Bartlomiej Szafran

List of Publications by Year in Descending Order

165 papers	2,671 citations	29 h-index	44 g-index
181 ext. papers	2,870 ext. citations	3 avg, IF	5.26 L-index

#	Paper	IF	Citations
165	Effective Land factors for an electrostatically defined quantum point contact in silicene. *Scientific Reports*, **2021**, 11, 19892	4.9	
164	Persistent currents in topological and trivial confinement in silicene. *Physical Review B*, **2020**, 101,	3.3	1
163	Paired electron motion in interacting chains of quantum dots. *Physical Review B*, **2020**, 101,	3.3	5
162	Electron interferometry and quantum spin Hall phase in silicene. *Physical Review B*, **2019**, 99,	3.3	2
161	Finite-difference method for Dirac electrons in circular quantum dots. *Physical Review B*, **2019**, 99,	3.3	3
160	Topologically protected wave packets and quantum rings in silicene. *Physical Review B*, **2019**, 100,	3.3	2
159	Electrical control of a confined electron spin in a silicene quantum dot. *Physical Review B*, **2018**, 97,	3.3	4
158	Spin-active devices based on graphene/WSe2 heterostructures. *Physical Review B*, **2018**, 98,	3.3	2
157	Pauli blockade microscopy of quantum dots. *Physica E: Low-Dimensional Systems and Nanostructures* , **2018**, 104, 22-28	3	
156	Electrostatic quantum dots in silicene. *Scientific Reports*, **2018**, 8, 7166	4.9	13
155	Electron spin inversion in gated silicene nanoribbons. *Physical Review B*, **2018**, 98,	3.3	11
154	Imaging spin-resolved cyclotron trajectories in the InSb two-dimensional electron gas. *Physical Review B*, **2018**, 98,	3.3	1
153	Spin and valley control in single and double electrostatic silicene quantum dots. *Physical Review B*, **2018**, 98,	3.3	4
152	Aharonov-Bohm conductance oscillations and current equilibration in local np junctions in graphene. *Physical Review B*, **2018**, 98,	3.3	4
151	Circular n-p Junctions in Graphene Nanoribbons. *Nanoscience and Technology*, **2018**, 559-580	0.6	
150	Imaging snake orbits at graphene np junctions. *Physical Review B*, **2017**, 95,	3.3	14
149	Simulation of the Coulomb blockade microscopy of quantum dots. *Physica E: Low-Dimensional Systems and Nanostructures*, **2017**, 93, 70-77	3	

148	Driven spin transitions in fluorinated single- and bilayer-graphene quantum dots. *Semiconductor Science and Technology*, **2017**, 32, 065016	1.8	
147	Spin-valley dynamics of electrically driven ambipolar carbon-nanotube quantum dots. *Journal of Physics Condensed Matter*, **2017**, 29, 285301	1.8	2
146	Spin separation and exchange for quantum dots in the Overhauser field. *Physical Review B*, **2017**, 95,	3.3	1
145	Wannier-Bloch Approach to Localization in High-Harmonics Generation in Solids. *Physical Review X*, **2017**, 7,	9.1	55
144	Double quantum dots defined in bilayer graphene. *Physical Review B*, **2017**, 96,	3.3	5
143	Spin-valley resolved photon-assisted tunneling in carbon nanotube double quantum dots. *Physical Review B*, **2017**, 95,	3.3	4
142	Imaging backscattering in graphene quantum point contacts. *Physical Review B*, **2017**, 96,	3.3	3
141	Manipulating quantum Hall edge channels in graphene through scanning gate microscopy. *Physical Review B*, **2017**, 96,	3.3	4
140	Extraction of the Rashba spin-orbit coupling constant from scanning gate microscopy conductance maps for quantum point contacts. *Scientific Reports*, **2017**, 7, 14935	4.9	1
139	Electron spin inversion in fluorinated graphene nanoribbons. *Physical Review B*, **2017**, 96,	3.3	4
138	Transconductance and effective Landé factors for quantum point contacts: Spin-orbit coupling and interaction effects. *Physical Review B*, **2016**, 93,	3.3	8
137	Aharonov-Bohm interferometer based on npn junctions in graphene nanoribbons. *Physical Review B*, **2016**, 93,	3.3	17
136	Electronic structure of (1e,1h) states of carbon nanotube quantum dots. *Physical Review B*, **2016**, 93,	3.3	2
135	Interedge backscattering in buried split-gate-defined graphene quantum point contacts. *Physical Review B*, **2016**, 94,	3.3	10
134	Nanoeducation for Industry and Society. *Innovation, Technology and Knowledge Management*, **2016**, 93-105		1
133	Lorentz force effects for graphene Aharonov-Bohm interferometers. *Physical Review B*, **2016**, 94,	3.3	11
132	Theory of ballistic quantum transport in the presence of localized defects. *Physical Review B*, **2016**, 94,	3.3	2
131	Interference features in scanning gate conductance maps of quantum point contacts with disorder. *Physical Review B*, **2016**, 94,	3.3	19

