

# M S Lundstrom

## List of Publications by Year in Descending Order

**Source:** <https://exaly.com/author-pdf/7880125/m-s-lundstrom-publications-by-year.pdf>

**Version:** 2024-04-26

This document has been generated based on the publications and citations recorded by exaly.com. For the latest version of this publication list, visit the link given above.

The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

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	The use of strain and grain boundaries to tailor phonon transport properties: A first-principles study of 2H-phase CuAlO <sub>2</sub> . II. <i>Journal of Applied Physics</i> , <b>2020</b> , 127, 115108	2.5	1
110	Unification of nonequilibrium molecular dynamics and the mode-resolved phonon Boltzmann equation for thermal transport simulations. <i>Physical Review B</i> , <b>2020</b> , 101,	3.3	21
109	The use of strain to tailor electronic thermoelectric transport properties: A first principles study of 2H-phase CuAlO <sub>2</sub> . <i>Journal of Applied Physics</i> , <b>2019</b> , 125, 082531	2.5	4
108	Universal behavior of the thermoelectric figure of merit, zT, vs. quality factor. <i>Materials Today Physics</i> , <b>2019</b> , 8, 43-48	8	12
107	Limitations of zT as a figure of merit for nanostructured thermoelectric materials. <i>Journal of Applied Physics</i> , <b>2019</b> , 126, 195703	2.5	4
106	On the calculation of Lorenz numbers for complex thermoelectric materials. <i>Journal of Applied Physics</i> , <b>2018</b> , 123, 055104	2.5	26
105	Carrier Transport in BJTs: from Ballistic to Diffusive and Off-Equilibrium <b>2018</b> ,		2
104	Thermal transport at the nanoscale: A Fourier's law vs. phonon Boltzmann equation study. <i>Journal of Applied Physics</i> , <b>2017</b> , 121, 044302	2.5	46
103	Thermoelectric band engineering: The role of carrier scattering. <i>Journal of Applied Physics</i> , <b>2017</b> , 122, 175102	2.5	27
102	WASTE ENERGY HARVESTING USING III-NITRIDE MATERIALS <b>2017</b> , 37-75		2
101	Modeling ballistic effects in frequency-dependent transient thermal transport using diffusion equations. <i>Journal of Applied Physics</i> , <b>2016</b> , 119, 095102	2.5	13
100	Gate-tunable and thickness-dependent electronic and thermoelectric transport in few-layer MoS <sub>2</sub> . <i>Journal of Applied Physics</i> , <b>2016</b> , 120, 134305	2.5	46
99	The importance of band tail recombination on current collection and open-circuit voltage in CZTSSe solar cells. <i>Applied Physics Letters</i> , <b>2016</b> , 109, 021102	3.4	27
98	Steady-state photoluminescent excitation characterization of semiconductor carrier recombination. <i>Review of Scientific Instruments</i> , <b>2016</b> , 87, 013104	1.7	3
97	Role of energy distribution in contacts on thermal transport in Si: A molecular dynamics study. <i>Journal of Applied Physics</i> , <b>2016</b> , 120, 225112	2.5	13
96	Photoluminescence excitation spectroscopy characterization of cadmium telluride solar cells <b>2016</b> ,		1
95	A simple Boltzmann transport equation for ballistic to diffusive transient heat transport. <i>Journal of Applied Physics</i> , <b>2015</b> , 117, 135102	2.5	27

