Xinhua Peng

List of Publications by Year in Descending Order

110 papers	**2,648** citations	**26** h-index	**47** g-index
116 ext. papers	**3,248** ext. citations	**4.9** avg, IF	**5.05** L-index

#	Paper	IF	Citations
110	Collision-Sensitive Spin Noise. *Physical Review Applied*, **2022**, 17,	4.3	1
109	Search for exotic spin-dependent interactions with a spin-based amplifier. *Science Advances*, **2021**, 7, eabi9535	14.3	2
108	Experimental quantum simulation of superradiant phase transition beyond no-go theorem via antisqueezing. *Nature Communications*, **2021**, 12, 6281	17.4	1
107	Experimental cryptographic verification for near-term quantum cloud computing. *Science Bulletin*, **2021**, 66, 23-28	10.6	1
106	Hybrid quantum-classical approach to enhanced quantum metrology. *Scientific Reports*, **2021**, 11, 672	4.9	4
105	Zero- to ultralow-field nuclear magnetic resonance and its applications. *Fundamental Research*, **2021**, 1, 68-84		1
104	Floquet maser. *Science Advances*, **2021**, 7,	14.3	10
103	Experimental study of quantum coherence decomposition and trade-off relations in a tripartite system. *Npj Quantum Information*, **2021**, 7,	8.6	1
102	Revealing weak histidine N homonuclear scalar couplings using Solid-State Magic-Angle-Spinning NMR spectroscopy. *Journal of Magnetic Resonance*, **2020**, 316, 106757	3	2
101	Combining the synergistic control capabilities of modeling and experiments: Illustration of finding a minimum-time quantum objective. *Physical Review A*, **2020**, 101,	2.6	4
100	Algorithmic cooling based on cross-relaxation and decoherence-free subspace. *Science China: Physics, Mechanics and Astronomy*, **2020**, 63, 1	3.6	0
99	Interference in Atomic Magnetometry. *Advanced Quantum Technologies*, **2020**, 3, 2000078	4.3	5
98	Optimizing adiabatic quantum pathways via a learning algorithm. *Physical Review A*, **2020**, 102,	2.6	3
97	Probe optimization for quantum metrology via closed-loop learning control. *Npj Quantum Information*, **2020**, 6,	8.6	9
96	Subspace controllability of symmetric spin networks. *Physical Review A*, **2020**, 102,	2.6	1
95	Assessing three closed-loop learning algorithms by searching for high-quality quantum control pulses. *Physical Review A*, **2020**, 102,	2.6	2
94	Experimental Realization of Shortcuts to Adiabaticity in a Nonintegrable Spin Chain by Local Counterdiabatic Driving. *Physical Review Applied*, **2020**, 13,	4.3	6

93	Magnetic Gradiometer for the Detection of Zero- to Ultralow-Field Nuclear Magnetic Resonance. *Physical Review Applied*, **2019**, 11,	4.3	11
92	Floquet-engineered quantum state transfer in spin chains. *Science Bulletin*, **2019**, 64, 888-895	10.6	8
91	Experimental preparation of topologically ordered states via adiabatic evolution. *Science China: Physics, Mechanics and Astronomy*, **2019**, 62, 1	3.6	2
90	Uncertainty equality with quantum memory and its experimental verification. *Npj Quantum Information*, **2019**, 5,	8.6	11
89	Experimental preparation of Greenberger-Horne-Zeilinger states in an Ising spin model by partially suppressing the nonadiabatic transitions. *Physical Review A*, **2019**, 99,	2.6	9
88	Quantum Simulation of Resonant Transitions for Solving the Eigenproblem of an Effective Water Hamiltonian. *Physical Review Letters*, **2019**, 122, 090504	7.4	10
87	Single-Loop and Composite-Loop Realization of Nonadiabatic Holonomic Quantum Gates in a Decoherence-Free Subspace. *Physical Review Applied*, **2019**, 12,	4.3	43
86	Characterization of Arbitrary-Order Correlations in Quantum Baths by Weak Measurement. *Physical Review Letters*, **2019**, 123, 050603	7.4	10
85	An improved differential evolution algorithm for learning high-fidelity quantum controls. *Science Bulletin*, **2019**, 64, 1402-1408	10.6	19
84	Quantum speedup in solving the maximal-clique problem. *Physical Review A*, **2018**, 97,	2.6	8
83	Experimental demonstration of nonlinear quantum metrology with optimal quantum state. *Science Bulletin*, **2018**, 63, 469-476	10.6	11
82	Experimentally probing topological order and its breakdown through modular matrices. *Nature Physics*, **2018**, 14, 160-165	16.2	21
81	Feedback control for manipulating magnetization in spin-exchange optical pumping system. *Science China: Physics, Mechanics and Astronomy*, **2018**, 61, 1	3.6	3
80	Experimental Demonstration of Observability and Operability of Robustness of Coherence. *Physical Review Letters*, **2018**, 120, 230504	7.4	19
79	Experimental benchmarking of quantum control in zero-field nuclear magnetic resonance. *Science Advances*, **2018**, 4, eaar6327	14.3	25
78	Numerical optimal control of spin systems at zero magnetic field. *Physical Review A*, **2018**, 97,	2.6	6
77	Time-optimal control of independent spin-1/2 systems under simultaneous control. *Physical Review A*, **2018**, 98,	2.6	5
76	Engineering spin Hamiltonians using multiple pulse sequences in solid state NMR spectroscopy. *Journal of Magnetic Resonance*, **2018**, 294, 83-92	3	4

