

Tapash Chakraborty

List of Publications by Year in descending order

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160
papers

6,718
citations

87843

38
h-index

66879

78
g-index

163
all docs

163
docs citations

163
times ranked

3638
citing authors

#	ARTICLE	IF	CITATIONS
1	Quantum dots in a magnetic field: Role of electron-electron interactions. Physical Review Letters, 1990, 65, 108-111.	2.9	980
2	Properties of graphene: a theoretical perspective. Advances in Physics, 2010, 59, 261-482.	35.9	970
3	The Quantum Hall Effects. Springer Series in Solid-state Sciences, 1995, , .	0.3	272
4	Electron-electron interaction and the persistent current in a quantum ring. Physical Review B, 1994, 50, 8460-8468.	1.1	265
5	Effect of electron-electron interactions on the magnetization of quantum dots. Physical Review B, 1992, 45, 1947-1950.	1.1	231
6	Excitons in a parabolic quantum dot in magnetic fields. Physical Review B, 1992, 45, 5980-5985.	1.1	149
7	Quantum dots. , 1999, , 7-108.		149
8	Fractional Quantum Hall States of Dirac Electrons in Graphene. Physical Review Letters, 2006, 97, 126801.	2.9	146
9	Tunable band gap and magnetic ordering by adsorption of molecules on graphene. Physical Review B, 2009, 80, .	1.1	133
10	Fock-Darwin States of Dirac Electrons in Graphene-Based Artificial Atoms. Physical Review Letters, 2007, 98, 186803.	2.9	121
11	Fractional Quantum Hall Effect at Half-Filled Landau Level in a Multiple-Layer Electron System. Physical Review Letters, 1987, 59, 2784-2787.	2.9	117
12	Elementary excitations in the fractional quantum Hall effect and the spin-reversed quasiparticles. Physical Review Letters, 1986, 57, 130-133.	2.9	109
13	Electronic properties of anisotropic quantum dots in a magnetic field. Physical Review B, 1994, 49, 8163-8168.	1.1	109
14	Generation of valley polarized current in bilayer graphene. Applied Physics Letters, 2009, 95, .	1.5	109
15	Ground state of two-dimensional electrons and the reversed spins in the fractional quantum Hall effect. Physical Review B, 1984, 30, 7320-7322.	1.1	106
16	Role of reversed spins in the correlated ground state for the fractional quantum Hall effect. Physical Review B, 1984, 29, 7032-7033.	1.1	103
17	Coulomb screening and collective excitations in a graphene bilayer. Physical Review B, 2007, 75, .	1.1	97
18	Collective excitations of Dirac electrons in a graphene layer with spin-orbit interactions. Physical Review B, 2007, 75, .	1.1	92

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19	Energy levels and magneto-optical transitions in parabolic quantum dots with spin-orbit coupling. Physical Review B, 2006, 73, .	1.1	90
20	Optical Signatures of Spin-Orbit Interaction Effects in a Parabolic Quantum Dot. Physical Review Letters, 2005, 95, 136603.	2.9	85
21	40 years of the quantum Hall effect. Nature Reviews Physics, 2020, 2, 397-401.	11.9	84
22	Interplay between valley polarization and electron-electron interaction in a graphene ring. Physical Review B, 2008, 78, .	1.1	64
23	Stable Pfaffian State in Bilayer Graphene. Physical Review Letters, 2011, 107, 186803.	2.9	62
24	Effects of scattering centers on the energy spectrum of a quantum dot. Physical Review B, 1996, 53, 6971-6974.	1.1	59
25	Charge Transfer via a Two-Strand Superexchange Bridge in DNA. Physical Review Letters, 2006, 97, 106602.	2.9	56
26	Electron spin transitions in quantum Hall systems. Advances in Physics, 2000, 49, 959-1014.	35.9	55
27	Magneto-optical transitions and level crossings in a Coulomb-coupled pair of quantum dots. Physical Review B, 1991, 43, 14289-14292.	1.1	53
28	Persistent currents in a quantum ring: Effects of impurities and interactions. Physical Review B, 1995, 52, 1932-1935.	1.1	52
29	Interacting-electron states and the persistent current in a quantum ring. Solid State Communications, 1993, 87, 809-812.	0.9	50
30	Long-Range Coulomb Interaction in Bilayer Graphene. Physical Review Letters, 2009, 102, 056807.	2.9	50
31	Controllable Driven Phase Transitions in Fractional Quantum Hall States in Bilayer Graphene. Physical Review Letters, 2010, 105, 036801.	2.9	49
32	Sustained ferromagnetism induced by H-vacancies in graphane. Nanotechnology, 2010, 21, 355201.	1.3	49
33	Quantum cascade transitions in nanostructures. Advances in Physics, 2003, 52, 455-521.	35.9	48
34	Electron correlations in a quantum dot with Bychkov-Rashba coupling. Physical Review B, 2005, 71, .	1.1	44
35	Elementary excitations in the fractional quantum Hall effect. Physical Review B, 1985, 31, 4026-4028.	1.1	43
36	Fractional quantum Hall effect in tilted magnetic fields. Physical Review B, 1989, 39, 7971-7973.	1.1	42

