.6	57
77	Quantum mechanical analysis of channel access geometry and series resistance in nanoscale transistors. <i>Journal of Applied Physics</i> , 2004 , 95, 292-305	2.5	54

76	Steady-state heat transport: Ballistic-to-diffusive with Fourier's law. <i>Journal of Applied Physics</i> , 2015 , 117, 035104	2.5	53
75	Band-Structure Effects on the Performance of III-V Ultrathin-Body SOI MOSFETs. <i>IEEE Transactions on Electron Devices</i> , 2008 , 55, 1116-1122	2.9	48
74	Thermal transport at the nanoscale: A Fourier's law vs. phonon Boltzmann equation study. <i>Journal of Applied Physics</i> , 2017 , 121, 044302	2.5	46
73	Gate-tunable and thickness-dependent electronic and thermoelectric transport in few-layer MoS ₂ . <i>Journal of Applied Physics</i> , 2016 , 120, 134305	2.5	46
72	Near-Equilibrium Transport 2013 ,		45
71	A Tight-Binding Study of the Ballistic Injection Velocity for Ultrathin-Body SOI MOSFETs. <i>IEEE Transactions on Electron Devices</i> , 2008 , 55, 866-871	2.9	44
70	Drift-diffusion equation for ballistic transport in nanoscale metal-oxide-semiconductor field effect transistors. <i>Journal of Applied Physics</i> , 2002 , 92, 5196-5202	2.5	43
69	Substrate Gating of Contact Resistance in Graphene Transistors. <i>IEEE Transactions on Electron Devices</i> , 2011 , 58, 3925-3932	2.9	41
68	Performance evaluation of ballistic silicon nanowire transistors with atomic-basis dispersion relations. <i>Applied Physics Letters</i> , 2005 , 86, 093113	3.4	35
67	Characteristic Features of 1-D Ballistic Transport in Nanowire MOSFETs. <i>IEEE Nanotechnology Magazine</i> , 2008 , 7, 787-794	2.6	31
66	Simulations of nanowire transistors: atomistic vs. effective mass models. <i>Journal of Computational Electronics</i> , 2008 , 7, 363-366	1.8	31
65	Prospects of Thin-Film Thermoelectric Devices for Hot-Spot Cooling and On-Chip Energy Harvesting. <i>IEEE Transactions on Components, Packaging and Manufacturing Technology</i> , 2013 , 3, 2059-2067	1.7	29
64	A simple Boltzmann transport equation for ballistic to diffusive transient heat transport. <i>Journal of Applied Physics</i> , 2015 , 117, 135102	2.5	27
63	On the Interpretation of Ballistic Injection Velocity in Deeply Scaled MOSFETs. <i>IEEE Transactions on Electron Devices</i> , 2012 , 59, 994-1001	2.9	27
62	Thermoelectric band engineering: The role of carrier scattering. <i>Journal of Applied Physics</i> , 2017 , 122, 175102	2.5	27
61	Simulation of Carbon Nanotube FETs Including Hot-Phonon and Self-Heating Effects. <i>IEEE Transactions on Electron Devices</i> , 2007 , 54, 2352-2361	2.9	27
60	The importance of band tail recombination on current collection and open-circuit voltage in CZTSSe solar cells. <i>Applied Physics Letters</i> , 2016 , 109, 021102	3.4	27
59	On the calculation of Lorenz numbers for complex thermoelectric materials. <i>Journal of Applied Physics</i> , 2018 , 123, 055104	2.5	26

