Bart Soree

List of Publications by Year
in descending order

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155	2,862	279798	233421
papers	citations	23 h-index	45 g-index

156	156	156	2496
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Lumped circuit model for inductive antenna spin-wave transducers. Scientific Reports, 2022, 12, 3796.	3.3	8
2	Impact of passivation on the Dirac cones of 2D topological insulators. Journal of Applied Physics, 2022, 131, .	2.5	2
3	Critical behavior of the ferromagnets <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="normal">CrI</mml:mi><mml:mn>3</mml:mn></mml:msub><mml:mo>,</mml:mo><mml:mo>Â</mml:mo><mml:msub><mml:mi mathvariant="normal">CrBr</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math> , and <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="normal">CrGeTe</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math> and the antife	3.2	36
4	Confined magnetoelastic waves in thin waveguides. Physical Review B, 2021, 103, .	3.2	15
5	Thermodynamic equilibrium theory revealing increased hysteresis in ferroelectric field-effect transistors with free charge accumulation. Communications Physics, 2021, 4, .	5.3	2
6	Magnetic order and critical temperature of substitutionally doped transition metal dichalcogenide monolayers. Npj 2D Materials and Applications, 2021, 5, .	7.9	48
7	Nanoscale domain wall devices with magnetic tunnel junction read and write. Nature Electronics, 2021, 4, 392-398.	26.0	46
8	Ab-Initio Study of Magnetically Intercalated Platinum Diselenide: The Impact of Platinum Vacancies. Materials, 2021, 14, 4167.	2.9	6
9	Skyrmion elongation, duplication, and rotation by spin-transfer torque under spatially varying spin current. Physical Review B, 2021, 104, .	3.2	0
10	Metal induced charge transfer doping in graphene-ruthenium hybrid interconnects. Carbon, 2021, 183, 999-1011.	10.3	10
11	Magnetic properties and critical behavior of magnetically intercalated WSe₂: a theoretical study. 2D Materials, 2021, 8, 025009.	4.4	16
12	Torque field and skyrmion motion by spin transfer torque in a quasi-2D interface in presence of strong spinâ€“orbit interaction. Journal of Applied Physics, 2021, 130, 133903.	2.5	3
13	Computing Curie temperature of two-dimensional ferromagnets in the presence of exchange anisotropy. Physical Review Research, 2021, 3, .	3.6	20
14	Ab initio modeling of few-layer dilute magnetic semiconductors. , 2021, , .		0
15	Optimization of Tungsten <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mi>Î²</mml:mi></mml:math> -Phase Window for Spin-Orbit-Torque Magnetic Random-Access Memory. Physical Review Applied, 2021, 16, .	3.8	18
16	Signature of Ballistic Band-Tail Tunneling Current in Tunnel FET. IEEE Transactions on Electron Devices, 2020, 67, 3486-3491.	3.0	5
17	Skyrmion spin transfer torque due to current confined in a nanowire. Physical Review B, 2020, 102, .	3.2	4
18	2D ferromagnetism at finite temperatures under quantum scrutiny. Applied Physics Letters, 2020, 117, .	3.3	14

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19	Fast Characterization of Input-Output Behavior of Non-Charge-Based Logic Devices by Machine Learning. Electronics (Switzerland), 2020, 9, 1381.	3.1	0
20	Back hopping in spin transfer torque switching of perpendicularly magnetized tunnel junctions. Physical Review B, 2020, 102, .	3.2	19
21	Excitation and propagation of spin waves in non-uniformly magnetized waveguides. Journal Physics D: Applied Physics, 2020, 53, 495006.	2.8	12
22	Electronically tunable quantum phase slips in voltage-biased superconducting rings as a base for phase-slip flux qubits. Superconductor Science and Technology, 2020, 33, 125002.	3.5	5
23	Characterization of interface interactions between Graphene and Ruthenium. , 2020, , .		3
24	Spin-Based Majority Computation. , 2019, , 231-262.		0
25	Large Variation in Temperature Dependence of Band-to-Band Tunneling Current in Tunnel Devices. IEEE Electron Device Letters, 2019, 40, 1864-1867.	3.9	8
26	Carrier transport in two-dimensional topological insulator nanoribbons in the presence of vacancy defects. 2D Materials, 2019, 6, 025011.	4.4	18
27	Voltage-controlled superconducting magnetic memory. AIP Advances, 2019, 9, 125223.	1.3	0
28	Phonon-assisted tunneling in direct-bandgap semiconductors. Journal of Applied Physics, 2019, 125, .	2.5	4
29	Theoretical study of scattering in graphene ribbons in the presence of structural and atomistic edge roughness. Physical Review Materials, 2019, 3, .	2.4	9
30	Flux Quantization and Aharonov-Bohm Effect in Superconducting Rings. Journal of Superconductivity and Novel Magnetism, 2018, 31, 1351-1357.	1.8	0
31	Material-Device-Circuit Co-Design of 2-D Materials-Based Lateral Tunnel FETs. IEEE Journal of the Electron Devices Society, 2018, 6, 979-986.	2.1	8
32	Machine Learning for Fast Characterization of Magnetic Logic Devices. , 2018, , .		7
33	Instant-On Spin Torque in Noncollinear Magnetic Tunnel Junctions. Physical Review Applied, 2018, 10, .	3.8	14
34	Carrier Transport in a Two-Dimensional Topological Insulator Nanoribbon in the Presence of Vacancy Defects.. , 2018, , .		0
35	Self-consistent procedure including envelope function normalization for full-zone SchrÃ¶dinger-Poisson problems with transmitting boundary conditions. Journal of Applied Physics, 2018, 124, 204501.	2.5	1
36	Energy filtering in silicon nanowires and nanosheets using a geometric superlattice and its use for steep-slope transistors. Journal of Applied Physics, 2018, 124, .	2.5	5

