Mihail Nedjalkov

List of Publications by Year
in descending order

62 papers	792 citations	567281 15 h-index	580821 25 g-index
66 all docs	66 docs citations	66 times ranked	334 citing authors

#	Article	IF	Citations
1	Modeling Thermal Effects in Nanodevices. IEEE Transactions on Electron Devices, 2008, 55, 1306-1316.	3.0	107
2	Theory of the Monte Carlo method for semiconductor device simulation. IEEE Transactions on Electron Devices, 2000, 47, 1898-1908.	3.0	48
3	An introduction to applied quantum mechanics in the Wigner Monte Carlo formalism. Physics Reports, 2015, 577, 1-34.	25.6	47
4	A Monte Carlo solution of the Wigner transport equation. Semiconductor Science and Technology, 1994, 9, 934-936.	2.0	38
5	Wigner quasi-particle attributesâ€"An asymptotic perspective. Applied Physics Letters, 2013, 102, .	3.3	38
6	Impact of Self-Heating on the Statistical Variability in Bulk and SOI FinFETs. IEEE Transactions on Electron Devices, 2015, 62, 2106-2112.	3.0	31
7	A benchmark study of the Wigner Monte Carlo method. Monte Carlo Methods and Applications, 2014, 20, 43-51.	0.8	29
8	Iteration approach for solving the Boltzmann equation with the Monte Carlo method. Solid-State Electronics, 1989, 32, 893-896.	1.4	28
9	Physical scales in the Wignerâ€"Boltzmann equation. Annals of Physics, 2013, 328, 220-237.	2.8	25
10	The stationary Monte Carlo method for device simulation. I. Theory. Journal of Applied Physics, 2003, 93, 3553-3563.	2.5	22
11	Simulation of the Impact of Ionized Impurity Scattering on the Total Mobility in Si Nanowire Transistors. Materials, 2019, 12, 124.	2.9	21
12	Femtosecond relaxation of hot electrons by phonon emission in presence of electric field. Physica B: Condensed Matter, 2002, 314, 301-304.	2.7	20
13	Distributed-memory parallelization of the Wigner Monte Carlo method using spatial domain decomposition. Journal of Computational Electronics, 2015, 14, 151-162.	2.5	18
14	Application of the iteration approach to the ensemble Monte Carlo technique. Solid-State Electronics, 1990, 33, 407-410.	1.4	16
15	Using the wigner function for quantum transport in device simulation. Mathematical and Computer Modelling, 1997, 25, 33-53.	2.0	16
16	Semi-discrete 2D Wigner-particle approach. Journal of Computational Electronics, 2008, 7, 222-225.	2.5	16
17	Mobility of Circular and Elliptical Si Nanowire Transistors Using a Multi-Subband 1D Formalism. IEEE Electron Device Letters, 2019, 40, 1571-1574.	3.9	15
18	Monte Carlo method for modeling of small signal response including the Pauli exclusion principle. Journal of Applied Physics, 2003, 94, 5791-5799.	2.5	14

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19	Semiclassical Approximation of Electron-Phonon Scattering Beyond Fermi's Golden Rule. SIAM Journal on Applied Mathematics, 2004, 64, 1933-1953.	1.8	13
20	Electron Interference in a Doubleâ€Dopant Potential Structure. Physica Status Solidi - Rapid Research Letters, 2018, 12, 1800111.	2.4	13
21	A Wigner equation with quantum electronâ€"phonon interaction. Microelectronic Engineering, 2002, 63, 199-203.	2.4	11
22	Electron dynamics in nanoscale transistors by means of Wigner and Boltzmann approaches. Physica A: Statistical Mechanics and Its Applications, 2014, 398, 194-198.	2.6	11
23	Boundary conditions and the Wigner equation solution. Journal of Computational Electronics, 2015, 14, 859-863.	2.5	11
24	A review of quantum transport in field-effect transistors. Semiconductor Science and Technology, 2022, 37, 043001.	2.0	11
25	A Self-Consistent Event Biasing Scheme for Statistical Enhancement. Journal of Computational Electronics, 2004, 3, 305-309.	2.5	10
26	Decoherence effects in the Wigner function formalism. Journal of Computational Electronics, 2013, 12, 388-396.	2.5	10
27	Analysis of lenseâ€governed Wigner signed particle quantum dynamics. Physica Status Solidi - Rapid Research Letters, 2017, 11, 1700102.	2.4	10
28	Electron evolution around a repulsive dopant in a quantum wire: coherence effects. Nanoscale, 2018, 10, 23037-23049.	5.6	9
29	The stationary Monte Carlo method for device simulation. II. Event biasing and variance estimation. Journal of Applied Physics, 2003, 93, 3564-3571.	2.5	8
30	Domain decomposition strategies for the two-dimensional Wigner Monte Carlo Method. Journal of Computational Electronics, 2015, 14, 922-929.	2.5	8
31	Ultrafast Wigner transport in quantum wires. Journal of Computational Electronics, 2007, 6, 235-238.	2.5	7
32	Stochastic analysis of surface roughness models in quantum wires. Computer Physics Communications, 2018, 228, 30-37.	7.5	7
33	A computational approach for investigating Coulomb interaction using Wignerâ€"Poisson coupling. Journal of Computational Electronics, 2021, 20, 775-784.	2.5	7
34	Device modeling in the Wigner picture. Journal of Computational Electronics, 2010, 9, 218-223.	2.5	6
35	The Wigner equation in the presence of electromagnetic potentials. Journal of Computational Electronics, 2015, 14, 888-893.	2.5	6
36	Investigating Quantum Coherence by Negative Excursions of the Wigner Quasi-Distribution. Applied Sciences (Switzerland), 2019, 9, 1344.	2.5	6

