

Brendon Lovett

List of Publications by Year in descending order

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102
papers

3,642
citations

159358

30
h-index

149479

56
g-index

103
all docs

103
docs citations

103
times ranked

3486
citing authors

#	ARTICLE	IF	CITATIONS
1	Solid-state quantum memory using the ^{31}P nuclear spin. <i>Nature</i> , 2008, 455, 1085-1088.	13.7	351
2	Damping of Exciton Rabi Rotations by Acoustic Phonons in Optically Excited InGaAs Quantum Dots. <i>Physical Review Letters</i> , 2010, 104, 017402.	2.9	258
3	Efficient non-Markovian quantum dynamics using time-evolving matrix product operators. <i>Nature Communications</i> , 2018, 9, 3322.	5.8	187
4	Phonon-Induced Rabi-Frequency Renormalization of Optically Driven Single InGaAs Quantum Dots. <i>Physical Review Letters</i> , 2010, 105, 177402.	2.9	172
5	Optical schemes for quantum computation in quantum dot molecules. <i>Physical Review B</i> , 2003, 68, .	1.1	161
6	Towards a fullerene-based quantum computer. <i>Journal of Physics Condensed Matter</i> , 2006, 18, S867-S883.	0.7	138
7	Two Modifications of Layered Cobaltous Terephthalate: Crystal Structures and Magnetic Properties. <i>Journal of Solid State Chemistry</i> , 2001, 159, 343-351.	1.4	137
8	A general approach to quantum dynamics using a variational master equation: Application to phonon-damped Rabi rotations in quantum dots. <i>Physical Review B</i> , 2011, 84, .	1.1	113
9	Prospects for measurement-based quantum computing with solid state spins. <i>Laser and Photonics Reviews</i> , 2009, 3, 556-574.	4.4	97
10	Superabsorption of light via quantum engineering. <i>Nature Communications</i> , 2014, 5, 4705.	5.8	91
11	Anticrossings in Fano-coupled quantum dots. <i>Physical Review B</i> , 2005, 71, .	1.1	76
12	Hybrid Solid-State Qubits: The Powerful Role of Electron Spins. <i>Annual Review of Condensed Matter Physics</i> , 2011, 2, 189-212.	5.2	67
13	Superabsorption in an organic microcavity: Toward a quantum battery. <i>Science Advances</i> , 2022, 8, eabk3160.	4.7	61
14	A multi-site variational master equation approach to dissipative energy transfer. <i>New Journal of Physics</i> , 2013, 15, 075018.	1.2	56
15	Nanoscale solid-state quantum computing. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2003, 361, 1473-1485.	1.6	52
16	Surface code architecture for donors and dots in silicon with imprecise and nonuniform qubit couplings. <i>Physical Review B</i> , 2016, 93, .	1.1	52
17	Selective Spin Coupling through a Single Exciton. <i>Physical Review Letters</i> , 2004, 93, 150502.	2.9	48
18	Bath-induced coherence and the secular approximation. <i>Physical Review A</i> , 2016, 94, .	1.0	44