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37	Graphene Interconnects - High Performance Twisted 20 nm Graphene Ribbons. , 2018, , .		1
38	Boosting Carrier Mobility of Synthetic Few Layer Graphene on SiO₂ by Interlayer Rotation and Decoupling. Advanced Materials Interfaces, 2018, 5, 1800454.	3.7	19
39	Band-Tails Tunneling Resolving the Theory-Experiment Discrepancy in Esaki Diodes. IEEE Journal of the Electron Devices Society, 2018, 6, 633-641.	2.1	14
40	Modeling of Edge Scattering in Graphene Interconnects. IEEE Electron Device Letters, 2018, 39, 1085-1088.	3.9	5
41	Impact of calibrated band-tails on the subthreshold swing of pocketed TFETs. , 2018, , .		2
42	Anisotropic bulk and planar Heisenberg ferromagnets in uniform, arbitrarily oriented magnetic fields. Journal of Physics Condensed Matter, 2018, 30, 275801.	1.8	6
43	Resistivity scaling model for metals with conduction band anisotropy. Physical Review Materials, 2018, 2, .	2.4	7
44	Non-volatile spin wave majority gate at the nanoscale. AIP Advances, 2017, 7, .	1.3	31
45	Exchange-driven Magnetic Logic. Scientific Reports, 2017, 7, 12154.	3.3	17
46	Efficient solution of the Wignerâ€“Liouville equation using a spectral decomposition of the force field. Journal of Computational Physics, 2017, 350, 314-325.	3.8	16
47	Micromagnetic simulations of magnetoelastic spin wave excitation in scaled magnetic waveguides. Applied Physics Letters, 2017, 111, .	3.3	27
48	Material selection and device design guidelines for two-dimensional materials based TFETs. , 2017, , .		1
49	Material-Device-Circuit Co-optimization of 2D Material based FETs for Ultra-Scaled Technology Nodes. Scientific Reports, 2017, 7, 5016.	3.3	16
50	Design and simulation of plasmonic interference-based majority gate. AIP Advances, 2017, 7, 065116.	1.3	4
51	Doping of graphene for the application in nano-interconnect. Microelectronic Engineering, 2017, 167, 42-46.	2.4	12
52	Resistivity scaling in metallic thin films and nanowires due to grain boundary and surface roughness scattering. Microelectronic Engineering, 2017, 167, 37-41.	2.4	8
53	Evaluation of multilayer graphene for advanced interconnects. Microelectronic Engineering, 2017, 167, 1-5.	2.4	9
54	Inherent transmission probability limit between valence-band and conduction-band states and calibration of tunnel-FET parasitics. , 2017, , .		1

