

Bartłomiej Szafran

List of Publications by Year in descending order

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174
papers

3,075
citations

172386

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181
all docs

181
docs citations

181
times ranked

1316
citing authors

#	ARTICLE	IF	CITATIONS
1	Electron pair in a Gaussian confining potential. <i>Physical Review B</i> , 2000, 62, 4234-4237.	1.1	182
2	Parity symmetry and energy spectrum of excitons in coupled self-assembled quantum dots. <i>Physical Review B</i> , 2001, 64, .	1.1	135
3	Many-electron artificial atoms. <i>Physical Review B</i> , 1999, 59, 13036-13042.	1.1	118
4	Modeling of electronic properties of electrostatic quantum dots. <i>Physical Review B</i> , 2003, 68, .	1.1	101
5	Four-electron quantum dot in a magnetic field. <i>Physical Review B</i> , 2003, 68, .	1.1	93
6	Modelling of confinement potentials in quantum dots. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2002, 15, 261-268.	1.3	85
7	Wannier-Bloch Approach to Localization in High-Harmonics Generation in Solids. <i>Physical Review X</i> , 2017, 7, .	2.8	83
8	Effective interaction for charge carriers confined in quasi-one-dimensional nanostructures. <i>Physical Review B</i> , 2003, 68, .	1.1	78
9	Ground and excited states of few-electron systems in spherical quantum dots. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 1999, 4, 1-10.	1.3	77
10	LO-phonon-induced screening of electron-electron interaction in D^0 centres and quantum dots. <i>Journal of Physics Condensed Matter</i> , 2005, 17, 4489-4500.	0.7	69
11	Few-electron eigenstates of concentric double quantum rings. <i>Physical Review B</i> , 2005, 72, .	1.1	68
12	Exciton and negative trion dissociation by an external electric field in vertically coupled quantum dots. <i>Physical Review B</i> , 2005, 71, .	1.1	58
13	Electron-electron correlation in quantum dots. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 1999, 5, 185-195.	1.3	56
14	Time-dependent simulations of electron transport through a quantum ring: Effect of the Lorentz force. <i>Physical Review B</i> , 2005, 72, .	1.1	50
15	Spatial ordering of charge and spin in quasi-one-dimensional Wigner molecules. <i>Physical Review B</i> , 2004, 70, .	1.1	49
16	Energy spectrum of centres in spherical quantum dots. <i>Journal of Physics Condensed Matter</i> , 1998, 10, 7575-7586.	0.7	46
17	Wave packet dynamics in semiconductor quantum rings of finite width. <i>Physical Review B</i> , 2009, 80, .	1.1	44
18	Theoretical description of electronic properties of vertical gated quantum dots. <i>Physical Review B</i> , 2001, 64, .	1.1	43

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19	Excitonic trions in single and double quantum dots. <i>Physical Review B</i> , 2002, 66, .	1.1	43
20	Anisotropic quantum dots: Correspondence between quantum and classical Wigner molecules, parity symmetry, and broken-symmetry states. <i>Physical Review B</i> , 2004, 69, .	1.1	43
21	Electrostatic quantum dots with designed shape of confinement potential. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2003, 17, 494-497.	1.3	41
22	Spin-orbit coupling effects in two-dimensional circular quantum rings: Elliptical deformation of confined electron density. <i>Physical Review B</i> , 2009, 80, .	1.1	40
23	Stark effect on the exciton spectra of vertically coupled quantum dots: Horizontal field orientation and nonaligned dots. <i>Physical Review B</i> , 2007, 75, .	1.1	38
24	Scanning gate microscopy simulations for quantum rings: Effective potential of the tip and conductance maps. <i>Physical Review B</i> , 2011, 84, .	1.1	37
25	Exchange energy tuned by asymmetry in artificial molecules. <i>Physical Review B</i> , 2004, 70, .	1.1	35
26	Spin Rotations Induced by an Electron Running in Closed Trajectories in Gated Semiconductor Nanodevices. <i>Physical Review Letters</i> , 2008, 101, 216805.	2.9	33
27	Electron spin and charge switching in a coupled quantum-dot–quantum ring system. <i>Physical Review B</i> , 2004, 70, .	1.1	32
28	Effective spin-orbit interaction Hamiltonian for quasi-one-dimensional quantum rings. <i>Physical Review B</i> , 2012, 85, .	1.1	31
29	Solution of the Poisson-Schrödinger problem for a single-electron transistor. <i>Physical Review B</i> , 2000, 61, 4461-4464.	1.1	30
30	Few-electron systems in quantum cylinders. <i>Physical Review B</i> , 2000, 61, 1971-1977.	1.1	30
31	Resonant harmonic generation and collective spin rotations in electrically driven quantum dots. <i>Physical Review B</i> , 2012, 86, .	1.1	30
32	Artificial molecules in coupled and single quantum dots. <i>Physical Review B</i> , 2003, 67, .	1.1	29
33	Lorentz-force–induced asymmetry in the Aharonov-Bohm effect in a three-terminal semiconductor quantum ring. <i>Europhysics Letters</i> , 2005, 70, 810-816.	0.7	29
34	Signatures of lateral coupling of double quantum dots in the exciton photoluminescence spectrum. <i>Physical Review B</i> , 2007, 76, .	1.1	29
35	Few-electron artificial molecules formed by laterally coupled quantum rings. <i>Physical Review B</i> , 2008, 78, .	1.1	29
36	Tuning of the spin-orbit interaction in a quantum dot by an in-plane magnetic field. <i>Physical Review B</i> , 2011, 83, .	1.1	29