94	Steady-state heat transport: Ballistic-to-diffusive with Fourier's law. <i>Journal of Applied Physics</i> , <b>2015</b> , 117, 035104	2.5	53
93	Emission-Diffusion Theory of the MOSFET. <i>IEEE Transactions on Electron Devices</i> , <b>2015</b> , 62, 4174-4178	2.9	12
92	Drift-diffusion and computational electronics - still going strong after 40 years! <b>2015</b> ,		9
91	Photovoltaic Material Characterization With Steady State and Transient Photoluminescence. <i>IEEE Journal of Photovoltaics</i> , <b>2015</b> , 5, 282-287	3.7	12
90	Thin-Film Solar Cells with InP Absorber Layers Directly Grown on Nonepitaxial Metal Substrates. <i>Advanced Energy Materials</i> , <b>2015</b> , 5, 1501337	21.8	11
89	Compact Models and the Physics of Nanoscale FETs. <i>IEEE Transactions on Electron Devices</i> , <b>2014</b> , 61, 225-233	23.3	106
88	Investigation on the thermoelectric performance of monolayer MoS <sub>2</sub> <b>2014</b> ,		1
87	A physics-based compact model for FETs from diffusive to ballistic carrier transport regimes <b>2014</b> ,		12
86	Design of GaAs Solar Cells Operating Close to the Shockley-Queisser Limit. <i>IEEE Journal of Photovoltaics</i> , <b>2013</b> , 3, 737-744	3.7	79
85	On the Use of Rau's Reciprocity to Deduce External Radiative Efficiency in Solar Cells. <i>IEEE Journal of Photovoltaics</i> , <b>2013</b> , 3, 1348-1353	3.7	10
84	Photoluminescence Excitation Spectroscopy for In-Line Optical Characterization of Crystalline Solar Cells. <i>IEEE Journal of Photovoltaics</i> , <b>2013</b> , 3, 1342-1347	3.7	10
83	Effects of surface band bending and scattering on thermoelectric transport in suspended bismuth telluride nanoplates. <i>Nano Letters</i> , <b>2013</b> , 13, 5316-22	11.5	106
82	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> , <b>2013</b> , 3, 2059-2067	1.7	29
81	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> , <b>2013</b> , 60, 958-964	2.9	16
80	Full band calculations of the intrinsic lower limit of contact resistivity. <i>Applied Physics Letters</i> , <b>2013</b> , 102, 111605	3.4	26
79	Thermoelectric properties of epitaxial ScN films deposited by reactive magnetron sputtering onto MgO(001) substrates. <i>Journal of Applied Physics</i> , <b>2013</b> , 113, 153704	2.5	71
78	A computational study of the thermoelectric performance of ultrathin Bi <sub>2</sub> Te <sub>3</sub> films. <i>Applied Physics Letters</i> , <b>2013</b> , 102, 093103	3.4	61
77	Near-Equilibrium Transport <b>2013</b> ,		45