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37	Spin-reversed ground state and energy gap in the fractional quantum Hall effect. Surface Science, 1990, 229, 16-20.	0.8	40
38	Thermodynamics and Spin Polarizations of the Fractional Quantum Hall States. Physical Review Letters, 1996, 76, 4018-4021.	2.9	39
39	Coulomb screening and collective excitations in biased bilayer graphene. Physical Review B, 2010, 81, .	1.1	38
40	Irradiated bilayer graphene. Nanotechnology, 2011, 22, 015203.	1.3	37
41	Variational theory of binary boson mixture at $T=0K$. Physical Review B, 1982, 25, 3177-3180.	1.1	34
42	Controllable continuous evolution of electronic states in a single quantum ring. Physical Review B, 2018, 97, .	1.1	34
43	Interlayer repulsion and decoupling effects in stacked turbostratic graphene flakes. Physical Review B, 2011, 84, .	1.1	33
44	On the Nature of Interlayer Interactions in a System of Two Graphene Fragments. Journal of Physical Chemistry C, 2011, 115, 24666-24673.	1.5	31
45	Spin-1 quasiparticle and spin polarization of the ground state in the fractional quantum Hall effect. Physical Review B, 1986, 34, 7076-7079.	1.1	30
46	Dynamical polarization and plasmons in a two-dimensional system with merging Dirac points. Physical Review B, 2016, 93, .	1.1	27
47	Optical Probing of a Fractionally Charged Quasihole in an Incompressible Liquid. Physical Review Letters, 2003, 91, 116403.	2.9	26
48	Electron dynamics in a DNA molecule. Physical Review B, 2005, 71, .	1.1	26
49	Gap Structure of the Hofstadter System of Interacting Dirac Fermions in Graphene. Physical Review Letters, 2014, 112, 176401.	2.9	26
50	Structure of liquid metallic hydrogen as a two-component Fermi fluid at $T=0$. Physical Review B, 1983, 27, 3061-3064.	1.1	25
51	Variational Approach to the Ground State of the Electron-Hole Liquid. Physical Review Letters, 1982, 49, 1034-1037.	2.9	24
52	Subband-Landau-level coupling in the fractional quantum Hall effect in tilted magnetic fields. Physical Review B, 1990, 41, 10202-10205.	1.1	24
53	Traits and characteristics of interacting Dirac fermions in monolayer and bilayer graphene. Solid State Communications, 2013, 175-176, 123-131.	0.9	24
54	Spin-reversed excitations in the fractional quantum Hall effect. Physical Review B, 1990, 41, 10862-10865.	1.1	23

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55	Electronic compressibility of graphene: The case of vanishing electron correlations and the role of chirality. <i>Physical Review B</i> , 2009, 80, .	1.1	22
56	Strong enhancement of Rashba spin-orbit coupling with increasing anisotropy in the Fock-Darwin states of a quantum dot. <i>Physical Review B</i> , 2012, 85, .	1.1	22
57	Structure of binary boson mixtures at $T=0K$. <i>Physical Review B</i> , 1982, 26, 6131-6140.	1.1	21
58	Spin-reversed quasiparticles in the fractional quantum Hall effect: Many-body approach. <i>Physical Review B</i> , 1986, 34, 2926-2928.	1.1	21
59	Influence of adsorbates on the electronic and magnetic properties of graphene with H-vacancy defects. <i>Physical Review B</i> , 2010, 82, .	1.1	21
60	Electrically tunable charge and spin transitions in Landau levels of interacting Dirac fermions in trilayer graphene. <i>Physical Review B</i> , 2012, 86, .	1.1	21
61	Missing fractional quantum Hall states in ZnO. <i>Physical Review B</i> , 2016, 93, .	1.1	21
62	Correlations in coupled electron and hole layers of finite thickness. <i>Physical Review B</i> , 1995, 52, 7845-7848.	1.1	20
63	How the Surrounding Water Changes the Electronic and Magnetic Properties of DNA. <i>Journal of Physical Chemistry B</i> , 2008, 112, 14083-14089.	1.2	20
64	Aspects of anisotropic fractional quantum Hall effect in phosphorene. <i>Physical Review B</i> , 2015, 92, .	1.1	20
65	Fractional quantum hall effect at even-denominator filling fractions. <i>Physical Review B</i> , 1988, 38, 10097-10100.	1.1	18
66	Luminescence spectra of a quantum-dot cascade laser. <i>Applied Physics Letters</i> , 2001, 78, 1820-1822.	1.5	18
67	COLLECTIVE EXCITATIONS OF DIRAC ELECTRONS IN GRAPHENE. <i>International Journal of Modern Physics B</i> , 2007, 21, 1165-1179.	1.0	18
68	Incompressible states of dirac fermions in graphene with anisotropic interactions. <i>Solid State Communications</i> , 2014, 177, 128-131.	0.9	18
69	Magnetization of interacting electrons in anisotropic quantum dots with Rashba spin-orbit interaction. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2016, 81, 334-338.	1.3	18
70	Effect of the spin-orbit coupling on the Raman spectra of a GaAs quantum ring with few electrons. <i>Solid State Communications</i> , 2014, 181, 34-40.	0.9	17
71	Signatures of Majorana fermions in an elliptical quantum ring. <i>Physical Review B</i> , 2016, 93, .	1.1	17
72	Specific heat of quantum Hall systems. <i>Physical Review B</i> , 1997, 55, R1954-R1957.	1.1	16