75	Preparing Greenberger-Horne-Zeilinger and W states on a long-range Ising spin model by global controls. *Physical Review A*, **2017**, 95,	2.6	17
74	Heat-bath algorithmic cooling with correlated qubit-environment interactions. *New Journal of Physics*, **2017**, 19, 113047	2.9	16
73	Quantum Image Processing and Its Application to Edge Detection: Theory and Experiment. *Physical Review X*, **2017**, 7,	9.1	25
72	Transient NOE enhancement in solid-state MAS NMR of mobile systems. *Journal of Magnetic Resonance*, **2017**, 284, 73-79	3	0
71	Universal quantum control in zero-field nuclear magnetic resonance. *Physical Review A*, **2017**, 95,	2.6	11
70	Measuring Out-of-Time-Order Correlators on a Nuclear Magnetic Resonance Quantum Simulator. *Physical Review X*, **2017**, 7,	9.1	158
69	Hybrid Quantum-Classical Approach to Quantum Optimal Control. *Physical Review Letters*, **2017**, 118, 150503	7.4	93
68	Generic preparation and entanglement detection of equal superposition states. *Science China: Physics, Mechanics and Astronomy*, **2017**, 60, 1	3.6	6
67	Experimental technique for multi-qubit nuclear magnetic resonance system. *Wuli Xuebao/Acta Physica Sinica*, **2017**, 66, 150302	0.6	1
66	Quantum state and process tomography via adaptive measurements. *Science China: Physics, Mechanics and Astronomy*, **2016**, 59, 1	3.6	19
65	Selective-pulse-network compilation on a liquid-state nuclear-magnetic-resonance system. *Physical Review A*, **2016**, 94,	2.6	7
64	Pure-state tomography with the expectation value of Pauli operators. *Physical Review A*, **2016**, 93,	2.6	16
63	Experimental observation of topological transitions in interacting multispin systems. *Physical Review A*, **2016**, 93,	2.6	8
62	Experimental Test of Heisenberg's Measurement Uncertainty Relation Based on Statistical Distances. *Physical Review Letters*, **2016**, 116, 160405	7.4	31
61	Tomography is Necessary for Universal Entanglement Detection with Single-Copy Observables. *Physical Review Letters*, **2016**, 116, 230501	7.4	30
60	Experimental simulation of the Unruh effect on an NMR quantum simulator. *Science China: Physics, Mechanics and Astronomy*, **2016**, 59, 1	3.6	23
59	Approximation of reachable sets for coherently controlled open quantum systems: Application to quantum state engineering. *Physical Review A*, **2016**, 94,	2.6	7
58	Revisiting spin-lattice relaxation time measurements for dilute spins in high-resolution solid-state NMR spectroscopy. *Journal of Magnetic Resonance*, **2016**, 268, 107-113	3	4