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19	Hyperfine Stark effect of shallow donors in silicon. Physical Review B, 2014, 90, .	1.1	41
20	Vibration-assisted resonance in photosynthetic excitation-energy transfer. Physical Review A, 2014, 90, .	1.0	38
21	Entanglement distribution for a practical quantum-dot-based quantum processor architecture. New Journal of Physics, 2007, 9, 20-20.	1.2	36
22	Creating excitonic entanglement in quantum dots through the optical Stark effect. Physical Review A, 2004, 70, .	1.0	35
23	Simulation of open quantum systems by automated compression of arbitrary environments. Nature Physics, 2022, 18, 662-668.	6.5	35
24	Resonant transfer of excitons and quantum computation. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 315, 136-142.	0.9	34
25	Quantum metrology with molecular ensembles. Physical Review A, 2010, 82, .	1.0	34
26	Coherent State Transfer between an Electron and Nuclear Spin in N^{15}	2.9	34
27	Practicality of Spin Chain Wiring in Diamond Quantum Technologies. Physical Review Letters, 2013, 110, 100503.	2.9	34
28	High-fidelity all-optical control of quantum dot spins: Detailed study of the adiabatic approach. Physical Review B, 2008, 77, .	1.1	33
29	Efficient Exploration of Hamiltonian Parameter Space for Optimal Control of Non-Markovian Open Quantum Systems. Physical Review Letters, 2021, 126, 200401.	2.9	33
30	A New Type of Radical-Pair-Based Model for Magnetoreception. Biophysical Journal, 2012, 102, 961-968.	0.2	32
31	Spin fluctuations in the spin-Peierls compound $\text{MEM}(\text{TCNQ})_2$ studied using muon spin relaxation. Physical Review B, 2000, 61, 12241-12248.	1.1	30
32	DEER-Stitch: Combining three- and four-pulse DEER measurements for high sensitivity, deadtime free data. Journal of Magnetic Resonance, 2012, 223, 98-106.	1.2	30
33	Photocell Optimization Using Dark State Protection. Physical Review Letters, 2016, 117, 203603.	2.9	29
34	Temperature and doping-level dependence of magnetic order in $\text{La}_{2-x}\text{Sr}_x\text{NiO}_4$ studied by muon spin rotation. Physical Review B, 1999, 59, 3775-3782.	1.1	28
35	Efficient real-time path integrals for non-Markovian spin-boson models. New Journal of Physics, 2017, 19, 093009.	1.2	28
36	Freezing distributed entanglement in spin chains. Physical Review A, 2007, 76, .	1.0	25

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37	Exchange coupling between silicon donors: The crucial role of the central cell and mass anisotropy. Physical Review B, 2014, 89, .	1.1	25
38	Quantum computing with spin qubits interacting through delocalized excitons: Overcoming hole mixing. Physical Review B, 2005, 72, .	1.1	24
39	Quantum thermometry using the ac Stark shift within the Rabi model. Physical Review B, 2013, 88, .	1.1	24
40	Synthesis and investigation of donor-“porphyrin”-acceptor triads with long-lived photo-induced charge-separate states. Chemical Science, 2015, 6, 6468-6481.	3.7	24
41	Quantum-Enhanced Capture of Photons Using Optical Ratchet States. Journal of Physical Chemistry C, 2017, 121, 20714-20719.	1.5	24
42	All-Optical Measurement-Based Quantum-Information Processing in Quantum Dots. Physical Review Letters, 2006, 97, 250504.	2.9	21
43	Robust adiabatic approach to optical spin entangling in coupled quantum dots. New Journal of Physics, 2008, 10, 073016.	1.2	21
44	Quantum Heat Statistics with Time-Evolving Matrix Product Operators. PRX Quantum, 2021, 2, .	3.5	21
45	Exact Dynamics of Nonadditive Environments in Non-Markovian Open Quantum Systems. PRX Quantum, 2022, 3, .	3.5	21
46	Effect of detuning on the phonon induced dephasing of optically driven InGaAs/GaAs quantum dots. Journal of Applied Physics, 2011, 109, 102415.	1.1	20
47	Qubits in the pink. Nature, 2006, 444, 49-49.	13.7	19
48	Investigating the generality of time-local master equations. Physical Review A, 2012, 86, .	1.0	18
49	Exact quantum dynamics in structured environments. Physical Review Research, 2020, 2, .	1.3	18
50	Physical properties of the $n=3$ Ruddlesden - Popper compound. Journal of Physics Condensed Matter, 1998, 10, L727-L735.	0.7	17
51	Optical quantum computation with perpetually coupled spins. Physical Review A, 2004, 70, .	1.0	17
52	Entangling Remote Nuclear Spins Linked by a Chromophore. Physical Review Letters, 2010, 104, 200501.	2.9	17
53	Molecular dynamics in a nematic liquid crystal probed by implanted muons. Physical Review B, 2001, 63, .	1.1	16
54	Sub-Doppler laser cooling of $⁴⁰K$ with Raman gray molasses on the $\{D\}_2$ line. Journal of Physics B: Atomic, Molecular and Optical Physics, 2017, 50, 095002.	0.6	16