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55	Electron soliton in semiconductor nanostructures. Physical Review B, 2005, 72, .	1.1	15
56	Charged coplanar semiconductor quantum rings: Magnetization and inter-ring electron-electron correlation. Physical Review B, 2008, 77, .	1.1	15
57	electron gas at a n AlGaAs δ -well. Physical Review B, 2008, 77, .	1.1	15
58	Tight-binding simulations of electrically driven spin-valley transitions in carbon nanotube quantum dots. Physical Review B, 2014, 90, .	1.1	15
59	Lorentz force effects for graphene Aharonov-Bohm interferometers. Physical Review B, 2016, 94, .	1.1	15
60	Electrostatic quantum dots in silicene. Scientific Reports, 2018, 8, 7166.	1.6	15
61	Coupled Quantum Dots - Spatial Correlations between Interacting Carriers. Acta Physica Polonica A, 2008, 114, 1013-1039.	0.2	15
62	Effect of the electron-phonon coupling on the ground state of a D° center in a spherical quantum dot. Physical Review B, 1999, 60, 15558-15561.	1.1	14
63	Accuracy of the Hartree-Fock method for Wigner molecules at high magnetic fields. European Physical Journal D, 2004, 28, 373-380.	0.6	14
64	Simulations of electric-dipole spin resonance for spin-orbit coupled quantum dots in the Overhauser field: Fractional resonances and selection rules. Physical Review B, 2013, 88, .	1.1	14
65	Spin current source based on a quantum point contact with local spin-orbit interaction. Applied Physics Letters, 2013, 103, .	1.5	14
66	Signatures of spin-orbit coupling in scanning gate conductance images of electron flow from quantum point contacts. Physical Review B, 2014, 90, .	1.1	14
67	Energy dissipation of electron solitons in a quantum well. Physical Review B, 2006, 73, .	1.1	13
68	Electron transfer through a multiterminal quantum ring: Magnetic forces and elastic scattering effects. Physical Review B, 2009, 80, .	1.1	13
69	Magnetic-Field Asymmetry of Electron Wave Packet Transmission in Bent Channels Capacitively Coupled to a Metal Gate. Physical Review Letters, 2009, 102, 066807.	2.9	13
70	Pinning of electron densities in quantum rings by defects: Symmetry constraints and distribution of persistent currents. Physical Review B, 2009, 79, .	1.1	13
71	Interedge backscattering in buried split-gate-defined graphene quantum point contacts. Physical Review B, 2016, 94, .	1.1	13
72	Electron correlations in charge coupled vertically stacked quantum rings. Physical Review B, 2007, 75, .	1.1	12