76	On the Interpretation of Ballistic Injection Velocity in Deeply Scaled MOSFETs. <i>IEEE Transactions on Electron Devices</i> , <b>2012</b> , 59, 994-1001	2.9	27
75	Photoluminescence excitation spectroscopy of p-GaAs surfaces and AlGaAs/GaAs interfaces supported by numerical modeling <b>2012</b> ,		1
74	Corrections to On the Ballistic Injection Velocity in Deeply Scaled MOSFETs [Aug 09 1674-1680]. <i>IEEE Transactions on Electron Devices</i> , <b>2012</b> , 59, 3655-3655	2.9	
73	Influence of Ge doping on defect distributions of Cu <sub>2</sub> Zn(Sn <sub>x</sub> Ge <sub>1-x</sub> ) (SySe <sub>1-y</sub> ) fabricated by nanocrystal ink deposition with selenization <b>2012</b> ,		1
72	An efficient algorithm to calculate intrinsic thermoelectric parameters based on Landauer approach. <i>Journal of Computational Electronics</i> , <b>2012</b> , 11, 56-66	1.8	5
71	Full dispersion versus Debye model evaluation of lattice thermal conductivity with a Landauer approach. <i>Journal of Applied Physics</i> , <b>2011</b> , 109, 073718	2.5	75
70	Simulating realistic implementations of spin field effect transistor. <i>Journal of Applied Physics</i> , <b>2011</b> , 109, 07C306	2.5	3
69	Temperature Dependence of the Transconductance in Ballistic III-V QWFETs. <i>IEEE Transactions on Electron Devices</i> , <b>2011</b> , 58, 1804-1808	2.9	2
68	Substrate Gating of Contact Resistance in Graphene Transistors. <i>IEEE Transactions on Electron Devices</i> , <b>2011</b> , 58, 3925-3932	2.9	41
67	On Landauer versus Boltzmann and full band versus effective mass evaluation of thermoelectric transport coefficients. <i>Journal of Applied Physics</i> , <b>2010</b> , 107, 023707	2.5	114
66	Electron-phonon scattering in planar MOSFETs with NEGF <b>2010</b> ,		1
65	Simulation of spin field effect transistors: Effects of tunneling and spin relaxation on performance. <i>Journal of Applied Physics</i> , <b>2010</b> , 108, 083702	2.5	9
64	Universality of non-Ohmic shunt leakage in thin-film solar cells. <i>Journal of Applied Physics</i> , <b>2010</b> , 108, 124509	2.5	158
63	Realistic spin-FET performance assessment for reconfigurable logic circuits <b>2010</b> ,		1
62	Performance Comparison Between p-i-n Tunneling Transistors and Conventional MOSFETs. <i>IEEE Transactions on Electron Devices</i> , <b>2009</b> , 56, 456-465	2.9	304
61	Conductance Asymmetry of Graphene p-n Junction. <i>IEEE Transactions on Electron Devices</i> , <b>2009</b> , 56, 1292-1299	2.9	100
60	Influence of dimensionality on thermoelectric device performance. <i>Journal of Applied Physics</i> , <b>2009</b> , 105, 034506	2.5	162
59	PETE: A device/circuit analysis framework for evaluation and comparison of charge based emerging devices <b>2009</b> ,		9

58	A Tight-Binding Study of the Ballistic Injection Velocity for Ultrathin-Body SOI MOSFETs. <i>IEEE Transactions on Electron Devices</i> , <b>2008</b> , 55, 866-871	2.9	44
57	Band-Structure Effects on the Performance of III-V Ultrathin-Body SOI MOSFETs. <i>IEEE Transactions on Electron Devices</i> , <b>2008</b> , 55, 1116-1122	2.9	48
56	Bandstructure Effects in Silicon Nanowire Electron Transport. <i>IEEE Transactions on Electron Devices</i> , <b>2008</b> , 55, 1286-1297	2.9	142
55	Modeling of Nanoscale Devices. <i>Proceedings of the IEEE</i> , <b>2008</b> , 96, 1511-1550	14.3	201
54	nanoHUB.org: Advancing Education and Research in Nanotechnology. <i>Computing in Science and Engineering</i> , <b>2008</b> , 10, 17-23	1.5	126
53	Characteristic Features of 1-D Ballistic Transport in Nanowire MOSFETs. <i>IEEE Nanotechnology Magazine</i> , <b>2008</b> , 7, 787-794	2.6	31
52	NEGF analysis of InGaAs Schottky barrier double gate MOSFETs <b>2008</b> ,		12
51	Subthreshold Characteristics of High-performance Inversion-type Enhancement-mode InGaAs NMOSFETs with ALD Al <sub>2</sub> O <sub>3</sub> as Gate Dielectric <b>2008</b> ,		2
50	Modeling of spin metal-oxide-semiconductor field-effect transistor: A nonequilibrium Green's function approach with spin relaxation. <i>Journal of Applied Physics</i> , <b>2008</b> , 104, 094511	2.5	6
49	Inversion capacitance-voltage studies on GaAs metal-oxide-semiconductor structure using transparent conducting oxide as metal gate. <i>Applied Physics Letters</i> , <b>2008</b> , 92, 252105	3.4	14
48	Simulations of nanowire transistors: atomistic vs. effective mass models. <i>Journal of Computational Electronics</i> , <b>2008</b> , 7, 363-366	1.8	31
47	Computational study of double-gate graphene nano-ribbon transistors. <i>Journal of Computational Electronics</i> , <b>2008</b> , 7, 394-397	1.8	21
46	Performance Analysis of III-V Materials in a Double-Gate nano-MOSFET <b>2007</b> ,		19
45	Performance Projections for Ballistic Graphene Nanoribbon Field-Effect Transistors. <i>IEEE Transactions on Electron Devices</i> , <b>2007</b> , 54, 677-682	2.9	204
44	Nonequilibrium Green's Function Treatment of Phonon Scattering in Carbon-Nanotube Transistors. <i>IEEE Transactions on Electron Devices</i> , <b>2007</b> , 54, 2339-2351	2.9	123
43	Simulation of Carbon Nanotube FETs Including Hot-Phonon and Self-Heating Effects. <i>IEEE Transactions on Electron Devices</i> , <b>2007</b> , 54, 2352-2361	2.9	27
42	CARBON NANOTUBE FIELD-EFFECT TRANSISTORS. <i>Selected Topics in Electronics and Systems</i> , <b>2007</b> , 15-30		1
41	Nanoscale Transistors: Physics and Materials. <i>Materials Research Society Symposia Proceedings</i> , <b>2006</b> , 958, 1		1

