

# Sahel Ashhab

## List of Publications by Year in descending order

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Version: 2024-02-01

87  
papers

8,423  
citations

94433

37  
h-index

58581

82  
g-index

87  
all docs

87  
docs citations

87  
times ranked

6382  
citing authors

#	ARTICLE	IF	CITATIONS
1	Quantum simulation. <i>Reviews of Modern Physics</i> , 2014, 86, 153-185.	45.6	1,881
2	Hybrid quantum circuits: Superconducting circuits interacting with other quantum systems. <i>Reviews of Modern Physics</i> , 2013, 85, 623-653.	45.6	1,212
3	Landau-Zener-Stückelberg interferometry. <i>Physics Reports</i> , 2010, 492, 1-30.	25.6	639
4	Natural and artificial atoms for quantum computation. <i>Reports on Progress in Physics</i> , 2011, 74, 104401.	20.1	569
5	Superconducting qubit oscillator circuit beyond the ultrastrong-coupling regime. <i>Nature Physics</i> , 2017, 13, 44-47.	16.7	462
6	Qubit-oscillator systems in the ultrastrong-coupling regime and their potential for preparing nonclassical states. <i>Physical Review A</i> , 2010, 81, .	2.5	292
7	Nonperturbative theory of weak pre- and post-selected measurements. <i>Physics Reports</i> , 2012, 520, 43-133.	25.6	262
8	Low-decoherence flux qubit. <i>Physical Review B</i> , 2007, 75, .	3.2	203
9	Two-level systems driven by large-amplitude fields. <i>Physical Review A</i> , 2007, 75, .	2.5	203
10	Quantum-criticality-induced strong Kerr nonlinearities in optomechanical systems. <i>Scientific Reports</i> , 2013, 3, 2943.	3.3	150
11	Superradiance transition in a system with a single qubit and a single oscillator. <i>Physical Review A</i> , 2013, 87, .	2.5	120
12	COVID-19 (SARS-CoV-2) outbreak monitoring using wastewater-based epidemiology in Qatar. <i>Science of the Total Environment</i> , 2021, 774, 145608.	8.0	120
13	Controllable Coherent Population Transfers in Superconducting Qubits for Quantum Computing. <i>Physical Review Letters</i> , 2008, 100, 113601.	7.8	107
14	Quantum Two-Level Systems in Josephson Junctions as Naturally Formed Qubits. <i>Physical Review Letters</i> , 2006, 97, 077001.	7.8	102
15	Observation of Floquet States in a Strongly Driven Artificial Atom. <i>Physical Review Letters</i> , 2015, 115, 133601.	7.8	92
16	Interqubit coupling mediated by a high-excitation-energy quantum object. <i>Physical Review B</i> , 2008, 77, .	3.2	75
17	Quantum algorithm for simulating the dynamics of an open quantum system. <i>Physical Review A</i> , 2011, 83, .	2.5	70
18	Using superconducting qubit circuits to engineer exotic lattice systems. <i>Physical Review A</i> , 2010, 82, .	2.5	69

#	ARTICLE	IF	CITATIONS
19	Inversion of Qubit Energy Levels in Qubit-Oscillator Circuits in the Deep-Strong-Coupling Regime. Physical Review Letters, 2018, 120, 183601.	7.8	69
20	Decoherence in a scalable adiabatic quantum computer. Physical Review A, 2006, 74, .	2.5	67
21	Speed limits for quantum gates in multiqubit systems. Physical Review A, 2012, 85, .	2.5	62
22	External Josephson effect in Bose-Einstein condensates with a spin degree of freedom. Physical Review A, 2002, 66, .	2.5	61
23	Selective darkening of degenerate transitions demonstrated with two superconducting quantum bits. Nature Physics, 2010, 6, 763-766.	16.7	61
24	Enhancing the carrier thermalization time in organometallic perovskites by halide mixing. Physical Chemistry Chemical Physics, 2016, 18, 5219-5231.	2.8	61
25	Characteristic spectra of circuit quantum electrodynamics systems from the ultrastrong- to the deep-strong-coupling regime. Physical Review A, 2017, 95, .	2.5	60
26	Observation of Time-Domain Rabi Oscillations in the Landau-Zener Regime with a Single Electronic Spin. Physical Review Letters, 2014, 112, 010503.	7.8	55
27	Red to green rainbow photoluminescence from unoxidized silicon nanocrystallites. Journal of Applied Physics, 1998, 83, 3929-3931.	2.5	52
28	Bose-Einstein condensation of spin-1/2 atoms with conserved total spin. Physical Review A, 2003, 68, .	2.5	51
29	Single-artificial-atom lasing using a voltage-biased superconducting charge qubit. New Journal of Physics, 2009, 11, 023030.	2.9	51
30	Control-free control: Manipulating a quantum system using only a limited set of measurements. Physical Review A, 2010, 82, .	2.5	48
31	Fully connected network of superconducting qubits in a cavity. New Journal of Physics, 2008, 10, 113020.	2.9	47
32	Lower limit on the achievable temperature in resonator-based sideband cooling. Physical Review B, 2008, 78, .	3.2	46
33	Solution-processed perovskite-colloidal quantum dot tandem solar cells for photon collection beyond 1000 nm. Journal of Materials Chemistry A, 2019, 7, 26020-26028.	10.3	44
34	Implementation of a Walsh-Hadamard Gate in a Superconducting Qutrit. Physical Review Letters, 2020, 125, 180504.	7.8	42
35	Landau-Zener transitions in a two-level system coupled to a finite-temperature harmonic oscillator. Physical Review A, 2014, 90, .	2.5	40
36	Rabi oscillations in a qubit coupled to a quantum two-level system. New Journal of Physics, 2006, 8, 103-103.	2.9	39