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73	Re-entrant pinning of Wigner molecules in a magnetic field due to a Coulomb impurity. Europhysics Letters, 2004, 66, 701-707.	0.7	11
74	Schrödinger-Poisson calculations for scanning gate microscopy of quantum rings based on etched two-dimensional electron gas. Physical Review B, 2013, 87, .	1.1	11
75	Aharonov-Bohm oscillations in phosphorene quantum rings: Mass anisotropy compensation by confinement potential. Physical Review B, 2022, 105, .	1.1	11
76	Spin accumulation and spin read out without magnetic field. Physical Review B, 2010, 82, .	1.1	10
77	Transconductance and effective Landé factors for quantum point contacts: Spin-orbit coupling and interaction effects. Physical Review B, 2016, 93, .	1.1	10
78	Paired electron motion in interacting chains of quantum dots. Physical Review B, 2020, 101, .	1.1	10
79	Electric- and magnetic-field-induced evolution of transport windows in a vertical quantum dot. Physical Review B, 2001, 65, .	1.1	9
80	Coulomb-interaction driven anomaly in the Stark effect for an exciton in vertically coupled quantum dots. Journal of Luminescence, 2005, 112, 122-126.	1.5	9
81	Correlated persistent currents in a stack of semiconductor quantum rings. Physical Review B, 2008, 77, .	1.1	9
82	Tuning Fano resonances by magnetic forces for electron transport through a quantum wire side coupled to a quantum ring. Physical Review B, 2010, 82, .	1.1	9
83	Conductance response of graphene nanoribbons and quantum point contacts in scanning gate measurements. Semiconductor Science and Technology, 2015, 30, 085003.	1.0	9
84	Three electrons in laterally coupled quantum dots: Tunnel vs electrostatic coupling, ground-state symmetry, and interdot correlations. Physical Review B, 2005, 71, .	1.1	8
85	Dependence of the vortex structure in quantum dots on the range of the inter-electron interaction. Physical Review B, 2006, 73, .	1.1	8
86	Magnetic forces and localized resonances in electron transfer through quantum rings. Journal of Physics Condensed Matter, 2010, 22, 465801.	0.7	8
87	Time-dependent configuration-interaction simulations of spin swap in spin-orbit-coupled double quantum dots. Physical Review B, 2010, 82, .	1.1	8
88	Singlet-triplet avoided crossings and effective g factor versus spatial orientation of spin-orbit-coupled quantum dots. Physical Review B, 2011, 83, .	1.1	8
89	Charge density mapping of strongly-correlated few-electron two-dimensional quantum dots by the scanning probe technique. Journal of Physics Condensed Matter, 2013, 25, 335801.	0.7	8
90	Manipulating quantum Hall edge channels in graphene through scanning gate microscopy. Physical Review B, 2017, 96, .	1.1	8

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91	Aharonov-Bohm conductance oscillations and current equilibration in local junctions in graphene. <i>Physical Review B</i> , 2018, 98, .		
92	In-plane magnetic-field-induced Wigner crystallization in a two-electron quantum dot. <i>Physical Review B</i> , 2004, 70, .	1.1	7
93	Violation of Onsager symmetry for a ballistic channel Coulomb coupled to a quantum ring. <i>Europhysics Letters</i> , 2009, 87, 47002.	0.7	7
94	Coupling of bonding and antibonding electron orbitals in double quantum dots by spin-orbit interaction. <i>Physical Review B</i> , 2010, 81, .	1.1	7
95	Negative trion emission spectrum in stacked quantum dots: External electric field and valence band mixing. <i>Physical Review B</i> , 2012, 85, .	1.1	7
96	Multisubband transport and magnetic deflection of Fermi electron trajectories in three terminal junctions and rings. <i>Journal of Physics Condensed Matter</i> , 2012, 24, 085801.	0.7	7
97	Imaging of double slit interference by scanning gate microscopy. <i>Physical Review B</i> , 2014, 90, .	1.1	7
98	Wave-function description of conductance mapping for a quantum Hall electron interferometer. <i>Physical Review B</i> , 2014, 89, .	1.1	7
99	Imaging backscattering in graphene quantum point contacts. <i>Physical Review B</i> , 2017, 96, .	1.1	7
100	Electrical control of a confined electron spin in a silicene quantum dot. <i>Physical Review B</i> , 2018, 97, .	1.1	7
101	Spin and valley control in single and double electrostatic silicene quantum dots. <i>Physical Review B</i> , 2018, 98, .	1.1	7
102	Electrostatic quantum dot confinement in phosphorene. <i>Physical Review B</i> , 2020, 101, .	1.1	7
103	Gated combo nanodevice for sequential operations on single electron spin. <i>Nanotechnology</i> , 2009, 20, 065402.	1.3	6
104	Double quantum dots defined in bilayer graphene. <i>Physical Review B</i> , 2017, 96, .	1.1	6
105	Theoretical Description of Shell Filling in Cylindrical Quantum Dots. <i>Acta Physica Polonica A</i> , 1998, 94, 555-559.	0.2	6
106	Influence of Donor Impurity on Optical Transitions in Quantum Dots. <i>Physica Status Solidi (B): Basic Research</i> , 1998, 210, 677-682.	0.7	5
107	Spin-orbit interaction in bent carbon nanotubes: resonant spin transitions. <i>Journal of Physics Condensed Matter</i> , 2015, 27, 435301.	0.7	5
108	Spin-valley resolved photon-assisted tunneling in carbon nanotube double quantum dots. <i>Physical Review B</i> , 2017, 95, .	1.1	5