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73	Spin injection into a short DNA chain. <i>Physical Review B</i> , 2006, 74, .	1.1	16
74	Impurity-induced spin gap asymmetry in nanoscale graphene. <i>Physical Review B</i> , 2009, 80, .	1.1	16
75	Pfaffian state in an electron gas with small Landau level gaps. <i>Physical Review B</i> , 2017, 96, .	1.1	15
76	Spin-reversed Quasiparticles in the Fractional Quantum Hall Effect - Finite System Calculations. <i>Physica Scripta</i> , 1986, T14, 58-61.	1.2	14
77	Some unique magnetic properties of nanoscale quantum rings subjected to a Rashba spin-orbit interaction. <i>Physical Review B</i> , 2008, 78, .	1.1	14
78	Electron correlations in quantum ring and dot systems. <i>Physica B: Condensed Matter</i> , 1995, 212, 256-260.	1.3	13
79	Temperature Dependence of Spin Polarizations at Higher Landau Levels. <i>Physical Review Letters</i> , 1999, 83, 5559-5562.	2.9	13
80	Energetics of the hole transfer in DNA duplex oligomers. <i>Chemical Physics Letters</i> , 2007, 446, 159-164.	1.2	13
81	Superluminal tachyon-like excitations of Dirac fermions in a topological insulator junction. <i>Europhysics Letters</i> , 2012, 100, 17002.	0.7	13
82	Transverse tunneling current through guanine traps in DNA. <i>Physical Review B</i> , 2005, 72, .	1.1	12
83	Polaron tunneling dynamics of a linear polymer of nucleotides. <i>Journal of Physics Condensed Matter</i> , 2008, 20, 075104.	0.7	12
84	Electrical current through DNA containing mismatched base pairs. <i>Nanotechnology</i> , 2010, 21, 245101.	1.3	12
85	Interaction-driven distinctive electronic states of artificial atoms at the ZnO interface. <i>Journal of Physics Condensed Matter</i> , 2017, 29, 215301.	0.7	12
86	Ground-state correlations in the layered electron-hole liquid. <i>Physical Review B</i> , 1984, 29, 6640-6644.	1.1	11
87	Breaking of Larmor's theorem in quantum Hall states with spin-orbit coupling. <i>Physical Review B</i> , 2006, 73, .	1.1	11
88	Interacting Dirac Fermions on a Topological Insulator in a Magnetic Field. <i>Physical Review Letters</i> , 2011, 107, 186801.	2.9	11
89	Optical transitions at commensurate angles in a misoriented bilayer graphene in an external magnetic field. <i>Physical Review B</i> , 2011, 84, .	1.1	11
90	Tunability of the fractional quantum Hall states in buckled Dirac materials. <i>Physical Review B</i> , 2014, 90, .	1.1	11