57	Experimental Observation of the Ground-State Geometric Phase of Three-Spin XY Model. *Chinese Physics Letters*, **2016**, 33, 060301	1.8	
56	Quantum simulation of interaction blockade in a two-site Bose–Hubbard system with solid quadrupolar crystal. *New Journal of Physics*, **2015**, 17, 053028	2.9	4
55	Hybrid magic state distillation for universal fault-tolerant quantum computation. *Physical Review A*, **2015**, 91,	2.6	4
54	Experimental observation of Lee-Yang zeros. *Physical Review Letters*, **2015**, 114, 010601	7.4	85
53	Quantum control of nuclear magnetic resonance spin systems. *Wuli Xuebao/Acta Physica Sinica*, **2015**, 64, 167601	0.6	3
52	Determining an n-qubit state by a single apparatus through a pairwise interaction. *Physical Review A*, **2014**, 89,	2.6	4
51	Experimental implementation of adiabatic passage between different topological orders. *Physical Review Letters*, **2014**, 113, 080404	7.4	21
50	Experimental realization of a compressed quantum simulation of a 32-spin Ising chain. *Physical Review Letters*, **2014**, 112, 220501	7.4	29
49	Experimental realization of quantum algorithm for solving linear systems of equations. *Physical Review A*, **2014**, 89,	2.6	53
48	Preparation of Greenberger-Horne-Zeilinger and W states on a one-dimensional Ising chain by global control. *Physical Review A*, **2013**, 87,	2.6	19
47	Experimental demonstration of simplified quantum process tomography. *Journal of Chemical Physics*, **2013**, 138, 024318	3.9	6
46	Experimental demonstration of the quantum Zeno effect in NMR with entanglement-based measurements. *Physical Review A*, **2013**, 87,	2.6	13
45	Quantum factorization of 143 on a dipolar-coupling nuclear magnetic resonance system. *Physical Review Letters*, **2012**, 108, 130501	7.4	100
44	Quantum chemistry simulation on quantum computers: theories and experiments. *Physical Chemistry Chemical Physics*, **2012**, 14, 9411-20	3.6	27
43	Preparing Pseudo-Pure States in a Quadrupolar Spin System Using Optimal Control. *Chinese Physics Letters*, **2012**, 29, 127601	1.8	4
42	An Efficient Exact Quantum Algorithm for the Integer Square-free Decomposition Problem. *Scientific Reports*, **2012**, 2, 260	4.9	9
41	Experimental study of quantum simulation for quantum chemistry with a nuclear magnetic resonance simulator. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2012**, 370, 4734-47	3	2
40	Experimental demonstration of a quantum annealing algorithm for the traveling salesman problem in a nuclear-magnetic-resonance quantum simulator. *Physical Review A*, **2011**, 83,	2.6	17

39	Simulation of chemical isomerization reaction dynamics on a NMR quantum simulator. *Physical Review Letters*, **2011**, 107, 020501	7.4	51
38	Experimental demonstration of a unified framework for mixed-state geometric phases. *Europhysics Letters*, **2011**, 94, 20007	1.6	15
37	Experimental demonstration of the Deutsch-Jozsa algorithm in homonuclear multispin systems. *Physical Review A*, **2011**, 84,	2.6	9
36	Determining an unknown state of a high-dimensional quantum system with a single, factorized observable. *Physical Review A*, **2011**, 83,	2.6	4
35	Experimental demonstration of probabilistic quantum cloning. *Physical Review Letters*, **2011**, 106, 180404	7.4	26
34	High fidelity quantum memory via dynamical decoupling: theory and experiment. *Journal of Physics B: Atomic, Molecular and Optical Physics*, **2011**, 44, 154003	1.3	18
33	Solving quantum ground-state problems with nuclear magnetic resonance. *Scientific Reports*, **2011**, 1, 88	4.9	38
32	Room-temperature implementation of the Deutsch-Jozsa algorithm with a single electronic spin in diamond. *Physical Review Letters*, **2010**, 105, 040504	7.4	111
31	Experimental generation of pseudo-bound-entanglement. *Physical Review A*, **2010**, 81,	2.6	23
30	Experimental implementation of a quantum random-walk search algorithm using strongly dipolar coupled spins. *Physical Review A*, **2010**, 81,	2.6	22
29	Experimental demonstration of deterministic one-way quantum computation on a NMR quantum computer. *Physical Review A*, **2010**, 81,	2.6	8
28	Performance comparison of dynamical decoupling sequences for a qubit in a rapidly fluctuating spin bath. *Physical Review A*, **2010**, 82,	2.6	68
27	Ground-state entanglement in a system with many-body interactions. *Physical Review A*, **2010**, 81,	2.6	17
26	Observation of the ground-state geometric phase in a Heisenberg XY model. *Physical Review Letters*, **2010**, 105, 240405	7.4	33
25	NMR implementation of a molecular hydrogen quantum simulation with adiabatic state preparation. *Physical Review Letters*, **2010**, 104, 030502	7.4	159
24	Spin qubits for quantum simulations. *Frontiers of Physics in China*, **2010**, 5, 1-25		19
23	Quantum simulation of a system with competing two- and three-body interactions. *Physical Review Letters*, **2009**, 103, 140501	7.4	95
22	Experimentally simulating the violation of Bell-type inequalities for generalized GHZ states. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **2009**, 373, 4222-4226	2.3	1