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55	Benchmarking of monolithic 3D integrated MX<inf>2</inf> FETs with Si FinFETs. , 2017, , .		12
56	Calibration of the high-doping induced ballistic band-tails tunneling current with In<inf>0.53</inf>Ga<inf>0.47</inf>As Esaki diodes. , 2017, , .		0
57	Proposal for nanoscale cascaded plasmonic majority gates for non-Boolean computation. Scientific Reports, 2017, 7, 17866.	3.3	19
58	Self-consistent 30-band simulation approach for (non-)uniformly strained confined heterostructure tunnel field-effect transistors. , 2017, , .		0
59	Skyrmion electrical detection with the use of three-dimensional Topological Insulators/Ferromagnetic bilayers. Scientific Reports, 2017, 7, 17871.	3.3	7
60	Skyrmion-induced bound states on the surface of three-dimensional topological insulators. Journal of Applied Physics, 2016, 119, 193903.	2.5	11
61	Comparison of short-channel effects in monolayer MoS2 based junctionless and inversion-mode field-effect transistors. Applied Physics Letters, 2016, 108, 023506.	3.3	17
62	Electric-field induced quantum broadening of the characteristic energy level of traps in semiconductors and oxides. Journal of Applied Physics, 2016, 120, .	2.5	9
63	Inter-ribbon tunneling in graphene: An atomistic Bardeen approach. Journal of Applied Physics, 2016, 119, 214306.	2.5	9
64	Validity criteria for Fermiâ€™s golden rule scattering rates applied to metallic nanowires. Journal of Physics Condensed Matter, 2016, 28, 365302.	1.8	2
65	Multi-layer graphene interconnect. , 2016, , .		0
66	Non-uniform strain in lattice-mismatched heterostructure tunnel field-effect transistors. , 2016, , .		6
67	Modeling of graphene for interconnect applications. , 2016, , .		8
68	Uniform Strain in Heterostructure Tunnel Field-Effect Transistors. IEEE Electron Device Letters, 2016, 37, 337-340.	3.9	23
69	Single- and multilayer graphene wires as alternative interconnects. Microelectronic Engineering, 2016, 156, 131-135.	2.4	16
70	Spintronic majority gates. , 2015, , .		19
71	Modeling surface roughness scattering in metallic nanowires. Journal of Applied Physics, 2015, 118, .	2.5	18
72	Full-zone spectral envelope function formalism for the optimization of line and point tunnel field-effect transistors. Journal of Applied Physics, 2015, 118, .	2.5	13

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73	Modeling and tackling resistivity scaling in metal nanowires. , 2015, , .		0
74	Analytic solution of andoâ€™s surface roughness model with finite domain distribution functions. , 2015, , .		0
75	Modeling of inter-ribbon tunneling in graphene. , 2015, , .		2
76	15-band spectral envelope function formalism applied to broken gap tunnel field-effect transistors. , 2015, , .		2
77	Graphene wires as alternative interconnects. , 2015, , .		6
78	Electron relaxation times and resistivity in metallic nanowires due to tilted grain boundary planes. , 2015, , .		3
79	Area and routing efficiency of SWD circuits compared to advanced CMOS. , 2015, , .		4
80	Design and benchmarking of hybrid CMOS-Spin Wave Device Circuits compared to 10nm CMOS. , 2015, , .		34
81	An envelope function formalism for lattice-matched heterostructures. Physica B: Condensed Matter, 2015, 470-471, 69-75.	2.7	6
82	Perspective of tunnel-FET for future low-power technology nodes. , 2014, , .		17
83	System-level assessment and area evaluation of spin wave logic circuits. , 2014, , .		4
84	Improved source design for p-type tunnel field-effect transistors: Towards truly complementary logic. Applied Physics Letters, 2014, 105, .	3.3	16
85	Resistivity scaling and electron relaxation times in metallic nanowires. Journal of Applied Physics, 2014, 116, 063714.	2.5	20
86	Spectral force approach to solve the time-dependent Wigner-Liouville equation. , 2014, , .		1
87	System-level assessment and area evaluation of Spin Wave logic circuits. , 2014, , .		9
88	Superior Reliability of Junctionless pFinFETs by Reduced Oxide Electric Field. IEEE Electron Device Letters, 2014, 35, 1179-1181.	3.9	31
89	InGaAs tunnel diodes for the calibration of semi-classical and quantum mechanical band-to-band tunneling models. Journal of Applied Physics, 2014, 115, .	2.5	45
90	Quantum mechanical solver for confined heterostructure tunnel field-effect transistors. Journal of Applied Physics, 2014, 115, 053706.	2.5	20