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91	Long-range Coulomb interaction and Majorana fermions. <i>Physical Review B</i> , 2015, 92, .	1.1	11
92	Optical properties of a quantum-dot cascade structure. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2002, 14, 294-298.	1.3	10
93	Theory of two-charged-component Fermi fluids. <i>Physical Review B</i> , 1984, 29, 3975-3981.	1.1	9
94	Variational calculations for semiconductor superlattices and multilayer systems. <i>Physical Review B</i> , 1994, 49, 8277-8289.	1.1	9
95	Tuning of the Gap in a Laughlin-Bychkov-Rashba Incompressible Liquid. <i>Physical Review Letters</i> , 2005, 94, .	2.9	9
96	Influence of Solvent on the Energetics of Hole Transfer in DNA. <i>Journal of Physical Chemistry B</i> , 2007, 111, 13465-13471.	1.2	9
97	Zippering and unzipping of nanoscale carbon structures. <i>Physical Review B</i> , 2011, 83, .	1.1	9
98	Fractal butterflies in buckled graphenelike materials. <i>Physical Review B</i> , 2015, 91, .	1.1	9
99	Tuning of exciton states in a magnetic quantum ring. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2015, 66, 157-161.	1.3	9
100	Tilt-induced phase transitions in even-denominator fractional quantum Hall states at the ZnO interface. <i>Physical Review B</i> , 2016, 94, .	1.1	9
101	Unique Spin Vortices and Topological Charges in Quantum Dots with Spin-orbit Couplings. <i>Scientific Reports</i> , 2019, 9, 672.	1.6	9
102	Collective excitations in the fractional quantum Hall effect in an alternating-density superlattice. <i>Physical Review B</i> , 1990, 41, 5396-5399.	1.1	8
103	Electronic properties of guanine traps in DNA. <i>Physical Review B</i> , 2006, 73, .	1.1	8
104	Water induced weakly bound electrons in DNA. <i>Journal of Chemical Physics</i> , 2008, 128, 235101.	1.2	8
105	Influence of correlated electrons on the paramagnetism of DNA. <i>Physical Review B</i> , 2008, 78, .	1.1	8
106	Spin hot spots in vertically coupled few-electron isolated quantum dots. <i>Physical Review B</i> , 2006, 74, .	1.1	7
107	Spin-orbit coupling and tunneling current in a parabolic quantum dot. <i>Physical Review B</i> , 2007, 75, .	1.1	7
108	Superintense highly anisotropic optical transitions in anisotropic quantum dots. <i>Physical Review B</i> , 2013, 88, .	1.1	7

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109	Fractional quantum Hall effect in Hofstadter butterflies of Dirac fermions. Journal of Physics Condensed Matter, 2015, 27, 185301.	0.7	7
110	Irregular Aharonov-Bohm effect for interacting electrons in a ZnO quantum ring. Journal of Physics Condensed Matter, 2017, 29, 075605.	0.7	7
111	Some ground-state properties of a binary boson mixture. Journal of Low Temperature Physics, 1982, 48, 151-157.	0.6	6
112	Influence of disorder and a parallel magnetic field on a quantum cascade laser. Applied Physics Letters, 2001, 78, 697-699.	1.5	6
113	Spin-orbit interaction induced singlet-triplet resonant Raman transitions in quantum dot helium. Europhysics Letters, 2012, 99, 17009.	0.7	6
114	Spin transitions in graphene butterflies at an integer filling factor. Physical Review B, 2015, 91, .	1.1	6
115	Nature of the long-range order in the quantum Hall effect regime. Physical Review B, 1990, 41, 7872-7875.	1.1	5
116	Magnetic field induced luminescence spectra in a quantum cascade laser. Applied Physics Letters, 2001, 78, 1973-1975.	1.5	5
117	Interaction of a quantum dot with an incompressible two-dimensional electron gas. Physica E: Low-Dimensional Systems and Nanostructures, 2002, 14, 289-293.	1.3	5
118	Quantum transport anomalies in DNA containing mismatches. Nanotechnology, 2010, 21, 485101.	1.3	5
119	Fractal butterflies of Dirac fermions in monolayer and bilayer graphene. IET Circuits, Devices and Systems, 2015, 9, 19-29.	0.9	5
120	Tuning the topological features of quantum-dot hydrogen and helium by a magnetic field. Physical Review B, 2019, 100, .	1.1	5
121	Electron-hole correlations in Si under uniaxial stress. Solid State Communications, 1983, 45, 195-198.	0.9	4
122	Recombination radiation from a two-dimensional electron system in a strong magnetic field: Spin dependence. Physical Review B, 1991, 44, 13078-13081.	1.1	4
123	Collective excitations, pressure, and compressibility in multilayer systems. Physical Review B, 1993, 48, 1665-1668.	1.1	4
124	Electron correlations in antidot arrays in a magnetic field. Physical Review B, 1996, 53, 4664-4667.	1.1	4
125	Magnetic field effects on intersubband transitions in a quantum nanostructure. Physica E: Low-Dimensional Systems and Nanostructures, 2003, 16, 253-258.	1.3	4
126	The fractional quantum Hall effect of tachyons in a topological insulator junction. Europhysics Letters, 2012, 100, 67008.	0.7	4

