Ebrahim Karimi

List of Publications by Year
in descending order

116 papers	7,969 citations	76294 40 h-index	48277 88 g-index
122 all docs	122 docs citations	122 times ranked	5173 citing authors

#	Article	IF	Citations
1	Theoretical and practical aspects of the design and production of synthetic holograms for transmission electron microscopy. Journal of Applied Physics, 2022, 131, .	1.1	5
2	SchrÃ¶dinger equation in a general curved spacetime geometry. International Journal of Modern Physics D, 2022, 31, .	0.9	5
3	High-speed imaging of spatiotemporal correlations in Hong-Ou-Mandel interference. Optics Express, 2022, 30, 19456.	1.7	10
4	Two-photon interference: the Hongâ€“Ouâ€“Mandel effect. Reports on Progress in Physics, 2021, 84, 012402.	8.1	83
5	Quantum cryptography with structured photons. , 2021, , 139-176.		1
6	Achieving Ultimate Noise Tolerance in Quantum Communication. Physical Review Applied, 2021, 15, .	1.5	13
7	Majorana bosonic quasiparticles from twisted photons in free space. Physical Review A, 2021, 103, .	1.0	9
8	Experimental tests of multiplicative Bell inequalities and the fundamental role of local correlations. Physical Review Research, 2021, 3, .	1.3	2
9	Experimental Demonstration of an Electrostatic Orbital Angular Momentum Sorter for Electron Beams. Physical Review Letters, 2021, 126, 094802.	2.9	39
10	A sorter for electrons based on magnetic elements. Ultramicroscopy, 2021, 231, 113287.	0.8	1
11	Full-mode characterization of correlated photon pairs generated in spontaneous downconversion. Optics Letters, 2021, 46, 2388.	1.7	5
12	Towards communication in a curved spacetime geometry. Communications Physics, 2021, 4, .	2.0	17
13	Polychromatic electric field knots. Physical Review Research, 2021, 3, .	1.3	12
14	Design of electrostatic phase elements for sorting the orbital angular momentum of electrons. Ultramicroscopy, 2020, 208, 112861.	0.8	20
15	Optical framed knots as information carriers. Nature Communications, 2020, 11, 5119.	5.8	34
16	Dynamical diffraction effects in STEM orbital angular momentum resolved electron energy-loss magnetic chiral dichroism. Physical Review B, 2020, 102, .	1.1	3
17	Full-field mode sorter using two optimized phase transformations for high-dimensional quantum cryptography. Journal of Optics (United Kingdom), 2020, 22, 024001.	1.0	17
18	Entanglement: quantum or classical?. Reports on Progress in Physics, 2020, 83, 064001.	8.1	32

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19	Investigation of underwater quantum channels in a 30 meter flume tank using structured photons. New Journal of Physics, 2020, 22, 093074.	1.2	31
20	Generation of electron vortices using nonexact electric fields. Physical Review Research, 2020, 2, .	1.3	18
21	Nonlocal quantum erasure of phase objects. Applied Physics Letters, 2019, 115, 051102.	1.5	5
22	Geometric phase from Aharonovâ€“Bohm to Pancharatnamâ€“Berry andÂbeyond. Nature Reviews Physics, 2019, 1, 437-449.	11.9	167
23	Multi-twist polarization ribbon topologies in highly-confined optical fields. New Journal of Physics, 2019, 21, 053020.	1.2	41
24	Orbital Angular Momentum and Energy Loss Characterization of Plasmonic Excitations in Metallic Nanostructures in TEM. ACS Photonics, 2019, 6, 620-627.	3.2	16
25	Structured quantum projectiles. Physical Review A, 2019, 99, .	1.0	2
26	Orbital angular momentum resolved electron magnetic chiral dichroism. Physical Review B, 2019, 100, .	1.1	8
27	Compressed sensing of twisted photons. Optics Express, 2019, 27, 17426.	1.7	4
28	Experimental realization of wave-packet dynamics in cyclic quantum walks. Optica, 2019, 6, 174.	4.8	11
29	â€˜Twistedâ€™ electrons. Contemporary Physics, 2018, 59, 126-144.	0.8	40
30	Reconstructing the topology of optical polarization knots. Nature Physics, 2018, 14, 1079-1082.	6.5	126
31	Round-robin differential-phase-shift quantum key distribution with twisted photons. Physical Review A, 2018, 98, .	1.0	26
32	Twisting neutrons may reveal their internal structure. Nature Physics, 2018, 14, 1-2.	6.5	30
33	Quantum cryptography with structured photons through a vortex fiber. Optics Letters, 2018, 43, 4108.	1.7	42
34	Holographically Probing Longitudinal Magnetic Fields with Electron Vortex Beams. Microscopy and Microanalysis, 2018, 24, 938-939.	0.2	1
35	High-dimensional quantum cloning and applications to quantum hacking. Science Advances, 2017, 3, e1601915.	4.7	82
36	Controlling the orbital angular momentum of high harmonic vortices. Nature Communications, 2017, 8, 14970.	5.8	124