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91	Can p-channel tunnel field-effect transistors perform as good as n-channel?. Applied Physics Letters, 2014, 105, .	3.3	12
92	Tensile strained Ge tunnel field-effect transistors: kâ€‰Â·â€‰p material modeling and numerical device simulation. Journal of Applied Physics, 2014, 115, 044505.	2.5	34
93	Impact of band non-parabolicity on the onset voltage in a nanowire tunnel field-effect transistor. , 2013, , .		0
94	Phonon-assisted Zener tunneling in a pâ€“n diode silicon nanowire. Solid-State Electronics, 2013, 79, 196-200.	1.4	2
95	Phonon-assisted Zener tunneling in a cylindrical nanowire transistor. Journal of Applied Physics, 2013, 113, 184507.	2.5	7
96	Towards CMOS-compatible single-walled carbon nanotube resonators. Microelectronic Engineering, 2013, 107, 219-222.	2.4	6
97	Figure of merit for and identification of sub-60â€‰mV/decade devices. Applied Physics Letters, 2013, 102, .	3.3	95
98	A model determining optimal doping concentration and materialâ€™s band gap of tunnel field-effect transistors. Applied Physics Letters, 2012, 100, .	3.3	36
99	Quantum simulations of electrostatics in Si cylindrical junctionless nanowire nFETs and pFETs with a homogeneous channel including strain and arbitrary crystallographic orientations. Solid-State Electronics, 2012, 71, 30-36.	1.4	2
100	Modeling the impact of junction angles in tunnel field-effect transistors. Solid-State Electronics, 2012, 69, 31-37.	1.4	10
101	Direct and Indirect Band-to-Band Tunneling in Germanium-Based TFETs. IEEE Transactions on Electron Devices, 2012, 59, 292-301.	3.0	370
102	Optimization of Gate-on-Source-Only Tunnel FETs With Counter-Doped Pockets. IEEE Transactions on Electron Devices, 2012, 59, 2070-2077.	3.0	126
103	The Junctionless Nanowire Transistor. , 2012, , 303-337.		0
104	Field induced quantum confinement in Indirect Semiconductors: Quantum mechanical and modified semiclassical model. , 2011, , .		12
105	Quantum simulations of electrostatics in Si cylindrical nanowire pinch-off nFETs and pFETs with a homogeneous channel including strain and arbitrary crystallographic orientations. , 2011, , .		1
106	Advancing CMOS beyond the Si roadmap with Ge and III/V devices. , 2011, , .		43
107	Si-based tunnel field-effect transistors for low-power nano-electronics. , 2011, , .		12
108	Generalized phonon-assisted Zener tunneling in indirect semiconductors with non-uniform electric fields: A rigorous approach. Journal of Applied Physics, 2011, 109, 124503.	2.5	48

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109	Low-field mobility in ultrathin silicon nanowire junctionless transistors. Applied Physics Letters, 2011, 99, .	3.3	29
110	Two-dimensional quantum mechanical modeling of band-to-band tunneling in indirect semiconductors. , 2011, , .		21
111	Impact of field-induced quantum confinement in tunneling field-effect devices. Applied Physics Letters, 2011, 98, .	3.3	99
112	Comparison of strained SiGe heterostructure-on-insulator (001) and (110) PMOSFETs: Câ€“V characteristics, mobility, and ON current. Solid-State Electronics, 2011, 65-66, 64-71.	1.4	4
113	Long-wavelength, confined optical phonons in InAs nanowires probed by Raman spectroscopy. European Physical Journal B, 2011, 79, 423-428.	1.5	11
114	Quantum ballistic transport in the junctionless nanowire pinch-off field effect transistor. Journal of Computational Electronics, 2011, 10, 216-221.	2.5	16
115	Temperature-Dependent Modeling and Characterization of Through-Silicon Via Capacitance. IEEE Electron Device Letters, 2011, 32, 563-565.	3.9	42
116	Modeling the capacitance-voltage response of In0.53Ga0.47As metal-oxide-semiconductor structures: Charge quantization and nonparabolic corrections. Applied Physics Letters, 2010, 96, 213514.	3.3	25
117	Shaping the future of nanoelectronics beyond the Si roadmap with new materials and devices. Proceedings of SPIE, 2010, , .	0.8	2
118	Novel Device Concepts for Nanotechnology: The Nanowire Pinch-Off FET and Graphene TunnelFET. ECS Transactions, 2010, 28, 15-26.	0.5	14
119	Calculation of the electron mobility in III-V inversion layers with high-Îº dielectrics. Journal of Applied Physics, 2010, 108, 103705.	2.5	29
120	Zener tunneling in semiconductors under nonuniform electric fields. Journal of Applied Physics, 2010, 107, 054520.	2.5	27
121	Modeling the single-gate, double-gate, and gate-all-around tunnel field-effect transistor. Journal of Applied Physics, 2010, 107, .	2.5	217
122	Theory of hole mobility in strained Ge and III-V p-channel inversion layers with high-Îº insulators. Journal of Applied Physics, 2010, 108, 123713.	2.5	17
123	Tuning the Fermi Level of SiO₂-Supported Single-Layer Graphene by Thermal Annealing. Journal of Physical Chemistry C, 2010, 114, 6894-6900.	3.1	75
124	Tunneling-lifetime model for metal-oxide-semiconductor structures. Physical Review B, 2009, 80, .	3.2	2
125	Modeling of Alternative High-k Dielectrics for Memory Based Applications. ECS Transactions, 2009, 25, 131-145.	0.5	3
126	Ballistic current in metal-oxide-semiconductor field-effect transistors: The role of device topology. Journal of Applied Physics, 2009, 106, 053702.	2.5	2