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55	A quantum dot single spin meter. <i>New Journal of Physics</i> , 2009, 11, 043031.	1.2	14
56	Optimal power generation using dark states in dimers strongly coupled to their environment. <i>New Journal of Physics</i> , 2019, 21, 063025.	1.2	13
57	Spin Lifetimes in Quantum Dots from Noise Measurements. <i>Physical Review Letters</i> , 2009, 102, 016802.	2.9	12
58	Creating nuclear spin entanglement using an optical degree of freedom. <i>Physical Review A</i> , 2011, 84, .	1.0	12
59	Muon-spin-relaxation studies of magnetic order and dynamics of the Ruddlesden-Popper phases $\text{Sr}_2\text{RMn}_2\text{O}_7$ (R=Pr, Nd, Sm, Eu, Gd, Tb, Dy, and Ho). <i>Physical Review B</i> , 1999, 60, 12286-12293.	1.1	11
60	Quantum dynamics in a tiered non-Markovian environment. <i>New Journal of Physics</i> , 2015, 17, 023063.	1.2	11
61	Coherent exciton dynamics in a dissipative environment maintained by an off-resonant vibrational mode. <i>Physical Review A</i> , 2016, 93, .	1.0	11
62	Several Kinds of Aminoxyl Radicals and their Metal Ion Complexes. <i>Molecular Crystals and Liquid Crystals</i> , 1999, 334, 477-486.	0.3	10
63	Muon radical states in some electron donor and acceptor molecules. <i>Magnetic Resonance in Chemistry</i> , 2000, 38, S27-S32.	1.1	10
64	Experimental observation of the breaking and recombination of single Cooper pairs. <i>Physical Review B</i> , 2014, 90, .	1.1	10
65	Environmentally Improved Coherent Light Harvesting. <i>Journal of Physical Chemistry Letters</i> , 2021, 12, 6143-6151.	2.1	10
66	Stability of the vortex lattice in ET superconductors studied by ^1H SR. <i>Synthetic Metals</i> , 1999, 103, 1925-1928.	2.1	9
67	Organic Magnetic Materials Studied by Positive Muons. <i>Hyperfine Interactions</i> , 2001, 133, 169-177.	0.2	9
68	Muon-spin-rotation and magnetization study of metal-organic magnets based on the dicyanamide anion. <i>Journal of Physics Condensed Matter</i> , 2001, 13, 2263-2270.	0.7	9
69	Quantum gates with donors in germanium. <i>Physical Review B</i> , 2016, 94, .	1.1	9
70	Global optical control of a quantum spin chain. <i>New Journal of Physics</i> , 2006, 8, 69-69.	1.2	8
71	Strategies for entangling remote spins with unequal coupling to an optically active mediator. <i>New Journal of Physics</i> , 2008, 10, 073027.	1.2	8
72	Spin detection at elevated temperatures using a driven double quantum dot. <i>Physical Review B</i> , 2010, 82, .	1.1	8