58	Full band calculations of the intrinsic lower limit of contact resistivity. <i>Applied Physics Letters</i> , 2013 , 102, 111605	3.4	26
57	A Landauer Approach to Nanoscale MOSFETs. <i>Journal of Computational Electronics</i> , 2002 , 1, 481-489	1.8	23
56	CARBON NANOTUBE FIELD-EFFECT TRANSISTORS. <i>International Journal of High Speed Electronics and Systems</i> , 2006 , 16, 897-912	0.5	22
55	Computational study of double-gate graphene nano-ribbon transistors. <i>Journal of Computational Electronics</i> , 2008 , 7, 394-397	1.8	21
54	Unification of nonequilibrium molecular dynamics and the mode-resolved phonon Boltzmann equation for thermal transport simulations. <i>Physical Review B</i> , 2020 , 101,	3.3	21
53	Performance Analysis of III-V Materials in a Double-Gate nano-MOSFET 2007 ,		19
52	Atomistic Simulation of Carbon Nanotube Field-Effect Transistors Using Non-Equilibrium Green's Function Formalism. <i>Journal of Computational Electronics</i> , 2004 , 3, 373-377	1.8	18
51	Reflection anisotropy spectroscopy study of the near surface electric field in low-temperature grown GaAs (001). <i>Applied Physics Letters</i> , 1997 , 70, 1107-1109	3.4	17
50	Ballistic I-V Characteristics of Short-Channel Graphene Field-Effect Transistors: Analysis and Optimization for Analog and RF Applications. <i>IEEE Transactions on Electron Devices</i> , 2013 , 60, 958-964	2.9	16
49	Bandstructure and orientation effects in ballistic Si and Ge nanowire FETs		15
48	A general approach for the performance assessment of nanoscale silicon FETs. <i>IEEE Transactions on Electron Devices</i> , 2004 , 51, 1366-1370	2.9	15
47	Inversion capacitance-voltage studies on GaAs metal-oxide-semiconductor structure using transparent conducting oxide as metal gate. <i>Applied Physics Letters</i> , 2008 , 92, 252105	3.4	14
46	Modeling ballistic effects in frequency-dependent transient thermal transport using diffusion equations. <i>Journal of Applied Physics</i> , 2016 , 119, 095102	2.5	13
45	Role of energy distribution in contacts on thermal transport in Si: A molecular dynamics study. <i>Journal of Applied Physics</i> , 2016 , 120, 225112	2.5	13
44	Universal behavior of the thermoelectric figure of merit, zT, vs. quality factor. <i>Materials Today Physics</i> , 2019 , 8, 43-48	8	12
43	Emission-Diffusion Theory of the MOSFET. <i>IEEE Transactions on Electron Devices</i> , 2015 , 62, 4174-4178	2.9	12
42	Photovoltaic Material Characterization With Steady State and Transient Photoluminescence. <i>IEEE Journal of Photovoltaics</i> , 2015 , 5, 282-287	3.7	12
41	A physics-based compact model for FETs from diffusive to ballistic carrier transport regimes 2014 ,		12

40	NEGF analysis of InGaAs Schottky barrier double gate MOSFETs 2008 ,		12
39	Thin-Film Solar Cells with InP Absorber Layers Directly Grown on Nonepitaxial Metal Substrates. <i>Advanced Energy Materials</i> , 2015 , 5, 1501337	21.8	11
38	On the Use of Rau's Reciprocity to Deduce External Radiative Efficiency in Solar Cells. <i>IEEE Journal of Photovoltaics</i> , 2013 , 3, 1348-1353	3.7	10
37	Photoluminescence Excitation Spectroscopy for In-Line Optical Characterization of Crystalline Solar Cells. <i>IEEE Journal of Photovoltaics</i> , 2013 , 3, 1342-1347	3.7	10
36	Drift-diffusion and computational electronics - still going strong after 40 years! 2015 ,		9
35	Simulation of spin field effect transistors: Effects of tunneling and spin relaxation on performance. <i>Journal of Applied Physics</i> , 2010 , 108, 083702	2.5	9
34	PETE: A device/circuit analysis framework for evaluation and comparison of charge based emerging devices 2009 ,		9
33	Monte Carlo Simulation of Carbon Nanotube Devices. <i>Journal of Computational Electronics</i> , 2004 , 3, 333-336	3.6	8
32	Scattering theory of the short channel MOSFET		8
31	Benchmarking Macroscopic Transport Models for Nanotransistor TCAD. <i>Journal of Computational Electronics</i> , 2002 , 1, 385-388	1.8	7
30	Modeling of spin metal-oxide-semiconductor field-effect transistor: A nonequilibrium Green's function approach with spin relaxation. <i>Journal of Applied Physics</i> , 2008 , 104, 094511	2.5	6
29	An efficient algorithm to calculate intrinsic thermoelectric parameters based on Landauer approach. <i>Journal of Computational Electronics</i> , 2012 , 11, 56-66	1.8	5
28	Three-dimensional atomistic simulation of carbon nanotube FETs with realistic geometry		5
27	The use of strain to tailor electronic thermoelectric transport properties: A first principles study of 2H-phase CuAlO ₂ . <i>Journal of Applied Physics</i> , 2019 , 125, 082531	2.5	4
26	Simulation of Carbon nanotube FETs including hot-phonon and self-heating effects 2006 ,		4
25	Limitations of zT as a figure of merit for nanostructured thermoelectric materials. <i>Journal of Applied Physics</i> , 2019 , 126, 195703	2.5	4
24	Simulating realistic implementations of spin field effect transistor. <i>Journal of Applied Physics</i> , 2011 , 109, 07C306	2.5	3
23	A Quantum Mechanical Approach for the Simulation of Si/SiO ₂ Interface Roughness Scattering in Silicon Nanowire Transistors. <i>Journal of Computational Electronics</i> , 2004 , 3, 453-457	1.8	3

