Mikhail E Portnoi

List of Publications by Year
in descending order

133 papers	2,360 citations	159358 30 h-index	233125 45 g-index
136 all docs	136 docs citations	136 times ranked	1468 citing authors

#	Article	IF	Citations
1	Terahertz science and technology of carbon nanomaterials. Nanotechnology, 2014, 25, 322001.	1.3	156
2	Smooth electron waveguides in graphene. Physical Review B, 2010, 81, .	1.1	114
3	Generation of Terahertz Radiation by Hot Electrons in Carbon Nanotubes. Nano Letters, 2007, 7, 3414-3417.	4.5	100
4	Terahertz applications of carbon nanotubes. Superlattices and Microstructures, 2008, 43, 399-407.	1.4	99
5	Zero-energy states in graphene quantum dots and rings. Physical Review B, 2011, 84, .	1.1	80
6	The two-dimensional hydrogen atom revisited. Journal of Mathematical Physics, 2002, 43, 4681.	0.5	76
7	Superlattice properties of carbon nanotubes in a transverse electric field. Physical Review B, 2005, 71, .	1.1	73
8	Quasi-exact solution to the Dirac equation for the hyperbolic-secant potential. Physical Review A, 2014, 89, .	1.0	72
9	Carbon nanotubes as a basis for terahertz emitters and detectors. Microelectronics Journal, 2009, 40, 776-778.	1.1	56
10	Exciton Storage in a Nanoscale Aharonov-Bohm Ring with Electric Field Tuning. Physical Review Letters, 2009, 102, 096405.	2.9	53
11	Terahertz processes in carbon nanotubes. Journal of Nanophotonics, 2010, 4, 041665.	0.4	52
12	Excitons in narrow-gap carbon nanotubes. Physical Review B, 2011, 84, .	1.1	50
13	One-dimensional Coulomb problem in Dirac materials. Physical Review A, 2014, 90, .	1.0	49
14	Carbon Nanotubes: A New Type of Emitter in the Terahertz Range. Technical Physics Letters, 2005, 31, 671.	0.2	48
15	Bielectron vortices in two-dimensional Dirac semimetals. Nature Communications, 2017, 8, 897.	5.8	48
16	Electro-optical properties of phosphorene quantum dots. Physical Review B, 2017, 96, .	1.1	48
17	Searching for confined modes in graphene channels: The variable phase method. Physical Review B, 2012, 86, .	1.1	45
18	Optical selection rules of zigzag graphene nanoribbons. Physical Review B, 2017, 95, .	1.1	44

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19	Superlattice Properties of Helical Nanostructures in a Transverse Electric Field. Electromagnetics, 2005, 25, 425-435.	0.3	42
20	Massless Dirac fermions in two dimensions: Confinement in nonuniform magnetic fields. Physical Review B, 2016, 94, .	1.1	41
21	Variable-phase method and Levinson's theorem in two dimensions: Application to a screened Coulomb potential. Solid State Communications, 1997, 103, 325-329.	0.9	38
22	MAGNETICALLY CONTROLLED TERAHERTZ ABSORPTION AND EMISSION IN CARBON NANOTUBES. International Journal of Modern Physics B, 2009, 23, 2846-2850.	1.0	37
23	Ionization degree of the electron-hole plasma in semiconductor quantum wells. Physical Review B, 1999, 60, 5570-5581.	1.1	36
24	Two-phonon scattering of magnetorotons in fractional quantum Hall liquids. Physical Review B, 2002, 66, .	1.1	34
25	Electric dipole moment oscillations in Aharonov-Bohm quantum rings. Physical Review B, 2012, 85, .	1.1	34
26	Electro-absorption of silicene and bilayer graphene quantum dots. Journal of Applied Physics, 2016, 120, .	1.1	34
27	Temperature dependence of the breakdown of the quantum Hall effect studied by induced currents. Physical Review B, 2004, 70, .	1.1	33
28	Anyon excitons. Physical Review Letters, 1993, 70, 3315-3318.	2.9	32
29	Tuning gaps and phases of a two-subband system in a quantizing magnetic field. Physical Review B, 2002, 65, .	1.1	32
30	Optimal traps in graphene. Physical Review B, 2015, 92, .	1.1	31
31	Magnetic quantum dots and rings in two dimensions. Physical Review B, 2016, 94, .	1.1	29
32	Localization of massless Dirac particles via spatial modulations of the Fermi velocity. Journal of Physics Condensed Matter, 2017, 29, 315301.	0.7	29
33	Two-dimensional Dirac particles in a PÃ¶schl-Teller waveguide. Scientific Reports, 2017, 7, 11599.	1.6	28
34	Strong Lightâ€"Matter Coupling in Carbon Nanotubes as a Route to Exciton Brightening. ACS Photonics, 2019, 6, 904-914.	3.2	27
35	Aharonov-Bohm quantum rings in high-Qmicrocavities. Physical Review B, 2013, 88, .	1.1	25
36	Excitonic Fine Structure in Emission of Linear Carbon Chains. Nano Letters, 2020, 20, 6502-6509.	4.5	25