130	Conductance measurement of spin-orbit coupling in two-dimensional electron systems with an in-plane magnetic field. *Physical Review B*, **2016**, 94,	3.3	1
129	Two-electron np double quantum dots in carbon nanotubes. *Physical Review B*, **2015**, 91,	3.3	4
128	Conductance response of graphene nanoribbons and quantum point contacts in scanning gate measurements. *Semiconductor Science and Technology*, **2015**, 30, 085003	1.8	7
127	Valence band mixing versus higher harmonic generation in electric dipole spin resonance. *Semiconductor Science and Technology*, **2015**, 30, 055017	1.8	
126	Electron paths and double-slit interference in the scanning gate microscopy. *New Journal of Physics*, **2015**, 17, 063003	2.9	2
125	Single-electron shell occupation and effective g factor in few-electron nanowire quantum dots. *Physical Review B*, **2015**, 91,	3.3	2
124	Multitip scanning gate microscopy for ballistic transport studies in systems with a two-dimensional electron gas. *Physical Review B*, **2015**, 91,	3.3	1
123	Charging graphene nanoribbon quantum dots. *Physical Review B*, **2015**, 92,	3.3	2
122	Spin-orbit interaction in bent carbon nanotubes: resonant spin transitions. *Journal of Physics Condensed Matter*, **2015**, 27, 435301	1.8	5
121	Imaging quantum-dot-confined electron density in transition to fractional quantum Hall regime. *Semiconductor Science and Technology*, **2015**, 30, 015020	1.8	3
120	Spontaneous and resonant lifting of the spin blockade in nanowire quantum dots. *Physical Review B* , **2014**, 89,	3.3	3
119	Signatures of spin-orbit coupling in scanning gate conductance images of electron flow from quantum point contacts. *Physical Review B*, **2014**, 90,	3.3	11
118	Quantum ring conductance sensitivity to potential perturbation in an external magnetic field. *Physical Review B*, **2014**, 89,	3.3	1
117	Spin exchange energy for a pair of valence band holes in artificial molecules. *Semiconductor Science and Technology*, **2014**, 29, 115022	1.8	1
116	Conductance microscopy of quantum dots weakly or strongly coupled to the conducting channel. *New Journal of Physics*, **2014**, 16, 053044	2.9	3
115	Tight-binding simulations of electrically driven spin-valley transitions in carbon nanotube quantum dots. *Physical Review B*, **2014**, 90,	3.3	15
114	Imaging of double slit interference by scanning gate microscopy. *Physical Review B*, **2014**, 90,	3.3	6
113	Wave-function description of conductance mapping for a quantum Hall electron interferometer. *Physical Review B*, **2014**, 89,	3.3	7