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37	The Role of Annihilation in a Wigner Monte Carlo Approach. Lecture Notes in Computer Science, 2014, , 186-193.	1.3	6
38	Monte-Carlo methods for determination of transport properties of semiconductors. Solid-State Electronics, 1988, 31, 1065-1069.	1.4	5
39	Stochastic interpretation of the Wigner transport in nanostructures. Microelectronics Journal, 2003, 34, 443-445.	2.0	5
40	PARTICLE MODELS FOR DEVICE SIMULATION. International Journal of High Speed Electronics and Systems, 2003, 13, 727-769.	0.7	5
41	Decoherence and time reversibility: The role of randomness at interfaces. Journal of Applied Physics, 2013, 114, 174902.	2.5	5
42	One-dimensional multi-subband Monte Carlo simulation of charge transport in Si nanowire transistors. , 2016, , .		5
43	Monte Carlo algorithms for stationary device simulations. Mathematics and Computers in Simulation, 2003, 62, 453-461.	4.4	4
44	Modeling Carrier Mobility in Nano-MOSFETs in the Presence of Discrete Trapped Charges: Accuracy and Issues. IEEE Transactions on Electron Devices, 2014, 61, 1292-1298.	3.0	4
45	A comparison of approaches for the solution of the Wigner equation. Mathematics and Computers in Simulation, 2015, 107, 108-119.	4.4	4
46	Complex Systems in Phase Space. Entropy, 2020, 22, 1103.	2.2	4
47	The Monte Carlo method for semi-classical charge transport in semiconductor devices. Mathematics and Computers in Simulation, 2001, 55, 93-102.	4.4	3
48	A quasi-particle model of the electronâ€"Wigner potential interaction. Semiconductor Science and Technology, 2004, 19, S226-S228.	2.0	3
49	Deterministic Solution of the Discrete Wigner Equation. Lecture Notes in Computer Science, 2015, , 149-156.	1.3	3
50	Modifications in the oneâ€particle Monte Carlo method for solving the Boltzmann equation with changed variables. Journal of Applied Physics, 1988, 64, 3532-3537.	2.5	2
51	Variance of the ensemble Monte Carlo algorithm for semiconductor transport modeling. Mathematics and Computers in Simulation, 2001, 55, 191-198.	4.4	2
52	An event bias technique for Monte Carlo device simulation. Mathematics and Computers in Simulation, 2003, 62, 367-375.	4.4	2
53	Phonon-Induced Decoherence in Electron Evolution. Lecture Notes in Computer Science, 2012, , 472-479.	1.3	2
54	A deterministic Wigner approach for superposed states. Journal of Computational Electronics, 2021, 20, 2104.	2.5	2

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55	Transient model for terminal current noise. Applied Physics Letters, 2002, 80, 607-609.	3.3	1
56	Electronâ€“phonon interaction in nanowires: A Monte Carlo study of the effect of the field. Mathematics and Computers in Simulation, 2010, 81, 515-521.	4.4	1
57	Introduction to the special issue on Wigner functions. Journal of Computational Electronics, 2015, 14, 857-858.	2.5	1
58	The Influence of Electrostatic Lenses on Wave Packet Dynamics. Lecture Notes in Computer Science, 2015, , 277-284.	1.3	1
59	The Impact of Collisional Broadening on Noise in Silicon at Equilibrium. , 2009, , .		0
60	The forced evolution of implementations. , 2009, , .		0
61	Stationary Quantum Particle Attributes. Modeling and Simulation in Science, Engineering and Technology, 2021, , 153-173.	0.6	0
62	Electromagnetic Coherent Electron Control. , 2021, , .		0