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37	Nanoscale Electromagnetic Compatibility: Quantum Coupling and Matching in Nanocircuits. IEEE Transactions on Electromagnetic Compatibility, 2015, 57, 1645-1654.	1.4	24
38	Levinsonâ€™s theorem and scattering phase-shift contributions to the partition function of interacting gases in two dimensions. Physical Review B, 1998, 58, 3963-3968.	1.1	23
39	TE and TM optical gains in AlGaAs/GaAs single-quantum-well lasers. Semiconductor Science and Technology, 1993, 8, 80-87.	1.0	22
40	Interband transitions in narrow-gap carbon nanotubes and graphene nanoribbons. Journal of Applied Physics, 2019, 125, .	1.1	21
41	Electron-phonon scattering at the intersection of two Landau levels. Physical Review B, 2006, 74, .	1.1	17
42	Semiconductor nanohelix in electric field: A superlattice of the new type. Technical Physics Letters, 2007, 33, 878-880.	0.2	16
43	Theory of the excitonic Mott transition in quasi-two-dimensional systems. Superlattices and Microstructures, 2008, 43, 460-464.	1.4	16
44	Hidden correlation between absorption peaks in achiral carbon nanotubes and nanoribbons. Journal of Saudi Chemical Society, 2018, 22, 985-992.	2.4	15
45	Multilayer phosphorene quantum dots in an electric field: Energy levels and optical absorption. Journal of Applied Physics, 2018, 124, .	1.1	15
46	Theory of anyon excitons: Relation to excitons of Î½=1/3 and Î½=2/3 incompressible liquids. Physical Review B, 1996, 54, 13791-13806.	1.1	14
47	Use of the Faraday optical transformer for ultrafast magnetization reversal of nanomagnets. Journal of Nanophotonics, 2007, 1, 013502.	0.4	14
48	Nanohelices as superlattices: Bloch oscillations and electric dipole transitions. Physical Review B, 2016, 94, .	1.1	14
49	Generation of femtosecond current pulses using the inverse magneto-optical Faraday effect. Technical Physics Letters, 2005, 31, 1047-1048.	0.2	12
50	Terahertz emitters and detectors based on carbon nanotubes. , 2006, , .		12
51	Superlattice properties of semiconductor nanohelices in a transverse electric field. Physica E: Low-Dimensional Systems and Nanostructures, 2008, 40, 1899-1901.	1.3	12
52	Pair states in one-dimensional Dirac systems. Physical Review A, 2017, 95, .	1.0	12
53	Zeroâ€Energy Vortices in Dirac Materials. Physica Status Solidi (B): Basic Research, 2019, 256, 1800584.	0.7	12
54	Optical absorption in two-dimensional materials with tilted Dirac cones. Physical Review B, 2022, 105, .	1.1	12