112	Imaging localization of quasibound states in graphene antidots. *Physical Review B*, **2014**, 90,	3.3	1
111	Optical signatures of valence-band mixing in positive trion recombination spectra of double quantum dots. *Physical Review B*, **2014**, 89,	3.3	3
110	Interaction effects near constriction of a quasi two-dimensional electron system: an exact diagonalization study. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **2014**, 378, 1036-1041	2.3	4
109	Confined states in quantum dots defined within finite flakes of bilayer graphene: Coupling to the edge, ionization threshold, and valley degeneracy. *Physical Review B*, **2013**, 88,	3.3	20
108	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,	3.3	13
107	Spin current source based on a quantum point contact with local spin-orbit interaction. *Applied Physics Letters*, **2013**, 103, 202404	3.4	13
106	Simulations of imaging of the local density of states by a charged probe technique for resonant cavities. *Physical Review B*, **2013**, 88,	3.3	22
105	Shape of recombination lines for exciton complexes in quantum dots with in-plane electric field. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **2013**, 377, 3179-3183	2.3	
104	Schrödinger-Poisson calculations for scanning gate microscopy of quantum rings based on etched two-dimensional electron gas. *Physical Review B*, **2013**, 87,	3.3	9
103	Fractional conductance oscillations in quantum rings: wave packet picture of transport in a few-electron system. *Journal of Physics Condensed Matter*, **2013**, 25, 155802	1.8	1
102	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	1.8	5
101	Spin-polarization anisotropy in a narrow spin-orbit-coupled nanowire quantum dot. *Physical Review B*, **2013**, 87,	3.3	20
100	Effective spin-orbit interaction Hamiltonian for quasi-one-dimensional quantum rings. *Physical Review B*, **2012**, 85,	3.3	24
99	Negative trion emission spectrum in stacked quantum dots: External electric field and valence band mixing. *Physical Review B*, **2012**, 85,	3.3	7
98	Carrier-carrier inelastic scattering events for spatially separated electrons: Magnetic asymmetry and turnstile electron transfer. *Physical Review B*, **2012**, 85,	3.3	2
97	Resonant harmonic generation and collective spin rotations in electrically driven quantum dots. *Physical Review B*, **2012**, 86,	3.3	28
96	Multisubband transport and magnetic deflection of Fermi electron trajectories in three terminal junctions and rings. *Journal of Physics Condensed Matter*, **2012**, 24, 085801	1.8	5
95	Singlet-triplet avoided crossings and effective g factor versus spatial orientation of spin-orbit-coupled quantum dots. *Physical Review B*, **2011**, 83,	3.3	7

94	Fano resonances and electron spin transport through a two-dimensional spin-orbit-coupled quantum ring. *Physical Review B*, **2011**, 84,	3.3	15
93	Tuning of the spin-orbit interaction in a quantum dot by an in-plane magnetic field. *Physical Review B*, **2011**, 83,	3.3	28
92	Scanning gate microscopy simulations for quantum rings: Effective potential of the tip and conductance maps. *Physical Review B*, **2011**, 84,	3.3	35
91	Electronic properties of a defected ring-shaped quantum dot array. *Journal of Physics Condensed Matter*, **2011**, 23, 225801	1.8	1
90	Nanodevice for High Precision Readout of Electron Spin. *Acta Physica Polonica A*, **2011**, 119, 651-653	0.6	
89	Spin accumulation and spin read out without magnetic field. *Physical Review B*, **2010**, 82,	3.3	9
88	Coupling of bonding and antibonding electron orbitals in double quantum dots by spin-orbit interaction. *Physical Review B*, **2010**, 81,	3.3	7
87	Signatures of antibonding hole ground states in exciton spectra of vertically coupled quantum dots in an electric field. *Physical Review B*, **2010**, 81,	3.3	13
86	Magnetic forces and localized resonances in electron transfer through quantum rings. *Journal of Physics Condensed Matter*, **2010**, 22, 465801	1.8	6
85	Magnetic forces and stationary electron flow in a three-terminal semiconductor quantum ring. *Journal of Physics Condensed Matter*, **2010**, 22, 215801	1.8	3
84	Tuning Fano resonances by magnetic forces for electron transport through a quantum wire side coupled to a quantum ring. *Physical Review B*, **2010**, 82,	3.3	8
83	Time-dependent configuration-interaction simulations of spin swap in spin-orbit-coupled double quantum dots. *Physical Review B*, **2010**, 82,	3.3	8
82	Selective suppression of Dresselhaus or Rashba spin-orbit coupling effects by the Zeeman interaction in quantum dots. *Physical Review B*, **2009**, 79,	3.3	13
81	Electron transfer through a multiterminal quantum ring: Magnetic forces and elastic scattering effects. *Physical Review B*, **2009**, 80,	3.3	12
80	Magnetic-field asymmetry of electron wave packet transmission in bent channels capacitively coupled to a metal gate. *Physical Review Letters*, **2009**, 102, 066807	7.4	13
79	Wave packet dynamics in semiconductor quantum rings of finite width. *Physical Review B*, **2009**, 80,	3.3	40
78	Gated combo nanodevice for sequential operations on single electron spin. *Nanotechnology*, **2009**, 20, 065402	3.4	5
77	Pinning of electron densities in quantum rings by defects: Symmetry constraints and distribution of persistent currents. *Physical Review B*, **2009**, 79,	3.3	11