40	Simulation of Carbon nanotube FETs including hot-phonon and self-heating effects <b>2006,</b>		4
39	CARBON NANOTUBE FIELD-EFFECT TRANSISTORS. <i>International Journal of High Speed Electronics and Systems</i> , <b>2006</b> , 16, 897-912	0.5	22
38	Channel material optimization for the ultimate planar and nanowire mosfets: a theoretical exploration <b>2005,</b>		2
37	Generalized effective-mass approach for n-type metal-oxide-semiconductor field-effect transistors on arbitrarily oriented wafers. <i>Journal of Applied Physics</i> , <b>2005</b> , 97, 053702	2.5	109
36	Assessment of high-frequency performance potential of carbon nanotube transistors. <i>IEEE Nanotechnology Magazine</i> , <b>2005</b> , 4, 715-721	2.6	143
35	Performance evaluation of ballistic silicon nanowire transistors with atomic-basis dispersion relations. <i>Applied Physics Letters</i> , <b>2005</b> , 86, 093113	3.4	35
34	Theoretical investigation of surface roughness scattering in silicon nanowire transistors. <i>Applied Physics Letters</i> , <b>2005</b> , 87, 043101	3.4	118
33	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> , <b>2005</b> , 52, 1589-1595	2.9	139
32	Transport effects on signal propagation in quantum wires. <i>IEEE Transactions on Electron Devices</i> , <b>2005</b> , 52, 1734-1742	2.9	134
31	Role of phonon scattering in carbon nanotube field-effect transistors. <i>Applied Physics Letters</i> , <b>2005</b> , 86, 193103	3.4	74
30	Quantum mechanical analysis of channel access geometry and series resistance in nanoscale transistors. <i>Journal of Applied Physics</i> , <b>2004</b> , 95, 292-305	2.5	54
29	A numerical study of scaling issues for Schottky-barrier carbon nanotube transistors. <i>IEEE Transactions on Electron Devices</i> , <b>2004</b> , 51, 172-177	2.9	218
28	A general approach for the performance assessment of nanoscale silicon FETs. <i>IEEE Transactions on Electron Devices</i> , <b>2004</b> , 51, 1366-1370	2.9	15
27	Effective Mass Approach for n-MOSFETs on Arbitrarily Oriented Wafers. <i>Journal of Computational Electronics</i> , <b>2004</b> , 3, 281-285	1.8	
26	Monte Carlo Simulation of Carbon Nanotube Devices. <i>Journal of Computational Electronics</i> , <b>2004</b> , 3, 333-336	1.8	8
25	Atomistic Simulation of Carbon Nanotube Field-Effect Transistors Using Non-Equilibrium Green's Function Formalism. <i>Journal of Computational Electronics</i> , <b>2004</b> , 3, 373-377	1.8	18
24	A Quantum Mechanical Approach for the Simulation of Si/SiO <sub>2</sub> Interface Roughness Scattering in Silicon Nanowire Transistors. <i>Journal of Computational Electronics</i> , <b>2004</b> , 3, 453-457	1.8	3
23	A three-dimensional quantum simulation of silicon nanowire transistors with the effective-mass approximation. <i>Journal of Applied Physics</i> , <b>2004</b> , 96, 2192-2203	2.5	271