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37	Revealing optical vortices with a small number of photons. Laser and Photonics Reviews, 2017, 11, 1600163.	4.4	6
38	Measuring the orbital angular momentum spectrum of an electron beam. Nature Communications, 2017, 8, 15536.	5.8	71
39	A New Twist on Relativistic Electron Vortices. Physics Magazine, 2017, 10, .	0.1	1
40	Observation of nanoscale magnetic fields using twisted electron beams. Nature Communications, 2017, 8, 689.	5.8	47
41	Experimental ladder proof of Hardy's nonlocality for high-dimensional quantum systems. Physical Review A, 2017, 96, .	1.0	10
42	General lossless spatial polarization transformations. Journal of Optics (United Kingdom), 2017, 19, 094003.	1.0	19
43	Roadmap on structured light. Journal of Optics (United Kingdom), 2017, 19, 013001.	1.0	888
44	Phase retrieval of an electron vortex beam using diffraction holography. Applied Physics Letters, 2017, 111, .	1.5	8
45	Generalized optical angular momentum sorter and its application to high-dimensional quantum cryptography. Optics Express, 2017, 25, 19832.	1.7	40
46	Observation of subluminal twisted light in vacuum: reply. Optica, 2017, 4, 207.	4.8	2
47	High-dimensional intracity quantum cryptography with structured photons. Optica, 2017, 4, 1006.	4.8	330
48	Super-critical phasematching for photon pair generation in structured light modes. Optics Express, 2016, 24, 24495.	1.7	3
49	Quantum probabilities from quantum entanglement: experimentally unpacking the Born rule. New Journal of Physics, 2016, 18, 053013.	1.2	10
50	Polarization Shaping for Control of Nonlinear Propagation. Physical Review Letters, 2016, 117, 233903.	2.9	87
51	Hong-Ou-Mandel interference of entangled Hermite-Gauss modes. Physical Review A, 2016, 94, .	1.0	25
52	Nondestructive Measurement of Orbital Angular Momentum for an Electron Beam. Physical Review Letters, 2016, 117, 154801.	2.9	24
53	Tighter spots of light with superposed orbital-angular-momentum beams. Physical Review A, 2016, 94, .	1.0	18
54	Arbitrary optical wavefront shaping via spin-to-orbit coupling. Journal of Optics (United Kingdom), 2016, 18, 124002.	1.0	44