21	Quantum adiabatic algorithm for factorization and its experimental implementation. *Physical Review Letters*, **2008**, 101, 220405	7.4	89
20	Detection of quantum critical points by a probe qubit. *Physical Review Letters*, **2008**, 100, 100501	7.4	81
19	Quantitative complementarity between local and nonlocal character of quantum states in a three-qubit system. *Physical Review A*, **2008**, 77,	2.6	10
18	NMR implementation of factoring large numbers with Gauß sums: Suppression of ghost factors. *Europhysics Letters*, **2008**, 84, 40006	1.6	19
17	Measuring complete quantum states with a single observable. *Physical Review A*, **2007**, 76,	2.6	8
16	Effect of system level structure and spectral distribution of the environment on the decoherence rate. *Physical Review A*, **2007**, 75,	2.6	16
15	Experimental observation of a topological phase in the maximally entangled state of a pair of qubits. *Physical Review A*, **2007**, 76,	2.6	31
14	Iterative quantum-state transfer along a chain of nuclear spin qubits. *Physical Review A*, **2007**, 76,	2.6	26
13	Factorizing numbers with the Gauss sum technique: NMR implementations. *Physical Review A*, **2007**, 75,	2.6	32
12	Realization of entanglement-assisted qubit-covariant symmetric-informationally-complete positive-operator-valued measurements. *Physical Review A*, **2006**, 74,	2.6	12
11	Experimental quantum multimeter and one-qubit fingerprinting. *Physical Review A*, **2006**, 74,	2.6	20
10	Speedup of quantum-state transfer by three-qubit interactions: Implementation by nuclear magnetic resonance. *Physical Review A*, **2006**, 73,	2.6	23
9	Quantum phase transition of ground-state entanglement in a Heisenberg spin chain simulated in an NMR quantum computer. *Physical Review A*, **2005**, 71,	2.6	81
8	Quantification of complementarity in multiqubit systems. *Physical Review A*, **2005**, 72,	2.6	44
7	"Spectral implementation" for creating a labeled pseudo-pure state and the Bernstein-Vazirani algorithm in a four-qubit nuclear magnetic resonance quantum processor. *Journal of Chemical Physics*, **2004**, 120, 3579-85	3.9	9
6	An interferometric complementarity experiment in a bulk nuclear magnetic resonance ensemble. *Journal of Physics A*, **2003**, 36, 2555-2563		21
5	Experimental implementation of remote state preparation by nuclear magnetic resonance. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **2003**, 306, 271-276	2.3	181
4	Experimental implementation of Hogg's algorithm on a three-quantum-bit NMR quantum computer. *Physical Review A*, **2002**, 65,	2.6	20

3   Preparation of pseudo-pure states by line-selective pulses in nuclear magnetic resonance. *Chemical Physics Letters*, **2001**, 340, 509-516   2.5   42

2   Experimental testing of complementarity for ensemble-averaged spin states. *Journal of Physics B: Atomic, Molecular and Optical Physics*, **2001**, 34, 4349-4357   1.3   8

1   Search for axion-like dark matter with spin-based amplifiers. *Nature Physics*,   16.2   7