Arno Rauschenbeutel

List of Publications by Year
in descending order

102 papers	8,945 citations	81900 39 h-index	40979 93 g-index
102 all docs	102 docs citations	102 times ranked	5407 citing authors

#	Article	IF	Citations
1	Chiral quantum optics. Nature, 2017, 541, 473-480.	27.8	1,007
2	Optical Interface Created by Laser-Cooled Atoms Trapped in the Evanescent Field Surrounding an Optical Nanofiber. Physical Review Letters, 2010, 104, 203603.	7.8	645
3	Step-by-Step Engineered Multiparticle Entanglement. Science, 2000, 288, 2024-2028.	12.6	610
4	Chiral nanophotonic waveguide interface based on spin-orbit interaction of light. Science, 2014, 346, 67-71.	12.6	596
5	Coherent Operation of a Tunable Quantum Phase Gate in Cavity QED. Physical Review Letters, 1999, 83, 5166-5169.	7.8	462
6	Seeing a single photon without destroying it. Nature, 1999, 400, 239-242.	27.8	380
7	Quantum state-controlled directional spontaneous emission of photons into a nanophotonic waveguide. Nature Communications, 2014, 5, 5713.	12.8	320
8	Ultrahigh-<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Q</mml:mi></mml:math>Tunable Whispering-Gallery-Mode Microresonator. Physical Review Letters, 2009, 103, 053901.	7.8	317
9	Strong Coupling between Single Atoms and Nontransversal Photons. Physical Review Letters, 2013, 110, 213604.	7.8	242
10	Quantum optical circulator controlled by a single chirally coupled atom. Science, 2016, 354, 1577-1580.	12.6	233
11	Controlled entanglement of two field modes in a cavity quantum electrodynamics experiment. Physical Review A, 2001, 64, .	2.5	229
12	Neutral Atom Quantum Register. Physical Review Letters, 2004, 93, 150501.	7.8	224
13	A complementarity experiment with an interferometer at the quantumâ€“classical boundary. Nature, 2001, 411, 166-170.	27.8	179
14	Nanophotonic Optical Isolator Controlled by the Internal State of Cold Atoms. Physical Review X, 2015, 5, .	8.9	174
15	Fiber-Optical Switch Controlled by a Single Atom. Physical Review Letters, 2013, 111, 193601.	7.8	153
16	Tunable whispering-gallery-mode resonators for cavity quantum electrodynamics. Physical Review A, 2005, 72, .	2.5	149
17	Dynamical polarizability of atoms in arbitrary light fields: general theory and application to cesium. European Physical Journal D, 2013, 67, 1.	1.3	142
18	Cold-Atom Physics Using Ultrathin Optical Fibers: Light-Induced Dipole Forces and Surface Interactions. Physical Review Letters, 2007, 99, 163602.	7.8	141

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19	Analysis of dephasing mechanisms in a standing-wave dipole trap. Physical Review A, 2005, 72, .	2.5	138
20	Ultra-sensitive surface absorption spectroscopy using sub-wavelength diameter optical fibers. Optics Express, 2007, 15, 11952.	3.4	134
21	Nonlinear Ï€ phase shift for single fibre-guided photons interacting with a single resonator-enhanced atom. Nature Photonics, 2014, 8, 965-970.	31.4	116
22	All-optical signal processing at ultra-low powers in bottle microresonators using the Kerr effect. Optics Express, 2010, 18, 17764.	3.4	113
23	Coherence Properties and Quantum State Transportation in an Optical Conveyor Belt. Physical Review Letters, 2003, 91, 213002.	7.8	111
24	An atom-sorting machine. Nature, 2006, 442, 151-151.	27.8	111
25	Tapered fiber coupling of single photons emitted by a deterministically positioned single nitrogen vacancy center. Applied Physics Letters, 2014, 104, 031101.	3.3	105
26	Storage of fiber-guided light in a nanofiber-trapped ensemble of cold atoms. Optica, 2015, 2, 353.	9.3	97
27	Measurement of a negative value for the Wigner function of radiation. Physical Review A, 2000, 62, .	2.5	94
28	Blue-detuned evanescent field surface traps for neutral atoms based on mode interference in ultrathin optical fibres. New Journal of Physics, 2008, 10, 113008.	2.9	70
29	Coherence Properties of Nanofiber-Trapped Cesium Atoms. Physical Review Letters, 2013, 110, 243603.	7.8	68
30	Correlating photons using the collective nonlinear response of atoms weakly coupled to an optical mode. Nature Photonics, 2020, 14, 719-722.	31.4	64
31	Controlled insertion and retrieval of atoms coupled to a high-finesse optical resonator. New Journal of Physics, 2008, 10, 073023.	2.9	59
32	Dispersive Optical Interface Based on Nanofiber-Trapped Atoms. Physical Review Letters, 2011, 107, 243601.	7.8	56
33	Nanofiber Fabryâ€"Perot microresonator for nonlinear optics and cavity quantum electrodynamics. Optics Letters, 2012, 37, 1949.	3.3	56
34	Anisotropy in scattering of light from an atom into the guided modes of a nanofiber. Physical Review A, 2014, 90, .	2.5	53
35	Ultra-sensitive fluorescence spectroscopy of isolated surface-adsorbed molecules using an optical nanofiber. Optics Express, 2009, 17, 21704.	3.4	49
36	Wavelength-scale errors in optical localization due to spinâ€"orbit coupling of light. Nature Physics, 2019, 15, 17-21.	16.7	49