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55	Generation and application of bessel beams in electron microscopy. Ultramicroscopy, 2016, 166, 48-60.	0.8	39
56	Observation of subluminal twisted light in vacuum. Optica, 2016, 3, 351.	4.8	55
57	High-dimensional quantum cloning of orbital angular momentum qudits. , 2016, , .		2
58	Structured Electron Beam Illumination: A New Control Over the Electron Probe Weird Probes and New Experiments. Microscopy and Microanalysis, 2015, 21, 25-26.	0.2	1
59	Recovery of quantum coherence by spatial propagation. , 2015, , .		0
60	Real-time imaging of spin-to-orbital angular momentum hybrid remote state preparation. Physical Review A, 2015, 92, .	1.0	37
61	Observation of quantum recoherence of photons by spatial propagation. Scientific Reports, 2015, 5, 15330.	1.6	9
62	Holographic Generation of Highly Twisted Electron Beams. Microscopy and Microanalysis, 2015, 21, 675-676.	0.2	0
63	Electron holograms encoding amplitude and phase for the generation of arbitrary wavefunctions. Microscopy and Microanalysis, 2015, 21, 503-504.	0.2	5
64	Holograms for the Generation of Vortex States with L=500h Fabricated by Electron Beam Lithography. Microscopy and Microanalysis, 2015, 21, 667-668.	0.2	5
65	Spin-Multislice Applied to the Electron Spin Interaction with Materials. Microscopy and Microanalysis, 2015, 21, 1961-1962.	0.2	0
66	Classical entanglement?. Science, 2015, 350, 1172-1173.	6.0	90
67	Experimental observation of subluminal light carrying orbital angular momentum in vacuum. , 2015, , .		2
68	Quantifying the impact of proximity error correction on plasmonic metasurfaces [Invited]. Optical Materials Express, 2015, 5, 2798.	1.6	14
69	Observation of optical polarization MÃ¶bius strips. Science, 2015, 347, 964-966.	6.0	322
70	Holographic Generation of Highly Twisted Electron Beams. Physical Review Letters, 2015, 114, 034801.	2.9	78
71	Measuring the self-healing of the spatially inhomogeneous states of polarization of vector Bessel beams. Journal of Optics (United Kingdom), 2015, 17, 035617.	1.0	64
72	Structured quantum waves. Nature Physics, 2015, 11, 629-634.	6.5	117

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73	4 Ã— 20â€‰â€‰Gbit/s mode division multiplexing over free space using vector modes and a q-plate mode (de)multiplexer. Optics Letters, 2015, 40, 1980.	1.7	372
74	Quantum walks and wavepacket dynamics on a lattice with twisted photons. Science Advances, 2015, 1, e1500087.	4.7	148
75	Super-critical phase-matching in nonlinear optics. , 2015, , .		0
76	Dynamics of laser-induced radial birefringence in silver-doped glasses. Optics Letters, 2015, 40, 4062.	1.7	0
77	Slowly but surely. Nature Physics, 2015, 11, 15-16.	6.5	4
78	Direct measurement of the quantum density matrix in the basis of azimuthal angle. , 2015, , .		0
79	Limitations to the determination of a Laguerreâ€“Gauss spectrum via projective, phase-flattening measurement. Journal of the Optical Society of America B: Optical Physics, 2014, 31, A20.	0.9	82
80	Incoherent polarized white-light vecctor vortex from a q-plate. Proceedings of SPIE, 2014, , .	0.8	0
81	Achromatic orbital angular momentum generator. New Journal of Physics, 2014, 16, 123006.	1.2	33
82	Optical spin-to-orbital angular momentum conversion in ultra-thin metasurfaces with arbitrary topological charges. Applied Physics Letters, 2014, 105, .	1.5	116
83	Hardy's paradox tested in the spin-orbit Hilbert space of single photons. Physical Review A, 2014, 89, .	1.0	24
84	Tuning vector vortex in spatially coherent supercontinuum multicolored optical beam using q-plate. Proceedings of SPIE, 2014, , .	0.8	1
85	Highly efficient electron vortex beams generated by nanofabricated phase holograms. Applied Physics Letters, 2014, 104, .	1.5	111
86	Exploring the quantum nature of the radial degree of freedom of a photon via Hong-Ou-Mandel interference. Physical Review A, 2014, 89, .	1.0	85
87	Generation of a spin-polarized electron beam by multipole magnetic fields. Ultramicroscopy, 2014, 138, 22-27.	0.8	13
88	Generation of Nondiffracting Electron Bessel Beams. Physical Review X, 2014, 4, .	2.8	71
89	Generating optical orbital angular momentum at visible wavelengths using a plasmonic metasurface. Light: Science and Applications, 2014, 3, e167-e167.	7.7	665
90	Experiments and Potentialities for the use of Bessel Beam in Superresolution STEM. Microscopy and Microanalysis, 2014, 20, 384-385.	0.2	0