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127	Modeling drive currents and leakage currents: aÂdynamicÂapproach. Journal of Computational Electronics, 2009, 8, 307-323.	2.5	3
128	Physical modeling of strain-dependent hole mobility in Ge p-channel inversion layers. Journal of Applied Physics, 2009, 106, .	2.5	30
129	Silicon nanowire pinch-off FET : Basic operation and analytical model. , 2009, , .		16
130	Time dependent transport in 1D micro- and nanostructures: Solving the Boltzmann and Wignerâ€“Boltzmann equations. Journal of Physics: Conference Series, 2009, 193, 012004.	0.4	2
131	Zener tunnelling in graphene based semiconductors â€“ the kÂ·p method. Journal of Physics: Conference Series, 2009, 193, 012111.	0.4	3
132	General 2D SchrÃ¶dinger-Poisson solver with open boundary conditions for nano-scale CMOS transistors. Journal of Computational Electronics, 2008, 7, 475-484.	2.5	3
133	Quantum transport in an ultra-thin SOI MOSFET: Influence of the channel thickness on the Iâ€“V characteristics. Solid State Communications, 2008, 147, 31-35.	1.9	11
134	Analytical model for point and line tunneling in a tunnel field-effect transistor. , 2008, , .		74
135	Analytical model for a tunnel field-effect transistor. , 2008, , .		77
136	Analytical and self-consistent quantum mechanical model forÂaÂsurrounding gate MOS nanowire operated in JFET mode. Journal of Computational Electronics, 2008, 7, 380-383.	2.5	87
137	Conductance of a copper-nanotube bundle interface: Impact of interface geometry and wave-function interference. Physical Review B, 2008, 77, .	3.2	10
138	Quantized Conductance without the Reservoir Picture. AIP Conference Proceedings, 2007, , .	0.4	0
139	Quantized conductance without reservoirs: Method of the nonequilibrium statistical operator. Journal of Computational Electronics, 2007, 6, 255-258.	2.5	1
140	Study of the Junction Depth Effect on Ballistic Current Using the Subband Decomposition Method. , 2007, , 205-208.		1
141	A Simplified Quantum Mechanical Model for the Electron Distribution in a Si Nanowire. , 2007, , 321-324.		0
142	A method to calculate tunneling leakage currents in silicon inversion layers. Journal of Applied Physics, 2006, 100, 033708.	2.5	2
143	First-principle calculations on gate/dielectric interfaces: on the origin of work function shifts. Microelectronic Engineering, 2005, 80, 272-279.	2.4	32
144	Barrier permeation effects on the inversion layer subband structure and its applications to the electron mobility. Microelectronic Engineering, 2005, 80, 82-85.	2.4	5

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145	Nonequilibrium mesoscopic quantum transport and conductance quantization. Semiconductor Science and Technology, 2004, 19, S235-S237.	2.0	2
146	Quantum transport in a nanosize double-gate metal-oxide-semiconductor field-effect transistor. Journal of Applied Physics, 2004, 96, 2305-2310.	2.5	17
147	Conductance quantization and dissipation. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 310, 322-328.	2.1	9
148	Quantum transport in a nanosize silicon-on-insulator metal-oxide-semiconductor field-effect transistor. Journal of Applied Physics, 2003, 93, 1230-1240.	2.5	18
149	Energy dissipation in mesoscopic circuits. , 2003, , .		0
150	Energy and momentum balance equations: An approach to quantum transport in closed circuits. Physical Review B, 2002, 66, .	3.2	9
151	Quantum transport in a cylindrical sub-0.1 Î¼m silicon-based MOSFET. Solid-State Electronics, 2002, 46, 435-444.	1.4	16
152	Quantum mechanical balance equations for modeling transport in closed electric circuits.. , 2001, , 320-323.		1
153	Quantum transport modeling in mesoscopic structures. , 0, , .		0
154	A new method to calculate leakage current and its applications for sub-45nm MOSFETs. , 0, , .		0
155	Finite difference magnetoelastic simulator. Open Research Europe, 0, 1, 35.	2.0	10