Alireza Marandi

List of Publications by Year
in descending order

96 papers	3,835 citations	218677 26 h-index	189892 50 g-index
96 all docs	96 docs citations	96 times ranked	2407 citing authors

#	Article	IF	Citations
1	A coherent Ising machine for 2000-node optimization problems. Science, 2016, 354, 603-606.	12.6	469
2	A fully programmable 100-spin coherent Ising machine with all-to-all connections. Science, 2016, 354, 614-617.	12.6	427
3	Ultrahigh-efficiency wavelength conversion in nanophotonic periodically poled lithium niobate waveguides. Optica, 2018, 5, 1438.	9.3	392
4	Network of time-multiplexed optical parametric oscillators as a coherent Ising machine. Nature Photonics, 2014, 8, 937-942.	31.4	339
5	Octave-spanning ultrafast OPO with 26-61Âµm instantaneous bandwidth pumped by femtosecond Tm-fiber laser. Optics Express, 2012, 20, 7046.	3.4	270
6	Coherent Ising machine based on degenerate optical parametric oscillators. Physical Review A, 2013, 88, .	2.5	226
7	Ultrabroadband nonlinear optics in nanophotonic periodically poled lithium niobate waveguides. Optica, 2020, 7, 40.	9.3	172
8	Experimental investigation of performance differences between coherent Ising machines and a quantum annealer. Science Advances, 2019, 5, eaau0823.	10.3	169
9	Broadband degenerate OPO for mid-infrared frequency comb generation. Optics Express, 2011, 19, 6296.	3.4	167
10	Mid-infrared supercontinuum generation in tapered chalcogenide fiber for producing octave-spanning frequency comb around 3 Î¼m. Optics Express, 2012, 20, 24218.	3.4	110
11	Coherence properties of a broadband femtosecond mid-IR optical parametric oscillator operating at degeneracy. Optics Express, 2012, 20, 7255.	3.4	91
12	Design of a Single-Feed Dual-Band Dual-Polarized Printed Microstrip Antenna Using a Boolean Particle Swarm Optimization. IEEE Transactions on Antennas and Propagation, 2008, 56, 1845-1852.	5.1	79
13	Octave-spanning supercontinuum generation in in situ tapered As_2S_3 fiber pumped by a thulium-doped fiber laser. Optics Letters, 2013, 38, 2865.	3.3	79
14	All-optical quantum random bit generation from intrinsically binary phase of parametric oscillators. Optics Express, 2012, 20, 19322.	3.4	71
15	A 16-bit Coherent Ising Machine for One-Dimensional Ring and Cubic Graph Problems. Scientific Reports, 2016, 6, 34089.	3.3	60
16	Topological dissipation in a time-multiplexed photonic resonator network. Nature Physics, 2022, 18, 442-449.	16.7	58
17	Temporal Simultons in Optical Parametric Oscillators. Physical Review Letters, 2018, 120, 053904.	7.8	51
18	Intense optical parametric amplification in dispersion-engineered nanophotonic lithium niobate waveguides. Optica, 2022, 9, 303.	9.3	49

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19	Intracavity trace molecular detection with a broadband mid-IR frequency comb source. Journal of the Optical Society of America B: Optical Physics, 2013, 30, 631.	2.1	44
20	Quantum correlation in degenerate optical parametric oscillators with mutual injections. Physical Review A, 2015, 92, .	2.5	41
21	Cascaded half-harmonic generation of femtosecond frequency combs in the mid-infrared. Optica, 2016, 3, 324.	9.3	32
22	Realizing spin Hamiltonians in nanoscale active photonic lattices. Nature Materials, 2020, 19, 725-731.	27.5	32
23	Reduced models and design principles for half-harmonic generation in synchronously pumped optical parametric oscillators. Physical Review A, 2016, 94, .	2.5	30
24	Spectral phase transitions in optical parametric oscillators. Nature Communications, 2021, 12, 835.	12.8	29
25	Efficient half-harmonic generation of three-optical-cycle mid-IR frequency comb around 4 Âµm using OP-GaP. Optics Express, 2018, 26, 9963.	3.4	28
26	Nondissipative non-Hermitian dynamics and exceptional points in coupled optical parametric oscillators. Optica, 2021, 8, 415.	9.3	27
27	Sub-50 fs pulses around 2070 nm from a synchronously-pumped, degenerate OPO. Optics Express, 2012, 20, 27589.	3.4	26
28	Femtosecond optical parametric oscillator frequency combs. Journal of Optics (United Kingdom), 2015, 17, 094010.	2.2	25
29	Quasi-static optical parametric amplification. Optica, 2022, 9, 273.	9.3	25
30	Design of a continuous-wave tunable terahertz source using waveguide-phase-matched GaAs. Optics Express, 2008, 16, 10427.	3.4	24
31	All-optical ultrafast ReLU function for energy-efficient nanophotonic deep learning. Nanophotonics, 2023, 12, 847-855.	6.0	21
32	Dispersive versus Dissipative Coupling for Frequency Synchronization in Lasers. Physical Review Applied, 2019, 12, .	3.8	20
33	Mie Resonance Engineering in Meta-Shell Supraparticles for Nanoscale Nonlinear Optics. ACS Nano, 2020, 14, 17203-17212.	14.6	19
34	Temporal walk-off induced dissipative quadratic solitons. Nature Photonics, 2022, 16, 162-168.	31.4	14
35	Fractional-length sync-pumped degenerate optical parametric oscillator for 500-MHz 3-Î¼m mid-infrared frequency comb generation. Optics Letters, 2014, 39, 900.	3.3	12
36	Wavelength-scale optical parametric oscillators. Optica, 2021, 8, 262.	9.3	12