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37	Efficient quantum algorithm for preparing molecular-system-like states on a quantum computer. <i>Physical Review A</i> , 2009, 79, .	2.5	39
38	Amplitude spectroscopy of two coupled qubits. <i>Physical Review B</i> , 2012, 85, .	3.2	37
39	Inverse Landau-Zener-Stückelberg problem for qubit-resonator systems. <i>Physical Review B</i> , 2012, 85, .	3.2	37
40	Generalized switchable coupling for superconducting qubits using double resonance. <i>Physical Review B</i> , 2006, 74, .	3.2	34
41	Dynamics of a two-level system under strong driving: Quantum-gate optimization based on Floquet theory. <i>Physical Review A</i> , 2016, 94, .	2.5	34
42	Weak and strong measurement of a qubit using a switching-based detector. <i>Physical Review A</i> , 2009, 79, .	2.5	31
43	The information about the state of a qubit gained by a weakly coupled detector. <i>New Journal of Physics</i> , 2009, 11, 083017.	2.9	30
44	Enhanced coherence of all-nitride superconducting qubits epitaxially grown on silicon substrate. <i>Communications Materials</i> , 2021, 2, .	6.9	30
45	Quantum state transfer in a disordered one-dimensional lattice. <i>Physical Review A</i> , 2015, 92, .	2.5	29
46	Observing quantum nonlocality in the entanglement between modes of massive particles. <i>Physical Review A</i> , 2007, 75, .	2.5	25
47	Effect of disorder on transport properties in a tight-binding model for lead halide perovskites. <i>Scientific Reports</i> , 2017, 7, 8902.	3.3	25
48	Quantum Simulation of Resonant Transitions for Solving the Eigenproblem of an Effective Water Hamiltonian. <i>Physical Review Letters</i> , 2019, 122, 090504.	7.8	25
49	Switchable coupling for superconducting qubits using double resonance in the presence of crosstalk. <i>Physical Review B</i> , 2007, 76, .	3.2	24
50	Entanglement amplification via local weak measurements. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2012, 45, 415303.	2.1	24
51	Landau-Zener transitions in an open multilevel quantum system. <i>Physical Review A</i> , 2016, 94, .	2.5	24
52	Band-Gap Tuning in All-Inorganic CsPb <sub>x</sub> Sn <sub>1-x</sub> Br <sub>3</sub> Perovskites. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 4203-4210.	8.0	24
53	Generation of Macroscopic Entangled States in Coupled Superconducting Phase Qubits. <i>Journal of the Physical Society of Japan</i> , 2007, 76, 054802.	1.6	23
54	Detecting mode entanglement: The role of coherent states, superselection rules, and particle statistics. <i>Physical Review A</i> , 2007, 76, .	2.5	22