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127	Spontaneous and resonant lifting of the spin blockade in nanowire quantum dots. <i>Physical Review B</i> , 2014, 89, .	1.1	3
128	Imaging quantum-dot-confined electron density in transition to fractional quantum Hall regime. <i>Semiconductor Science and Technology</i> , 2015, 30, 015020.	1.0	3
129	Theory of ballistic quantum transport in the presence of localized defects. <i>Physical Review B</i> , 2016, 94, .	1.1	3
130	Persistent currents in topological and trivial confinement in silicene. <i>Physical Review B</i> , 2020, 101, .	1.1	3
131	Annular confinement for electrons on liquid helium. <i>Physical Review B</i> , 2021, 104, .	1.1	3
132	Controllable spin filtering and half-metallicity in InAs -borophene nanoribbons. <i>Physical Review B</i> , 2021, 104, .		
133	Ground and Excited States of $\text{D}^{\text{0}}\%$ Centres in Semiconductor Quantum Dots. <i>Materials Science Forum</i> , 1997, 258-263, 1707-1712.	0.3	2
134	Single-electron charging spectra: from natural to artificial atoms. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2003, 18, 523-529.	1.3	2
135	Exact broken-symmetry states and Hartree-Fock solutions for quantum dots at high magnetic fields. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2005, 26, 252-256.	1.3	2
136	Self-focusing of a quantum-well-confined electron wave packet interacting with a metal plate. <i>Physica Status Solidi (B): Basic Research</i> , 2006, 243, 2811-2818.	0.7	2
137	Magnetic-field-induced binding of few-electron systems in shallow quantum dots. <i>Physical Review B</i> , 2006, 74, .	1.1	2
138	Carrier-carrier inelastic scattering events for spatially separated electrons: Magnetic asymmetry and turnstile electron transfer. <i>Physical Review B</i> , 2012, 85, .	1.1	2
139	Fractional conductance oscillations in quantum rings: wave packet picture of transport in a few-electron system. <i>Journal of Physics Condensed Matter</i> , 2013, 25, 155802.	0.7	2
140	Single-electron shell occupation and effective factor in few-electron nanowire quantum dots. <i>Physical Review B</i> , 2015, 91, .	1.1	2
141	Charging graphene nanoribbon quantum dots. <i>Physical Review B</i> , 2015, 92, .	1.1	2
142	Electron paths and double-slit interference in the scanning gate microscopy. <i>New Journal of Physics</i> , 2015, 17, 063003.	1.2	2
143	Electronic structure of $(1e,1h)$ states of carbon nanotube quantum dots. <i>Physical Review B</i> , 2016, 93, .	1.1	2
144	Imaging spin-resolved cyclotron trajectories in the InSb two-dimensional electron gas. <i>Physical Review B</i> , 2018, 98, .	1.1	2