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37	Fiber-feedback optical parametric oscillator for half-harmonic generation of sub-100-fs frequency combs around 2â€‰â€‰Î¼m. Optics Letters, 2015, 40, 4368.	3.3	11
38	Multi-watt, broadband second-harmonic-generation in MgO:PPSLT waveguides fabricated with femtosecond laser micromachining. Optics Express, 2019, 27, 21102.	3.4	10
39	Fiveâ€cycle pulses near Î» = 3 Î¼m produced in a subharmonic optical parametric oscillator via fine dispersion management. Laser and Photonics Reviews, 2013, 7, L93.	8.7	9
40	Topological optical parametric oscillation. Nanophotonics, 2022, 11, 1611-1618.	6.0	8
41	Photonics for computing and computing for photonics. Nanophotonics, 2020, 9, 4053-4054.	6.0	6
42	Proposal for Compact Optical Filters Using Large Index Step Binary Supergratings. IEEE Photonics Technology Letters, 2008, 20, 676-678.	2.5	5
43	^87Rb-stabilized 375-MHz Yb:fiber femtosecond frequency comb. Optics Express, 2014, 22, 10494.	3.4	5
44	100 dB/cm broadband optical parametric amplification in dispersion engineered nanophotonic lithium niobate waveguides. , 2021, , .		5
45	Nonlinear quantum behavior of ultrashort-pulse optical parametric oscillators. Physical Review A, 2022, 105, .	2.5	5
46	Balancing interferometers with slow-light elements. Optics Letters, 2011, 36, 933.	3.3	4
47	In-situ Tapering of Chalcogenide Fiber for Mid-infrared Supercontinuum Generation. Journal of Visualized Experiments, 2013, , e50518.	0.3	3
48	Second-harmonic generation in nanophotonic PPLN waveguides with ultrahigh efficiencies. , 2018, , .		3
49	Femtojoule, Femtosecond, All-Optical Switching in Integrated Lithium Niobate Photonics. , 2021, , .		3
50	Nanolaser-based emulators of spin Hamiltonians. Nanophotonics, 2020, 9, 4193-4198.	6.0	3
51	Design of a Highly Focused Photonic Crystal Lens Using Boolean Particle Swarm Optimization. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	2
52	Quantum vs. Optical Annealing: Benchmarking the OPO Ising Machine and D-Wave. , 2018, , .		2
53	Photonic Topological Dissipation in Time-Multiplexed Resonator Networks. , 2021, , .		2
54	Guided-wave half-harmonic generation of frequency combs with â^¼75-fold spectral broadening. , 2015, , .		2