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55	Theory of excitonic Mott transition in double quantum wells. Physica Status Solidi C: Current Topics in Solid State Physics, 2004, 1, 1357-1362.	0.8	11
56	Anomalous electromagnetic coupling via entanglement at the nanoscale. New Journal of Physics, 2017, 19, 023014.	1.2	11
57	Terahertz transitions in Aharonov-Bohm quantum rings in an external electric field. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 1309-1314.	0.8	10
58	Tuning terahertz transitions in a double-gated quantum ring. Physical Review B, 2017, 96, .	1.1	10
59	Anyon exciton revisited:â€‚â€‚Exact solutions for a few-particle system. Physical Review B, 2003, 68, .	1.1	9
60	Terahertz transitions in quasi-metallic carbon nanotubes. IOP Conference Series: Materials Science and Engineering, 2015, 79, 012014.	0.3	9
61	Bipolar electron waveguides in graphene. Physical Review B, 2020, 102, .	1.1	9
62	Photon Recycling White Light Emitting Diode Based on InGaN Multiple Quantum Well Heterostructure. Physica Status Solidi A, 2001, 183, 177-182.	1.7	8
63	Carbon nanotubes as a basis for novel terahertz devices. Physica E: Low-Dimensional Systems and Nanostructures, 2008, 40, 1766-1768.	1.3	8
64	Photon emission induced by elastic exciton-carrier scattering in semiconductor quantum wells. European Physical Journal B, 2008, 65, 195-206.	0.6	8
65	One-dimensional Van Hove polaritons. Physical Review B, 2013, 87, .	1.1	8
66	Guided modes and terahertz transitions for two-dimensional Dirac fermions in a smooth double-well potential. Physical Review A, 2020, 102, .	1.0	8
67	Mechanisms of terahertz emission from carbon nanotubes. Physica B: Condensed Matter, 2010, 405, 3054-3056.	1.3	7
68	Trapping Charge Carriers in Low-Dimensional Dirac Materials. International Journal of Nanoscience, 2019, 18, 1940001.	0.4	7
69	Carbon nanotube array as a van der Waals two-dimensional hyperbolic material. Physical Review B, 2019, 100, .	1.1	7
70	BREAKDOWN OF THE QUANTUM HALL EFFECTS IN HOLE SYSTEMS AT HIGH INDUCED CURRENTS. International Journal of Modern Physics B, 2004, 18, 3537-3540.	1.0	6
71	Exciton states in narrow-gap carbon nanotubes. AIP Conference Proceedings, 2016, , .	0.3	6
72	Induced currents, frozen charges and the quantum Hall effect breakdown. Solid State Communications, 2005, 134, 257-259.	0.9	5