22	Carbon Nanotube Field-Effect Transistors with Integrated Ohmic Contacts and High- $\kappa$ Gate Dielectrics. <i>Nano Letters</i> , <b>2004</b> , 4, 447-450	11.5	430
21	Ballistic transport in high electron mobility transistors. <i>IEEE Transactions on Electron Devices</i> , <b>2003</b> , 50, 1604-1609	2.9	80
20	Corrections to "Ballistic transport in high electron mobility transistors". <i>IEEE Transactions on Electron Devices</i> , <b>2003</b> , 50, 2185-2185	2.9	1
19	Applied physics. Moore's law forever?. <i>Science</i> , <b>2003</b> , 299, 210-1	33.3	313
18	A simple quantum mechanical treatment of scattering in nanoscale transistors. <i>Journal of Applied Physics</i> , <b>2003</b> , 93, 5613-5625	2.5	129
17	Electrostatics of nanowire transistors. <i>IEEE Nanotechnology Magazine</i> , <b>2003</b> , 2, 329-334	2.6	57
16	Essential physics of carrier transport in nanoscale MOSFETs. <i>IEEE Transactions on Electron Devices</i> , <b>2002</b> , 49, 133-141	2.9	376
15	Benchmarking Macroscopic Transport Models for Nanotransistor TCAD. <i>Journal of Computational Electronics</i> , <b>2002</b> , 1, 385-388	1.8	7
14	A Computational Exploration of Lateral Channel Engineering to Enhance MOSFET Performance. <i>Journal of Computational Electronics</i> , <b>2002</b> , 1, 185-189	1.8	1
13	A Landauer Approach to Nanoscale MOSFETs. <i>Journal of Computational Electronics</i> , <b>2002</b> , 1, 481-489	1.8	23
12	Drift-diffusion equation for ballistic transport in nanoscale metal-oxide-semiconductor field effect transistors. <i>Journal of Applied Physics</i> , <b>2002</b> , 92, 5196-5202	2.5	43
11	On the performance limits for Si MOSFETs: a theoretical study. <i>IEEE Transactions on Electron Devices</i> , <b>2000</b> , 47, 232-240	2.9	144
10	Fundamentals of Carrier Transport <b>2000</b> ,		664
9	Scattering theory: a conceptually simple view of nanoscale transistors <b>1998</b> ,		1
8	Reflection anisotropy spectroscopy study of the near surface electric field in low-temperature grown GaAs (001). <i>Applied Physics Letters</i> , <b>1997</b> , 70, 1107-1109	3.4	17
7	Elementary scattering theory of the Si MOSFET. <i>IEEE Electron Device Letters</i> , <b>1997</b> , 18, 361-363	4.4	422
6	Three-dimensional atomistic simulation of carbon nanotube FETs with realistic geometry		5
5	Bandstructure and orientation effects in ballistic Si and Ge nanowire FETs		15

4	Choice of flat-band voltage, $V_{sub DD}$ and diameter of ambipolar Schottky-barrier carbon nanotube transistors in digital circuit design	2
3	Does source-to-drain tunneling limit the ultimate scaling of MOSFETs?	67
2	Assessment of silicon MOS and carbon nanotube FET performance limits using a general theory of ballistic transistors	3
1	Scattering theory of the short channel MOSFET	8