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37	Submicrometer Position Control of Single Trapped Neutral Atoms. Physical Review Letters, 2005, 95, 033002.	7.8	47
38	Design and optimization of broadband tapered optical fibers with a nanofiber waist. Optics Express, 2010, 18, 22677.	3.4	43
39	Chiral quantum optics with V-level atoms and coherent quantum feedback. Physical Review A, 2016, 94, .	2.5	43
40	Optical nanofibers and spectroscopy. Applied Physics B: Lasers and Optics, 2011, 105, 3-15.	2.2	39
41	Thermalization via Heat Radiation of an Individual Object Thinner than the Thermal Wavelength. Physical Review Letters, 2013, 111, 024301.	7.8	39
42	Fabrication of laser deposited high-quality multilayer zone plates for hard X-ray nanofocusing. Applied Surface Science, 2014, 307, 638-644.	6.1	39
43	Nanofiber-Based Optical Trapping of Cold Neutral Atoms. IEEE Journal of Selected Topics in Quantum Electronics, 2012, 18, 1763-1770.	2.9	38
44	Fiber ring resonator with a nanofiber section for chiral cavity quantum electrodynamics and multimode strong coupling. Optics Letters, 2017, 42, 85.	3.3	38
45	Propagation of nanofiber-guided light through an array of atoms. Physical Review A, 2014, 90, .	2.5	34
46	Observation of Ultrastrong Spin-Motion Coupling for Cold Atoms in Optical Microtraps. Physical Review Letters, 2018, 121, 253603.	7.8	33
47	Manipulating Single Atoms. Advances in Atomic, Molecular and Optical Physics, 2006, , 75-104.	2.3	32
48	Nanofiber-based double-helix dipole trap for cold neutral atoms. Optics Communications, 2012, 285, 4705-4708.	2.1	32
49	Nanofiber-mediated chiral radiative coupling between two atoms. Physical Review A, 2017, 95, .	2.5	32
50	Collective Radiative Dynamics of an Ensemble of Cold Atoms Coupled to an Optical Waveguide. Physical Review Letters, 2022, 128, 073601.	7.8	32
51	Continued imaging of the transport of a single neutral atom. Optics Express, 2003, 11, 3498.	3.4	31
52	Standing light fields for cold atoms with intrinsically stable and variable time phases. Optics Communications, 1998, 148, 45-48.	2.1	27
53	Exploiting the local polarization of strongly confined light for sub-micrometer-resolution internal state preparation and manipulation of cold atoms. Physical Review A, 2014, 89, .	2.5	27
54	Coupling a Single Trapped Atom to a Whispering-Gallery-Mode Microresonator. Physical Review Letters, 2021, 126, 233602.	7.8	27

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55	Optical-nanofiber-based interface for single molecules. Physical Review A, 2018, 97, .	2.5	26
56	Observation of Collective Superstrong Coupling of Cold Atoms to a 30-m Long Optical Resonator. Physical Review Letters, 2019, 123, 243602.	7.8	26
57	Inserting Two Atoms into a Single Optical Micropotential. Physical Review Letters, 2006, 97, 243003.	7.8	25
58	All-optical switching and strong coupling using tunable whispering-gallery-mode microresonators. Applied Physics B: Lasers and Optics, 2011, 105, 129-148.	2.2	25
59	Electromagnetically induced transparency for guided light in an atomic array outside an optical nanofiber. Physical Review A, 2015, 91, .	2.5	25
60	Application of electro-optically generated light fields for Raman spectroscopy of trapped cesium atoms. Applied Physics B: Lasers and Optics, 2004, 78, 711-717.	2.2	24
61	Nanofiber-based atom trap created by combining fictitious and real magnetic fields. New Journal of Physics, 2014, 16, 013014.	2.9	24
62	Species-selective microwave cooling of a mixture of rubidium and caesium atoms. New Journal of Physics, 2007, 9, 147-147.	2.9	23
63	Fictitious magnetic-field gradients in optical microtraps as an experimental tool for interrogating and manipulating cold atoms. Physical Review A, 2016, 94, .	2.5	23
64	State-dependent potentials in a nanofiber-based two-color trap for cold atoms. Physical Review A, 2013, 88, .	2.5	20
65	Experimental stressâ€"strain analysis of tapered silica optical fibers with nanofiber waist. Applied Physics Letters, 2014, 104, .	3.3	19
66	Observation of Coherent Coupling between Super- and Subradiant States of an Ensemble of Cold Atoms Collectively Coupled to a Single Propagating Optical Mode. Physical Review Letters, 2022, 128, .	7.8	19
67	Number-triggered loading and collisional redistribution of neutral atoms in a standing wave dipole trap. New Journal of Physics, 2006, 8, 259-259.	2.9	18
68	Negative azimuthal force of nanofiber-guided light on a particle. Physical Review A, 2013, 88, .	2.5	18
69	Optically active mechanical modes of tapered optical fibers. Physical Review A, 2013, 88, .	2.5	18
70	Heating in Nanophotonic Traps for Cold Atoms. Physical Review X, 2019, 9, .	8.9	18
71	Biprism electron interferometry with a single atom tip source. Ultramicroscopy, 2014, 141, 9-15.	1.9	17
72	Backscattering properties of a waveguide-coupled array of atoms in the strongly nonparaxial regime. Physical Review A, 2014, 89, .	2.5	16