76	Spin-orbit coupling effects in two-dimensional circular quantum rings: Elliptical deformation of confined electron density. *Physical Review B*, **2009**, 80,	3.3	34
75	Violation of Onsager symmetry for a ballistic channel Coulomb coupled to a quantum ring. *Europhysics Letters*, **2009**, 87, 47002	1.6	7
74	Few-electron artificial molecules formed by laterally coupled quantum rings. *Physical Review B*, **2008**, 78,	3.3	27
73	Charged coplanar semiconductor quantum rings: Magnetization and inter-ring electron-electron correlation. *Physical Review B*, **2008**, 77,	3.3	15
72	Manipulation of two-electron states by the electric field in stacked self-assembled dots. *Journal of Physics Condensed Matter*, **2008**, 20, 395225	1.8	3
71	Exciton spectra in vertical stacks of triple and quadruple quantum dots in an electric field. *Physical Review B*, **2008**, 77,	3.3	20
70	Correlated persistent currents in a stack of semiconductor quantum rings. *Physical Review B*, **2008**, 77,	3.3	9
69	Spin rotations induced by an electron running in closed trajectories in gated semiconductor nanodevices. *Physical Review Letters*, **2008**, 101, 216805	7.4	30
68	Induced quantum dots and wires: electron storage and delivery. *Physical Review Letters*, **2008**, 100, 126805	7.4	19
67	Quantum dot defined in a two-dimensional electron gas at a n□AlGaAs□GaAs heterojunction: Simulation of electrostatic potential and charging properties. *Physical Review B*, **2008**, 77,	3.3	14
66	Coupled Quantum Dots - Spatial Correlations between Interacting Carriers. *Acta Physica Polonica A*, **2008**, 114, 1013-1039	0.6	12
65	Signatures of lateral coupling of double quantum dots in the exciton photoluminescence spectrum. *Physical Review B*, **2007**, 76,	3.3	29
64	Electron correlations in charge coupled vertically stacked quantum rings. *Physical Review B*, **2007**, 75,	3.3	9
63	Stark effect on the exciton spectra of vertically coupled quantum dots: Horizontal field orientation and nonaligned dots. *Physical Review B*, **2007**, 75,	3.3	38
62	Broken one-particle symmetry in few-electron coupled quantum dots. *Physical Review B*, **2006**, 73,	3.3	4
61	Magnetic-field-induced binding of few-electron systems in shallow quantum dots. *Physical Review B* , **2006**, 74,	3.3	1
60	Dependence of the vortex structure in quantum dots on the range of the inter-electron interaction. *Physical Review B*, **2006**, 73,	3.3	7
59	Energy dissipation of electron solitons in a quantum well. *Physical Review B*, **2006**, 73,	3.3	11