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55	Broadband Intracavity Molecular Spectroscopy with a Degenerate Mid-IR OPO. , 2012, , .		1
56	Broadband mid-IR subharmonic OPOs for molecular spectroscopy. Proceedings of SPIE, 2012, , .	0.8	1
57	A Degenerate Optical Parametric Oscillator Network for Coherent Computation. Lecture Notes in Physics, 2016, , 219-249.	0.7	1
58	Combinatorial optimization using networks of optical parametric oscillators. , 2017, , .		1
59	Mid-Infrared Supercontinuum Generation from 2.4 Âµm to 4.6 Âµm in Tapered Chalcogenide Fiber. , 2012, , .		1
60	2.09-Âµm degenerate femtosecond OPO with over 60% conversion efficiency and 0.6-W output. , 2014, , .		1
61	Quasi-static Optical Parametric Amplification. , 2021, , .		1
62	Compact Binary Super-Gratings Using a Large Refractive Index Step. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	0
63	An FDTD-based tool for simulation of nonlinear interactions of guided waves. , 2008, , .		0
64	Coherence properties of a mid-infrared frequency comb produced by a degenerate optical parametric oscillator. , 2011, , .		0
65	Octave Wide Mid-Infrared Frequency Comb Rigorously Derived from commercial Near-IR Mode-locked Laser. , 2011, , .		0
66	Mid-IR spectral comb with broad instantaneous bandwidth using subharmonic OPO. , 2011, , .		0
67	Divide-and-conquer approach to the generation of mid-infrared frequency combs. , 2011, , .		0
68	GaAs-based subharmonic OPO with an instantaneous bandwidth of 3.1â€“5.8 Âµm pumped by a femtosecond Tm-fiber laser. , 2012, , .		0
69	Intracavity molecular spectroscopy in the mid-IR using ultra-broadband optical parametric oscillator. Proceedings of SPIE, 2013, , .	0.8	0
70	Network of femtosecond degenerate OPOs for solving NP-Hard Ising problems. , 2014, , .		0
71	SOLVING THE ISING PROBLEM USING DEGENERATE OPTICAL PARAMETRIC OSCILLATORS. , 2014, , .		0
72	Sub-100 fs Fiber Feedback Synchronously Pumped Degenerate Optical Parametric Oscillator. , 2015, , .		0

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73	Efficient cascaded half-harmonic generation of femtosecond frequency combs centered at 2.09 μm and 4.18 μm from a mode-locked Yb:Fiber laser. , 2015, , .		0
74	0.5-W Few-Cycle Frequency Comb at 4 Î¼m from an Efficient Simulton-based Optical Parametric Oscillator. , 2021, , .		0
75	Mid-Infrared Cross-Comb Spectroscopy using Sum-Frequency Sampling. , 2021, , .		0
76	Efficient Ultra-broadband Optical Parametric Generation with Picojoule Pulse Energies. , 2021, , .		0
77	Walk-off Induced Dissipative Quadratic Solitons in Degenerate Optical Parametric Oscillators. , 2021, , .		0
78	New source of ultra-broadband mid-IR frequency combs for spectroscopic applications. , 2010, , .		0
79	Twin Degenerate OPO for Quantum Random Bit Generation. , 2011, , .		0
80	Quantum Random Bit Generation Using Degenerate Optical Parametric Oscillator. , 2011, , .		0
81	Nearly 3-6Âµm Spectral Comb Derived from Tm Mode-locked Laser using GaAs-based Degenerate OPO. , 2012, , .		0
82	500-MHz Mid-IR Frequency Comb Source Based on a Compact Subharmonic OPO. , 2013, , .		0
83	Quarter-harmonic generation of femtosecond pulses at 4.18 Âµm from a mode-locked Yb:fiber laser. , 2015, , .		0
84	Reduced Models for Pulse Shaping and Nonlinear Dynamics in Optical Parametric Oscillators. , 2016, , .		0
85	19-nJ Five-Cycle Pulses from a 2-Î¼m Degenerate Optical Parametric Oscillator. , 2016, , .		0
86	Simulton Formation in Mid-Infrared Femtosecond Optical Parametric Oscillators. , 2017, , .		0
87	Femtosecond Temporal Simulton Formation in Optical Parametric Oscillators. , 2017, , .		0
88	Half-Harmonic Generation: Enabling Photonic Solutions for Molecular Sensing and Non-Classical Computing. , 2019, , .		0
89	Observation of second-order spectral phase transition in optical parametric oscillator. , 2020, , .		0
90	Cross-Comb Spectroscopy using Sum-Frequency Sampling in the Mid-IR. , 2021, , .		0

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91	Optical Parametric Oscillation in Dielectric Multipolar Nanostructures. , 2020, , .		0
92	Topological Behaviors in Networks of Time-Multiplexed Optical Resonators. , 2020, , .		0
93	Ultrabroadband Nonlinear Optics in Nanophotonic Lithium Niobate Waveguides. , 2020, , .		0
94	Quadratic Soliton Frequency Comb at 4 Ù¢m from an OP-GaP-based Optical Parametric Oscillator. , 2020, , .		0
95	Integrated Nonlinear Photonics: New Opportunities in the Nanometer and Femtosecond Scales. , 2021, , .		0
96	Dissipative Quadratic Solitons: Few-Cycle Frequency Combs in the Mid-IR. , 2022, , .		0