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127	Seeking Maxwell's Demon in a non-reciprocal quantum ring. <i>Scientific Reports</i> , 2019, 9, 9244.	1.6	4
128	Magnetic field controlled topological transitions of the spin field in quantum rings with spin orbit couplings. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2021, 128, 114545.	1.3	4
129	Physics Aspects of Charge Migration Through DNA. <i>Nanoscience and Technology</i> , 2007, , 77-119.	1.5	4
130	Stability of even-denominator fractional quantum Hall states in systems with strong Landau-level mixing. <i>Physical Review B</i> , 2021, 104, .	1.1	4
131	Variational calculations for the Sutherland model. <i>Physical Review B</i> , 1989, 39, 869-872.	1.1	3
132	Impurity effects and spin polarizations in a narrow quantum Hall system. <i>Physical Review B</i> , 1998, 58, 9890-9893.	1.1	3
133	Influence of dimensionality on the emission spectra of nanostructures. <i>Applied Physics Letters</i> , 2003, 83, 3671-3673.	1.5	3
134	Spin-orbit effects on resonant tunneling conductance through a double-quantum-dot system. <i>Journal of Physics Condensed Matter</i> , 2008, 20, 135221.	0.7	3
135	Electron correlations in bilayer graphene. <i>Physical Review B</i> , 2010, 82, .	1.1	3
136	Quantum Hall ferromagnets and transport properties of buckled Dirac materials. <i>Physical Review B</i> , 2015, 92, .	1.1	3
137	Excitation gap of fractal quantum hall states in graphene. <i>Journal of Physics Condensed Matter</i> , 2016, 28, 015801.	0.7	3
138	Effective tuning of electron charge and spin distribution in a dot-ring nanostructure at the ZnO interface. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2018, 99, 63-66.	1.3	3
139	Spin transitions in an incompressible liquid Coulomb-coupled to a quantum dot. <i>Physical Review B</i> , 2006, 73, .	1.1	2
140	Tunable ground-state degeneracies in double quantum dots. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2008, 40, 2834-2838.	1.3	2
141	Tunable spin-selective transport through DNA with mismatched base pairs. <i>Journal of Physics Condensed Matter</i> , 2014, 26, 475302.	0.7	2
142	Fractal butterflies of chiral fermions in bilayer graphene: Phase transitions and emergent properties. <i>Physical Review B</i> , 2015, 92, .	1.1	2
143	Excitations in the Fractional Quantum Hall Effect at $\nu=1/2$: Layered Electron Systems. , 1988, , 113-118.		2
144	Chakraborty and Pietiläinen Respond. <i>Physical Review Letters</i> , 1983, 50, 2037-2037.	2.9	1

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145	Fractional Quantum Hall Effect: Introduction. Springer Series in Solid-state Sciences, 1995, , 32-38.	0.3	1
146	Aspects of the Fractional Quantum Hall Effect in Graphene. Nanoscience and Technology, 2014, , 251-300.	1.5	1
147	Electronic, Magnetic and Optical Properties of Quantum Rings in Novel Systems. Nanoscience and Technology, 2018, , 283-326.	1.5	1
148	Isotropic all-electric spin analyzer based on a quantum ring with spin-orbit couplings. Applied Physics Letters, 2021, 118, .	1.5	1
149	The Quantum Hall Effect. , 1992, , 977-1037.		1
150	Correlations in the layered electron-hole liquid. , 1984, , 244-250.		0
151	ELECTRONS AND EXCITONS IN A QUANTUM DOT IN MAGNETIC FIELDS. , 1992, , 347-353.		0
152	Interacting electrons in a narrow quantum hall system. , 1999, , 397-409.		0
153	Spin-orbit interaction in a quantum cascade transition. Physical Review B, 2006, 73, .	1.1	0
154	Electric screening and plasmon dispersion in biased bilayer graphene. , 2010, , .		0
155	Apalkov and Chakraborty Reply:. Physical Review Letters, 2012, 108, .	2.9	0
156	Ground State. Springer Series in Solid-state Sciences, 1988, , 10-38.	0.3	0
157	Elementary Excitations. Springer Series in Solid-state Sciences, 1988, , 39-82.	0.3	0
158	Ground State. Springer Series in Solid-state Sciences, 1995, , 39-86.	0.3	0
159	Elementary Excitations. Springer Series in Solid-state Sciences, 1995, , 87-161.	0.3	0
160	Open Problems and New Directions. Springer Series in Solid-state Sciences, 1995, , 247-248.	0.3	0