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73	Rapid and Robust Spin State Amplification. <i>Physical Review Letters</i> , 2011, 106, 167204.	2.9	8
74	Overcoming phonon-induced dephasing for indistinguishable photon sources. <i>New Journal of Physics</i> , 2012, 14, 113004.	1.2	8
75	Probing bath-induced entanglement in a qubit pair by measuring photon correlations. <i>New Journal of Physics</i> , 2014, 16, 103016.	1.2	8
76	Unveiling non-Markovian spacetime signaling in open quantum systems with long-range tensor network dynamics. <i>Physical Review A</i> , 2021, 104, .	1.0	8
77	Publisher's Note: General approach to quantum dynamics using a variational master equation: Application to phonon-damped Rabi rotations in quantum dots [Phys. Rev. B84, 081305(R) (2011)]. <i>Physical Review B</i> , 2011, 84, .	1.1	7
78	Quantum capacitance and charge sensing of a superconducting double dot. <i>Applied Physics Letters</i> , 2016, 109, .	1.5	7
79	Microwave irradiation and quasiparticles in a superconducting double dot. <i>Physical Review B</i> , 2017, 95, .	1.1	7
80	Avoiding gauge ambiguities in cavity quantum electrodynamics. <i>Scientific Reports</i> , 2021, 11, 4281.	1.6	7
81	Spin dynamics in the spin-gap system studied using muon-spin relaxation. <i>Journal of Physics Condensed Matter</i> , 1998, 10, L259-L263.	0.7	5
82	Layered transition metal molecular magnets studied with implanted muons. <i>Synthetic Metals</i> , 1999, 103, 2325-2326.	2.1	5
83	Comment on "Multipartite Entanglement Among Single Spins in Diamond". <i>Science</i> , 2009, 323, 1169-1169.	6.0	5
84	Muon study of the spin dynamics in the organic spin-Peierls compound MEM(TCNQ) ₂ . <i>Synthetic Metals</i> , 1999, 103, 2034-2037.	2.1	4
85	Measurement-based approach to entanglement generation in coupled quantum dots. <i>Physical Review B</i> , 2009, 79, .	1.1	4
86	Coherence protection in coupled quantum systems. <i>Physical Review A</i> , 2018, 97, .	1.0	4
87	Atomic "molecular superlattices. <i>Chemical Communications</i> , 2006, , 1944-1946.	2.2	3
88	Large spin entangled current from a passive device. <i>New Journal of Physics</i> , 2009, 11, 013018.	1.2	3
89	Aspects of quantum coherence in nanosystems. <i>European Journal of Physics</i> , 2009, 30, S89-S100.	0.3	3
90	Creating and preserving multipartite entanglement with spin chains. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2008, 5, 2481-2485.	0.8	2

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91	Spin qubits feel the strain. <i>Physics Magazine</i> , 2011, 4, .	0.1	2
92	Designing spin-channel geometries for entanglement distribution. <i>Physical Review A</i> , 2016, 94, .	1.0	2
93	Muon radical states in some electron donor and acceptor molecules. , 2000, 38, S27.		2
94	Localisation determines the optimal noise rate for quantum transport. <i>New Journal of Physics</i> , 2021, 23, 123014.	1.2	2
95	Analytic expression for the optical exciton transition rates in the polaron frame. <i>Physical Review B</i> , 2022, 105, .	1.1	2
96	Magnetic field sensing using a driven double quantum dot. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2010, 42, 895-898.	1.3	1
97	Generating distributed entanglement from electron currents. <i>New Journal of Physics</i> , 2011, 13, 103004.	1.2	1
98	Coherent and passive one dimensional quantum memory. <i>New Journal of Physics</i> , 2014, 16, 103025.	1.2	1
99	Muon radical states in some electron donor and acceptor molecules. <i>Magnetic Resonance in Chemistry</i> , 2000, 38, S27-S32.	1.1	1
100	Publisher's Note: High-fidelity all-optical control of quantum dot spins: Detailed study of the adiabatic approach [Phys. Rev. B77, 115322 (2008)]. <i>Physical Review B</i> , 2008, 77, .	1.1	0
101	Branching spin chain dynamics. <i>Journal of Magnetism and Magnetic Materials</i> , 2009, 321, 949-956.	1.0	0
102	Probing charge fluctuator correlations using quantum dot pairs. <i>Physical Review B</i> , 2015, 91, .	1.1	0