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73	Spin-orbit terms in multi-subband electron systems: a bridge between bulk and two-dimensional Hamiltonians. Semiconductors, 2008, 42, 989-993.	0.2	4
74	Quasi-exact solutions for guided modes in two-dimensional materials with tilted Dirac cones. Scientific Reports, 2022, 12, 7688.	1.6	4
75	FOUR-PARTICLE ANYON EXCITON: BOSON APPROXIMATION. Modern Physics Letters B, 1995, 09, 123-133.	1.0	3
76	Screened excitons in wide-gap semiconductors and quantum wells. Journal of Crystal Growth, 1998, 184-185, 676-681.	0.7	3
77	Statistical Mechanics of Screened Spatially Indirect Excitons. Physica Status Solidi A, 2002, 190, 655-660.	1.7	3
78	Two-subband system in quantizing magnetic field: probing many-body gap by non-equilibrium phonons. Physica E: Low-Dimensional Systems and Nanostructures, 2002, 15, 202-210.	1.3	3
79	Mott transition of spatially indirect excitons. , 2004, , .		3
80	Helical nanostructures and Aharonov-Bohm quantum rings in a transverse electric field. AIP Conference Proceedings, 2007, , .	0.3	3
81	Two-phonon scattering in graphene in the quantum Hall regime. Physical Review B, 2015, 92, .	1.1	3
82	Terahertz Applications of Carbon Nanotubes and Graphene Nanoribbons. , 2015, , .		3
83	Electromagnetic Properties of Nanohelices. NATO Science for Peace and Security Series B: Physics and Biophysics, 2016, , 27-44.	0.2	3
84	Tuning terahertz transitions in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>cyclo</mml:mi><mml:mo>[</mml:mo><mml:mi>n</mml: rings. Physical Review B, 2022, 106, .	1.1	3
85	Theory of optical orientation and alignment in quantum wells. Superlattices and Microstructures, 1991, 10, 371-374.	1.4	2
86	Spectroscopy of the fractional quantum Hall effect: Manifestation of fractional charges. Journal of Luminescence, 1994, 60-61, 782-785.	1.5	2
87	Ionization Degree of Electron-Hole Plasma in GaN/AlGaN Quantum Wells. Physica Status Solidi A, 2002, 190, 113-119.	1.7	2
88	Phonon-Assisted Luminescence of Magnetoexcitons in Semiconductor Quantum Wells. Physica Status Solidi A, 2002, 190, 661-665.	1.7	2
89	HIGH-CURRENT BREAKDOWN OF THE QUANTUM HALL EFFECT. International Journal of Modern Physics B, 2004, 18, 3593-3596.	1.0	2
90	Excitons and interband terahertz transitions in narrow-gap carbon nanotubes. , 2013, , .		2

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91	Electromagnetic compatibility in nano-electronics: Manifestation and suppression of quantum crosstalk. , 2015, , .		2
92	Equivalent electrical multiport for quantum systems in entangled states. , 2015, , .		2
93	Terahertz Optoelectronics of Quantum Rings and Nanohelices. Semiconductors, 2018, 52, 1813-1816.	0.2	2
94	Double-Gated Nanohelix as a Novel Tunable Binary Superlattice. Nanoscale Research Letters, 2019, 14, 257.	3.1	2
95	Terahertz transitions in finite carbon chains. Physical Review Research, 2021, 3, .	1.3	2
96	TUNING THz TRANSITIONS IN A QUANTUM RING WITH TWO GATES. , 2017, , 172-175.		2
97	Exciton/Free-Carrier Plasma in GaN-Based Quantum Wells: Scattering and Screening. Physica Status Solidi A, 2001, 183, 87-90.	1.7	1
98	Optical Nonlinearities in a Microcavity with InGaN Quantum Wells: Self-Assembled Quantum Dots Approach. Physica Status Solidi A, 2002, 190, 193-198.	1.7	1
99	Electronâ€“phonon interaction in a two-subband quasi-2D system in a quantizing magnetic field. Physica E: Low-Dimensional Systems and Nanostructures, 2002, 12, 470-473.	1.3	1
100	Two-dimensional exciton revisited. Physica E: Low-Dimensional Systems and Nanostructures, 2003, 17, 212-214.	1.3	1
101	Phonon-assisted recombination of intra-subband magnetoexcitons and two-phonon dissociation of magnetorotons in the quantum Hall regime. Physica E: Low-Dimensional Systems and Nanostructures, 2003, 17, 217-219.	1.3	1
102	Temperature-dependent high-current breakdown of the quantum Hall effect. Physica E: Low-Dimensional Systems and Nanostructures, 2004, 22, 201-204.	1.3	1
103	Breakdown of the Quantum Hall Effects in Hole Systems at High Induced Currents. AIP Conference Proceedings, 2005, , .	0.3	1
104	Excitonic Mott transition in spatially-separated electron-hole systems. AIP Conference Proceedings, 2005, , .	0.3	1
105	Carbon Nanotubes and Graphene Nanoribbons for Terahertz Applications. NATO Science for Peace and Security Series B: Physics and Biophysics, 2016, , 103-123.	0.2	1
106	Terahertz transitions in narrow-gap carbon nanotubes and graphene nanoribbons. Journal of Physics: Conference Series, 2018, 1092, 012121.	0.3	1
107	Quantum Rings in Electromagnetic Fields. Nanoscience and Technology, 2018, , 347-409.	1.5	1
108	Interband transitions in narrow-gap carbon nanotubes and graphene nanoribbons. , 2019, , 99-117.		1