58	Self-focusing of a quantum-well-confined electron wave packet interacting with a metal plate. *Physica Status Solidi (B): Basic Research*, **2006**, 243, 2811-2818	1.3	2
57	Stability of Charged Exciton States in Quantum Wires. *Few-Body Systems*, **2006**, 38, 121-124	1.6	3
56	Time-dependent simulations of electron transport through a quantum ring: Effect of the Lorentz force. *Physical Review B*, **2005**, 72,	3.3	48
55	Coulomb-interaction driven anomaly in the Stark effect for an exciton in vertically coupled quantum dots. *Journal of Luminescence*, **2005**, 112, 122-126	3.8	9
54	Exact broken-symmetry states and Hartree–Fock solutions for quantum dots at high magnetic fields. *Physica E: Low-Dimensional Systems and Nanostructures*, **2005**, 26, 252-256	3	2
53	Lorentz-force–induced asymmetry in the Aharonov-Bohm effect in a three-terminal semiconductor quantum ring. *Europhysics Letters*, **2005**, 70, 810-816	1.6	27
52	Exciton and negative trion dissociation by an external electric field in vertically coupled quantum dots. *Physical Review B*, **2005**, 71,	3.3	52
51	Electron soliton in semiconductor nanostructures. *Physical Review B*, **2005**, 72,	3.3	13
50	Three electrons in laterally coupled quantum dots: Tunnel vs electrostatic coupling, ground-state symmetry, and interdot correlations. *Physical Review B*, **2005**, 71,	3.3	7
49	Few-electron eigenstates of concentric double quantum rings. *Physical Review B*, **2005**, 72,	3.3	62
48	Relative stability of negative and positive trions in model symmetric quantum wires. *Physical Review B*, **2005**, 71,	3.3	23
47	LO-phonon-induced screening of electron–electron interaction in D– centres and quantum dots. *Journal of Physics Condensed Matter*, **2005**, 17, 4489-4500	1.8	56
46	Phase Transitions in Wigner Molecules **2005**, 285-299		
45	A classical model for the magnetic field-induced Wigner crystallization in quantum dots. *Journal of Physics Condensed Matter*, **2004**, 16, 1425-1437	1.8	1
44	Re-entrant pinning of Wigner molecules in a magnetic field due to a Coulomb impurity. *Europhysics Letters*, **2004**, 66, 701-707	1.6	11
43	Exchange energy tuned by asymmetry in artificial molecules. *Physical Review B*, **2004**, 70,	3.3	32
42	Spatial ordering of charge and spin in quasi-one-dimensional Wigner molecules. *Physical Review B*, **2004**, 70,	3.3	42
41	Anisotropic quantum dots: Correspondence between quantum and classical Wigner molecules, parity symmetry, and broken-symmetry states. *Physical Review B*, **2004**, 69,	3.3	37

40	In-plane magnetic-field-induced Wigner crystallization in a two-electron quantum dot. *Physical Review B*, **2004**, 70,	3.3	6
39	Accuracy of the Hartree-Fock method for Wigner molecules at high magnetic fields. *European Physical Journal D*, **2004**, 28, 373-380	1.3	13
38	Electron spin and charge switching in a coupled quantum-dot quantum ring system. *Physical Review B*, **2004**, 70,	3.3	30
37	Magnetic-field-induced phase transitions in Wigner molecules. *Journal of Physics Condensed Matter*, **2003**, 15, 4189-4205	1.8	15
36	Electrostatic quantum dots with designed shape of confinement potential. *Physica E: Low-Dimensional Systems and Nanostructures*, **2003**, 17, 494-497	3	39
35	Single-electron charging spectra: from natural to artificial atoms. *Physica E: Low-Dimensional Systems and Nanostructures*, **2003**, 18, 523-529	3	2
34	Configuration interaction study of the single-electron transport in the vertical gated quantum dot. *Physica Status Solidi (B): Basic Research*, **2003**, 237, 289-295	1.3	
33	Modeling of electronic properties of electrostatic quantum dots. *Physical Review B*, **2003**, 68,	3.3	88
32	Magnetic-field-induced transformations of Wigner molecule symmetry in quantum dots. *Physical Review B*, **2003**, 67,	3.3	22
31	Four-electron quantum dot in a magnetic field. *Physical Review B*, **2003**, 68,	3.3	80
30	Artificial molecules in coupled and single quantum dots. *Physical Review B*, **2003**, 67,	3.3	28
29	Effective interaction for charge carriers confined in quasi-one-dimensional nanostructures. *Physical Review B*, **2003**, 68,	3.3	69
28	Correlation effects in vertical gated quantum dots. *Physical Review B*, **2003**, 67,	3.3	15
27	Electron Pairs and Excitons in Quasi-One-Dimensional Nanostructures. *Acta Physica Polonica A*, **2003**, 103, 567-572	0.6	
26	Modelling of confinement potentials in quantum dots. *Physica E: Low-Dimensional Systems and Nanostructures*, **2002**, 15, 261-268	3	65
25	Effect of the repulsive core on the exciton spectrum in a quantum ring. *Journal of Physics Condensed Matter*, **2002**, 14, 73-86	1.8	14
24	Excitonic trions in single and double quantum dots. *Physical Review B*, **2002**, 66,	3.3	40
23	Induced-charge distribution in vertical quantum dots **2001**, 4413, 129		