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55	Quantum algorithm for obtaining the energy spectrum of a physical system. Physical Review A, 2012, 85, .	2.5	20
56	Measurement theory and interference of spinor Bose-Einstein condensates. Physical Review A, 2002, 65, .	2.5	19
57	Two-qubit gate operations in superconducting circuits with strong coupling and weak anharmonicity. New Journal of Physics, 2012, 14, 073041.	2.9	19
58	Implementing general measurements on linear optical and solid-state qubits. Physical Review A, 2012, 85, .	2.5	19
59	Characterization of control in a superconducting qutrit using randomized benchmarking. Physical Review Research, 2021, 3, .	3.6	19
60	Information about the state of a charge qubit gained by a weakly coupled quantum point contact. Physica Scripta, 2009, T137, 014005.	2.5	18
61	Selective darkening of degenerate transitions for implementing quantum controlled-NOT gates. New Journal of Physics, 2012, 14, 073038.	2.9	18
62	Attempt to find the hidden symmetry in the asymmetric quantum Rabi model. Physical Review A, 2020, 101, .	2.5	18
63	Superfluid vs Ferromagnetic Behavior in a Bose Gas of Spin-1/2 Atoms. Journal of Low Temperature Physics, 2005, 140, 51-65.	1.4	17
64	Quantum information processing using frequency control of impurity spins in diamond. Physical Review B, 2007, 76, .	3.2	17
65	Bell's experiment with intra- and inter-pair entanglement: Single-particle mode entanglement as a case study. Physical Review A, 2009, 80, .	2.5	16
66	Decoherence dynamics of a qubit coupled to a quantum two-level system. Physica C: Superconductivity and Its Applications, 2006, 444, 45-52.	1.2	14
67	Fast quantum communication in linear networks. Europhysics Letters, 2016, 114, 40007.	2.0	13
68	Observation of Structural Phase Transitions and PbI <sub>2</sub> Formation During the Degradation of Triple-Cation Double-Halide Perovskites. ACS Applied Energy Materials, 2020, 3, 6302-6309.	5.1	11
69	Superradiance phase transition in the presence of parameter fluctuations. Physical Review A, 2017, 95, .	2.5	9
70	Speed limits for two-qubit gates with weakly anharmonic qubits. Physical Review A, 2022, 105, .	2.5	9
71	Interference between a large number of independent Bose-Einstein condensates. Physical Review A, 2005, 71, .	2.5	8
72	Simulating systems of itinerant spin-carrying particles using arrays of superconducting qubits and resonators. New Journal of Physics, 2014, 16, 113006.	2.9	8

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73	Landau-Zener-Stueckelberg interferometry with driving fields in the quantum regime. Journal of Physics A: Mathematical and Theoretical, 2017, 50, 134002.	2.1	7
74	Domain boundaries in Luttinger-Tisza ordered dipole lattices. Journal of Applied Physics, 2019, 125, .	2.5	6
75	Fast amplification and rephasing of entangled cat states in a qubit-oscillator system. Physical Review A, 2019, 99, .	2.5	6
76	Dynamics of interacting qubits in a strong alternating electromagnetic field. Physics of the Solid State, 2010, 52, 2281-2286.	0.6	5
77	Spectrum of the Dicke model in a superconducting qubit-oscillator system. Physical Review A, 2019, 99, .	2.5	5
78	Order in the ground state of a simple cubic dipole lattice in an external field. International Journal of Quantum Chemistry, 2020, 120, e26053.	2.0	5
79	Nonclassicality of open circuit QED systems in the deep-strong coupling regime. New Journal of Physics, 2021, 23, 103009.	2.9	5
80	Quantum state preparation protocol for encoding classical data into the amplitudes of a quantum information processing register's wave function. Physical Review Research, 2022, 4, .	3.6	5
81	Hamiltonian of a flux qubit-LC oscillator circuit in the deep-strong-coupling regime. Scientific Reports, 2022, 12, 6764.	3.3	4
82	Unusual Bimodal Photovoltaic Performance of Perovskite Solar Cells at Real-World Operating Temperatures. Journal of Physical Chemistry C, 2020, 124, 9118-9125.	3.1	2
83	Effective hopping strength between supercells in a disordered tight-binding model. Computational Materials Science, 2018, 155, 534-540.	3.0	0
84	A GRASP approach for Symbolic Regression. , 2019, , .		0
85	Intermediate-scale Simulations of Lead-halide Perovskites Using Tight-binding and Spin Models. , 0, , .		0
86	Solution-processed Perovskite-colloidal Quantum Dot Tandem Solar Cells for Photon Collection Beyond 1000 nm. , 0, , .		0
87	Intermediate-scale Simulations of Lead-halide Perovskites Using Tight-binding and Spin Models. , 0, , .		0