Roman M Lutchyn

List of Publications by Year
in descending order

47 papers	8,748 citations	168829 31 h-index	242451 47 g-index
47 all docs	47 docs citations	47 times ranked	4726 citing authors

#	Article	IF	Citations
1	Electronic Structure of InAs and InSb Surfaces: Density Functional Theory and Angleâ€Resolved Photoemission Spectroscopy. Advanced Quantum Technologies, 2022, 5, .	1.8	6
2	Number-conserving analysis of measurement-based braiding with Majorana zero modes. Physical Review B, 2020, 101, .	1.1	15
3	Unified numerical approach to topological semiconductor-superconductor heterostructures. Physical Review B, 2019, 99, .	1.1	64
4	Dephasing of Majorana-based qubits. Physical Review B, 2018, 97, .	1.1	60
5	Impurity-induced states in superconducting heterostructures. Physical Review B, 2018, 97, .	1.1	20
6	Electric field tunable superconductor-semiconductor coupling in Majorana nanowires. New Journal of Physics, 2018, 20, 103049.	1.2	81
7	Effects of Gate-Induced Electric Fields on Semiconductor Majorana Nanowires. Physical Review X, 2018, 8, .	2.8	106
8	Transport through a Majorana Island in the Strong Tunneling Regime. Physical Review Letters, 2017, 119, 057002.	2.9	12
9	Scalable designs for quasiparticle-poisoning-protected topological quantum computation with Majorana zero modes. Physical Review B, 2017, 95, .	1.1	444
10	Signatures of Majorana Kramers pairs in superconductor-Luttinger liquid and superconductor-quantum dot-normal lead junctions. Physical Review B, 2016, 94, .	1.1	9
11	Optimizing spin-orbit splittings in InSb Majorana nanowires. Physical Review B, 2016, 93, .	1.1	16
12	Topological superconductivity in a multichannel Yu-Shiba-Rusinov chain. Physical Review B, 2016, 93, .	1.1	22
13	Majorana zero modes choose Euler numbers as revealed by full counting statistics. Physical Review B, 2015, 92, .	1.1	22
14	Impurity-Induced Bound States in Superconductors with Spin-Orbit Coupling. Physical Review Letters, 2015, 114, 236804.	2.9	40
15	Probing Majorana physics in quantum-dot shot-noise experiments. Physical Review B, 2015, 91, .	1.1	80
16	Interplay between Kondo and Majorana Interactions in Quantum Dots. Physical Review X, 2014, 4, .	2.8	52
17	Soft superconducting gap in semiconductor-based Majorana nanowires. Physical Review B, 2014, 90, .	1.1	26
18	Helical order in one-dimensional magnetic atom chains and possible emergence of Majorana bound states. Physical Review B, 2014, 90, .	1.1	97

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19	Magnetic and superconducting ordering in one-dimensional nanostructures at the LaAlO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>/SrTiO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math> interface. Physical Review B, 2013, 87, .	1.1	48
20	Dimensional crossover in spin-orbit-coupled semiconductor nanowires with induced superconducting pairing. Physical Review B, 2013, 87, .	1.1	49
21	Transport properties of topological superconductorâ€“Luttinger liquid junctions: A real-time Keldysh approach. Physical Review B, 2013, 88, .	1.1	27
22	Effect of thermal fluctuations in topologicalp-wave superconductors. Physical Review B, 2013, 87, .	1.1	10
23	Momentum relaxation in a semiconductor proximity-coupled to a disordered<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>s</mml:mi></mml:math>-wave superconductor: Effect of scattering on topological superconductivity. Physical Review B, 2012, 85, .	1.1	39
24	Topological protection of Majorana qubits. Physical Review B, 2012, 85, .	1.1	61
25	Interplay of Disorder and Interaction in Majorana Quantum Wires. Physical Review Letters, 2012, 109, 146403.	2.9	124
26	Universal transport signatures of Majorana fermions in superconductor-Luttinger liquid junctions. Physical Review B, 2012, 85, .	1.1	132
27	Majorana zero modes in one-dimensional quantum wires without long-ranged superconducting order. Physical Review B, 2011, 84, .	1.1	140
28	Search for Majorana Fermions in Multiband Semiconducting Nanowires. Physical Review Letters, 2011, 106, 127001.	2.9	239
29	Majorana fermions in semiconductor nanowires. Physical Review B, 2011, 84, .	1.1	332
30	Topological Quantum Buses: Coherent Quantum Information Transfer between Topological and Conventional Qubits. Physical Review Letters, 2011, 106, 130505.	2.9	103
31	Interacting topological phases in multiband nanowires. Physical Review B, 2011, 84, .	1.1	87
32	Majorana Fermions and a Topological Phase Transition in Semiconductor-Superconductor Heterostructures. Physical Review Letters, 2010, 105, 077001.	2.9	2,726
33	Non-Abelian quantum order in spin-orbit-coupled semiconductors: Search for topological Majorana particles in solid-state systems. Physical Review B, 2010, 82, .	1.1	408
34	Spontaneous interlayer superfluidity in bilayer systems of cold polar molecules. Physical Review A, 2010, 82, .	1.0	26
35	Tunneling of anyonic Majorana excitations in topological superconductors. Physical Review B, 2010, 82, .	1.1	90
36	Robustness of Majorana fermions in proximity-induced superconductors. Physical Review B, 2010, 82, .	1.1	147

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37	Generic New Platform for Topological Quantum Computation Using Semiconductor Heterostructures. Physical Review Letters, 2010, 104, 040502.	2.9	1,575
38	Proximity effect at the superconductorâ€“topological insulator interface. Physical Review B, 2010, 81, .	1.1	178
39	Effects of fermions on the superfluid-insulator phase diagram of the Bose-Hubbard model. Physical Review B, 2009, 80, .	1.1	14
40	Loss of superfluidity by fermions in the boson Hubbard model on an optical lattice. Physical Review A, 2009, 79, .	1.0	24
41	Splitting of Majorana-Fermion Modes due to Intervortex Tunneling in a<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>p</mml:mi><mml:mi>x</mml:mi></mml:msub><mml:mo>+</mml:mo><mml:mi>i</mml:mi><m Physical Review Letters, 2009, 103, 107001.	2.9	154
42	Dissipation-Driven Quantum Phase Transition in Superconductor-Graphene Systems. Physical Review Letters, 2008, 101, 106402.	2.9	16
43	How to enhance dephasing time in superconducting qubits. Physical Review B, 2008, 77, .	1.1	380
44	Gauge-invariant electromagnetic response of a chiral<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mi>p</mml:mi><mml:mi>x</mml:mi></mml:msub><mml:mo>+</mml:mo><mml:mi>i< Physical Review B, 2008, 77, .	1.1	52
45	Quantum decoherence of a charge qubit in a spin-fermion model. Physical Review B, 2008, 78, .	1.1	35
46	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>p</mml:mi><mml:mi>x</mml:mi></mml:msub><mml:mo>+</mml:mo><mml:mi>i</mml:mi><m from<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>s</mml:mi></mml:math>-Wave Interactions of Fermionic Cold Atoms. Physical Review Letters, 2008, 101, 160401.	2.9	348
47	Boson Hubbard model with weakly coupled fermions. Physical Review B, 2008, 78, .	1.1	12