22	Assessment of silicon MOS and carbon nanotube FET performance limits using a general theory of ballistic transistors		3
21	Steady-state photoluminescent excitation characterization of semiconductor carrier recombination. <i>Review of Scientific Instruments</i> , 2016 , 87, 013104	1.7	3
20	WASTE ENERGY HARVESTING USING III-NITRIDE MATERIALS 2017 , 37-75		2
19	Temperature Dependence of the Transconductance in Ballistic III-V QWFETs. <i>IEEE Transactions on Electron Devices</i> , 2011 , 58, 1804-1808	2.9	2
18	Subthreshold Characteristics of High-performance Inversion-type Enhancement-mode InGaAs NMOSFETs with ALD Al ₂ O ₃ as Gate Dielectric 2008 ,		2
17	Channel material optimization for the ultimate planar and nanowire mosfets: a theoretical exploration 2005 ,		2
16	Choice of flat-band voltage, $V_{DD}/$ and diameter of ambipolar Schottky-barrier carbon nanotube transistors in digital circuit design		2
15	Carrier Transport in BJTs: from Ballistic to Diffusive and Off-Equilibrium 2018 ,		2
14	The use of strain and grain boundaries to tailor phonon transport properties: A first-principles study of 2H-phase CuAlO ₂ . II. <i>Journal of Applied Physics</i> , 2020 , 127, 115108	2.5	1
13	Investigation on the thermoelectric performance of monolayer MoS ₂ 2014 ,		1
12	Photoluminescence excitation spectroscopy of p-GaAs surfaces and AlGaAs/GaAs interfaces supported by numerical modeling 2012 ,		1
11	Influence of Ge doping on defect distributions of Cu ₂ Zn(Sn _x Ge _{1-x}) (S _y Se _{1-y}) fabricated by nanocrystal ink deposition with selenization 2012 ,		1
10	Electron-phonon scattering in planar MOSFETs with NEGF 2010 ,		1
9	Realistic spin-FET performance assessment for reconfigurable logic circuits 2010 ,		1
8	Nanoscale Transistors: Physics and Materials. <i>Materials Research Society Symposia Proceedings</i> , 2006 , 958, 1		1
7	CARBON NANOTUBE FIELD-EFFECT TRANSISTORS. <i>Selected Topics in Electronics and Systems</i> , 2007 , 15-30		1
6	A Computational Exploration of Lateral Channel Engineering to Enhance MOSFET Performance. <i>Journal of Computational Electronics</i> , 2002 , 1, 185-189	1.8	1
5	Corrections to "Ballistic transport in high electron mobility transistors". <i>IEEE Transactions on Electron Devices</i> , 2003 , 50, 2185-2185	2.9	1

4	Scattering theory: a conceptually simple view of nanoscale transistors 1998 ,	1
3	Photoluminescence excitation spectroscopy characterization of cadmium telluride solar cells 2016 ,	1
2	Corrections to On the Ballistic Injection Velocity in Deeply Scaled MOSFETs [Aug 09 1674-1680]. <i>IEEE Transactions on Electron Devices</i> , 2012 , 59, 3655-3655	2.9
1	Effective Mass Approach for n-MOSFETs on Arbitrarily Oriented Wafers. <i>Journal of Computational Electronics</i> , 2004 , 3, 281-285	1.8