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109	Terahertz Applications of Non-Simply-Connected and Helical Nanostructures. NATO Science for Peace and Security Series B: Physics and Biophysics, 2019, , 201-214.	0.2	1
110	A Graphene THz Detector based on Plasmon Resonances and Interband Transitions. , 2021, , .		1
111	EXACTLY-SOLVABLE PROBLEMS FOR TWO-DIMENSIONAL EXCITONS. , 2005, , .		1
112	Four-particle two-dimensional magnetoexciton. Nuovo Cimento Della Societa Italiana Di Fisica D - Condensed Matter, Atomic, Molecular and Chemical Physics, Biophysics, 1995, 17, 1669-1673.	0.4	0
113	Exciton/free carrier plasma in wide-gap semiconductors. , 0, , .		0
114	Two-dimensional exciton: Unexpected beauty. Physica Status Solidi A, 2003, 195, 596-599.	1.7	0
115	FEW-PARTICLE ANYON EXCITON: EXACT SOLUTIONS. International Journal of Nanoscience, 2003, 02, 461-468.	0.4	0
116	Addendum: â€œThe two-dimensional hydrogen atom revisitedâ€•[J. Math. Phys. 43, 4681 (2002)]. Journal of Mathematical Physics, 2003, 44, 1453-1453.	0.5	0
117	Exact solutions for a few-particle exciton in the fractional quantum Hall regime. Physica Status Solidi C: Current Topics in Solid State Physics, 2004, 1, 1363-1366.	0.8	0
118	Superlattice behavior of carbon nanotubes in a transverse electric field. , 2004, , .		0
119	High-Current Breakdown of the Quantum Hall Effect. AIP Conference Proceedings, 2005, , .	0.3	0
120	A new type of superlattice based on carbon nanotubes. AIP Conference Proceedings, 2005, , .	0.3	0
121	Exact solutions for few-particle anyon excitons. AIP Conference Proceedings, 2005, , .	0.3	0
122	Generation of femtosecond electromagnetic pulses at the nanoscale. , 2006, , .		0
123	Carbon nanotubes as terahertz emitters and detectors. AIP Conference Proceedings, 2007, , .	0.3	0
124	Quantum entanglement in electric circuits: From anomalous crosstalk to electromagnetic compatibility in nano-electronics. , 2016, , .		0
125	TERAHERTZ TRANSITIONS IN NARROW-GAP CARBON NANOTUBES AND GRAPHENE NANORIBBONS. , 2017, , 176-179.		0
126	Terahertz transitions in carbon nanotubes and graphene nanoribbons. , 2017, , .		0

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127	Ab-initio study of electronic properties of a two-dimensional array of carbon nanotubes. Journal of Physics: Conference Series, 2018, 1092, 012120.	0.3	0
128	BREAKDOWN OF THE QUANTUM HALL EFFECTS IN HOLE SYSTEMS AT HIGH INDUCED CURRENTS. , 2005, , .		0
129	HIGH-CURRENT BREAKDOWN OF THE QUANTUM HALL EFFECT. , 2005, , .		0
130	Prospective Terahertz Applications of Carbon Nanotubes. NATO Science for Peace and Security Series B: Physics and Biophysics, 2008, , 81-93.	0.2	0
131	TERAHERTZ PROCESSES IN CARBON NANOTUBES CONTROLLED BY A MAGNETIC FIELD. , 2011, , .		0
132	Screened excitons in wide-gap semiconductors and quantum wells. Journal of Crystal Growth, 1998, 184-185, 676-681.	0.7	0
133	Middle- and far-infrared detector based on the plane collection of graphene strips. , 2021, 65, 661-667.	0.0	0