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73	Spontaneous emission of a two-level atom with an arbitrarily polarized electric dipole in front of a flat dielectric surface. Physical Review A, 2016, 93, .	2.5	16
74	Atomic spin-controlled non-reciprocal Raman amplification of fibre-guided light. Nature Photonics, 2022, 16, 380-383.	31.4	16
75	Adiabatic quantum state manipulation of single trapped atoms. Physical Review A, 2005, 71, .	2.5	14
76	A nanofiber-based optical conveyor belt for cold atoms. Applied Physics B: Lasers and Optics, 2013, 110, 279-283.	2.2	14
77	Unraveling Two-Photon Entanglement via the Squeezing Spectrum of Light Traveling through Nanofiber-Coupled Atoms. Physical Review Letters, 2021, 127, 123602.	7.8	14
78	Active frequency stabilization of an ultra-high Q whispering-gallery-mode microresonator. Applied Physics B: Lasers and Optics, 2010, 99, 623-627.	2.2	13
79	Bottle microresonator with actively stabilized evanescent coupling. Optics Letters, 2011, 36, 3488.	3.3	13
80	Precision preparation of strings of trapped neutral atoms. New Journal of Physics, 2006, 8, 191-191.	2.9	12
81	Triggering an Optical Transistor with One Photon. Science, 2013, 341, 725-726.	12.6	12
82	Nanofiber-based all-optical switches. Physical Review A, 2016, 93, .	2.5	10
83	Super-extended nanofiber-guided field for coherent interaction with hot atoms. Optica, 2021, 8, 208.	9.3	10
84	Beyond the Tavis-Cummings model: Revisiting cavity QED with ensembles of quantum emitters. Physical Review A, 2022, 105, .	2.5	9
85	Two-dimensional sub-5-nm hard x-ray focusing with MZP. , 2013, , .		5
86	Probing Surface-Bound Atoms with Quantum Nanophotonics. Physical Review Letters, 2021, 126, 163601.	7.8	4
87	Nanofiber-based high-Q microresonator for cryogenic applications. Optics Express, 2020, 28, 3249.	3.4	4
88	Chiral quantum optics goes electric. Nature Photonics, 2022, 16, 261-262.	31.4	4
89	Ultra-high Q whispering-gallery-mode bottle microresonators: properties and applications. Proceedings of SPIE, 2011, , .	0.8	2
90	Two Atoms Announce Their Long-Distance Relationship. Science, 2012, 337, 40-41.	12.6	2

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91	Slow-Light-Enhanced Optical Imaging of Microfiber Radius Variations with Subangstrom Precision. Physical Review Applied, 2020, 14, .	3.8	2
92	Nonlinear pi phase shift for single fiber-guided photons interacting with a resonator-enhanced atom. , 2015, , .		2
93	Nanofiber-Induced Losses Inside an Optical Cavity. Physical Review Applied, 2021, 16, .	3.8	2
94	Quantum dynamics of an atom orbiting around an optical nanofiber. Physical Review A, 2013, 87, .	2.5	1
95	Focus on a single molecule. Nature Photonics, 2016, 10, 438-440.	31.4	1
96	Ein Quantenâ€Abakus aus Licht und Atomen. Manipulation von neutralen Atomen. Physik in Unserer Zeit, 2008, 39, 193-199.	0.0	0
97	Eine Flasche fÃ¼r Licht. Physik in Unserer Zeit, 2009, 40, 276-277.	0.0	0
98	Maximum nonlinearity, minimum light. Nature Photonics, 2014, 8, 972-972.	31.4	0
99	Chiral quantum optics. , 2017, , .		0
100	Systematic Wavelength-Scale Errors in the Localization of Nanoscale Emitters due to Spin-Orbit Coupling of Light. , 2018, , .		0
101	Multimode Strong Coupling of Laser-Cooled Atoms to a Nanofiber-Based Ring Resonator. , 2018, , .		0
102	Cavity Quantum Electrodynamics and Chiral Quantum Optics. , 2020, , 159-201.		0