22	Electric- and magnetic-field-induced evolution of transport windows in a vertical quantum dot. *Physical Review B*, **2001**, 65,	3.3	8
21	Theoretical description of electronic properties of vertical gated quantum dots. *Physical Review B*, **2001**, 64,	3.3	41
20	Parity symmetry and energy spectrum of excitons in coupled self-assembled quantum dots. *Physical Review B*, **2001**, 64,	3.3	126
19	Transport and Capacitance Spectroscopy of Quantum Dots. *Acta Physica Polonica A*, **2001**, 100, 145-163	0.6	
18	Single-electron charging of self assembled quantum dots. *Thin Solid Films*, **2000**, 367, 93-96	2.2	3
17	MBE-grown gate-controlled quantum-dot nanostructure and its current□voltage characteristics. *Thin Solid Films*, **2000**, 367, 97-100	2.2	
16	Quantum Coulomb blockade in gate-controlled quantum dots. *Microelectronic Engineering*, **2000**, 51-52, 99-109	2.5	3
15	Infrared optical versus transport spectroscopy for few-electron spherical quantum dots. *Journal of Physics Condensed Matter*, **2000**, 12, 6837-6844	1.8	
14	Solution of the Poisson-Schr□inger problem for a single-electron transistor. *Physical Review B*, **2000**, 61, 4461-4464	3.3	28
13	Electron pair in a Gaussian confining potential. *Physical Review B*, **2000**, 62, 4234-4237	3.3	165
12	Recombination energy for excitonic trions in quantum dots. *Journal of Physics Condensed Matter*, **2000**, 12, 2453-2459	1.8	20
11	Few-electron systems in quantum cylinders. *Physical Review B*, **2000**, 61, 1971-1977	3.3	30
10	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	3.3	13
9	Ground and excited states of few-electron systems in spherical quantum dots. *Physica E: Low-Dimensional Systems and Nanostructures*, **1999**, 4, 1-10	3	68
8	Electron□electron correlation in quantum dots. *Physica E: Low-Dimensional Systems and Nanostructures*, **1999**, 5, 185-195	3	52
7	Phonon resonances in optical spectra of donors in quantum wells. *Physica B: Condensed Matter*, **1999**, 273-274, 947-950	2.8	3
6	Many-electron artificial atoms. *Physical Review B*, **1999**, 59, 13036-13042	3.3	104
5	Few-Electron Artificial Atoms. *Few-Body Systems*, **1999**, 189-198		2

4	Influence of Donor Impurity on Optical Transitions in Quantum Dots. *Physica Status Solidi (B): Basic Research*, **1998**, 210, 677-682	1.3	5
3	Energy spectrum of centres in spherical quantum dots. *Journal of Physics Condensed Matter*, **1998**, 10, 7575-7586	1.8	44
2	Theoretical Description of Shell Filling in Cylindrical Quantum Dots. *Acta Physica Polonica A*, **1998**, 94, 555-559	0.6	6
1	Ground and Excited States of D□Centres in Semiconductor Quantum Dots. *Materials Science Forum*, **1997**, 258-263, 1707-1712	0.4	2