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145	Few-Electron Artificial Atoms. <i>Few-Body Systems</i> , 1999, , 189-198.	0.2	2
146	A classical model for the magnetic field-induced Wigner crystallization in quantum dots. <i>Journal of Physics Condensed Matter</i> , 2004, 16, 1425-1437.	0.7	1
147	Electronic properties of a defected ring-shaped quantum dot array. <i>Journal of Physics Condensed Matter</i> , 2011, 23, 225801.	0.7	1
148	Spin exchange energy for a pair of valence band holes in artificial molecules. <i>Semiconductor Science and Technology</i> , 2014, 29, 115022.	1.0	1
149	Imaging localization of quasibound states in graphene antidots. <i>Physical Review B</i> , 2014, 90, .	1.1	1
150	Quantum ring conductance sensitivity to potential perturbation in an external magnetic field. <i>Physical Review B</i> , 2014, 89, .	1.1	1
151	Multitip scanning gate microscopy for ballistic transport studies in systems with a two-dimensional electron gas. <i>Physical Review B</i> , 2015, 91, .	1.1	1
152	Conductance measurement of spin-orbit coupling in two-dimensional electron systems with an in-plane magnetic field. <i>Physical Review B</i> , 2016, 94, .	1.1	1
153	Spin separation and exchange for quantum dots in the Overhauser field. <i>Physical Review B</i> , 2017, 95, .	1.1	1
154	Extraction of the Rashba spin-orbit coupling constant from scanning gate microscopy conductance maps for quantum point contacts. <i>Scientific Reports</i> , 2017, 7, 14935.	1.6	1
155	Nagaoka spin-valley ordering in silicene quantum dots. <i>Physical Review B</i> , 2021, 103, .	1.1	1
156	Current Trends in Nanoeducation for Industry and Society. <i>Current Bionanotechnology</i> , 2017, 2, 112-115.	0.6	1
157	MBE-grown gate-controlled quantum-dot nanostructure and its current-voltage characteristics. <i>Thin Solid Films</i> , 2000, 367, 97-100.	0.8	0
158	Infrared optical versus transport spectroscopy for few-electron spherical quantum dots. <i>Journal of Physics Condensed Matter</i> , 2000, 12, 6837-6844.	0.7	0
159	Induced-charge distribution in vertical quantum dots. , 2001, 4413, 129.		0
160	Configuration interaction study of the single-electron transport in the vertical gated quantum dot. <i>Physica Status Solidi (B): Basic Research</i> , 2003, 237, 289-295.	0.7	0
161	Publisher's Note: Effective spin-orbit interaction Hamiltonian for quasi-one-dimensional quantum rings [<i>Phys. Rev. B</i> 85 (2012)]. <i>Physical Review B</i> , 2012, 85, .	1.1	0
162	Shape of recombination lines for exciton complexes in quantum dots with in-plane electric field. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2013, 377, 3179-3183.	0.9	0

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163	Valence band mixing versus higher harmonic generation in electric dipole spin resonance. Semiconductor Science and Technology, 2015, 30, 055017.	1.0	0
164	Nanoeducation for Industry and Society. Innovation, Technology and Knowledge Management, 2016, , 93-115.	0.4	0
165	Simulation of the Coulomb blockade microscopy of quantum dots. Physica E: Low-Dimensional Systems and Nanostructures, 2017, 93, 70-77.	1.3	0
166	Driven spin transitions in fluorinated single- and bilayer-graphene quantum dots. Semiconductor Science and Technology, 2017, 32, 065016.	1.0	0
167	Circular n-p Junctions in Graphene Nanoribbons. Nanoscience and Technology, 2018, , 559-580.	1.5	0
168	Pauli blockade microscopy of quantum dots. Physica E: Low-Dimensional Systems and Nanostructures, 2018, 104, 22-28.	1.3	0
169	Fast evaluation of interaction integrals for confined systems with machine learning. Physical Review B, 2020, 102, .	1.1	0
170	Effective Landé factors for an electrostatically defined quantum point contact in silicene. Scientific Reports, 2021, 11, 19892.	1.6	0
171	Transport and Capacitance Spectroscopy of Quantum Dots. Acta Physica Polonica A, 2001, 100, 145-163.	0.2	0
172	Electron Pairs and Excitons in Quasi-One-Dimensional Nanostructures. Acta Physica Polonica A, 2003, 103, 567-572.	0.2	0
173	Nanodevice for High Precision Readout of Electron Spin. Acta Physica Polonica A, 2011, 119, 651-653.	0.2	0
174	Wannier-Bloch approach to localization in high-order harmonic generation in solids. , 2018, , .		0