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91	Innovative Phase Plates for Beam Shaping. Microscopy and Microanalysis, 2014, 20, 228-229.	0.2	6
92	Test of mutually unbiased bases for six-dimensional photonic quantum systems. Scientific Reports, 2013, 3, 2726.	1.6	35
93	Generation and dynamics of optical beams with polarization singularities. Optics Express, 2013, 21, 8815.	1.7	157
94	Reconstructing the Poynting vector skew angle and wavefront of optical vortex beams via two-channel moirÃ© deflectometery. Optics Letters, 2013, 38, 887.	1.7	37
95	Quantum simulation of a spin polarization device in an electron microscope. New Journal of Physics, 2013, 15, 093026.	1.2	25
96	Integrated multi vector vortex beam generator. Optics Express, 2013, 21, 16130.	1.7	47
97	Violation of Leggett-type inequalities in the spin-orbit degrees of freedom of a single photon. Physical Review A, 2013, 88, .	1.0	9
98	Tunable supercontinuum light vector vortex beam generator using a q-plate. Optics Letters, 2013, 38, 5083.	1.7	88
99	Supercontinuum light vector beam generation with a tunable liquid crystal q-plate. , 2013, , .		1
100	Radial coherent and intelligent states of paraxial wave equation. Optics Letters, 2012, 37, 2484.	1.7	47
101	Time-division multiplexing of the orbital angular momentum of light. Optics Letters, 2012, 37, 127.	1.7	39
102	Polarization pattern of vector vortex beams generated by q-plates with different topological charges. Applied Optics, 2012, 51, C1.	0.9	333
103	Spin-to-Orbital Angular Momentum Conversion and Spin-Polarization Filtering in Electron Beams. Physical Review Letters, 2012, 108, 044801.	2.9	97
104	Laser-induced radial birefringence and spin-to-orbital optical angular momentum conversion in silver-doped glasses. Applied Physics Letters, 2011, 99, .	1.5	7
105	Spin-to-orbital conversion of the angular momentum of light and its classical and quantum applications. Journal of Optics (United Kingdom), 2011, 13, 064001.	1.0	394
106	Efficient generation and control of different-order orbital angular momentum states for communication links. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2011, 28, 61.	0.8	21
107	Spin-orbit hybrid entanglement of photons and quantum contextuality. Physical Review A, 2010, 82, .	1.0	145
108	Polarization-controlled evolution of light transverse modes and associated Pancharatnam geometric phase in orbital angular momentum. Physical Review A, 2010, 81, .	1.0	53

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109	Universal unitary gate for single-photon spin-orbit four-dimensional states. Physical Review A, 2009, 80, .	1.0	21
110	Optimal quantum cloning of orbital angular momentum photon qubits through Hongâ€“Ouâ€“Mandel coalescence. Nature Photonics, 2009, 3, 720-723.	15.6	203
111	Light propagation in a birefringent plate with topological charge. Optics Letters, 2009, 34, 1225.	1.7	71
112	Quantum Information Transfer from Spin to Orbital Angular Momentum of Photons. Physical Review Letters, 2009, 103, 013601.	2.9	323
113	Efficient generation and sorting of orbital angular momentum eigenmodes of light by thermally tuned q-plates. Applied Physics Letters, 2009, 94, .	1.5	213
114	Improved focusing with Hypergeometric-Gaussian type-II optical modes. Optics Express, 2008, 16, 21069.	1.7	38
115	Hypergeometric-Gaussian modes. Optics Letters, 2007, 32, 3053.	1.7	266
116	Quantum process tomography of a high-dimensional quantum communication channel. Quantum - the Open Journal for Quantum Science, 0, 3, 138.	0.0	12