Jakob Reichel

List of Publications by Year
in descending order

114 papers	7,760 citations	61857 43 h-index	51492 86 g-index
129 all docs	129 docs citations	129 times ranked	4896 citing authors

#	Article	IF	Citations
1	Bloch Oscillations of Atoms in an Optical Potential. Physical Review Letters, 1996, 76, 4508-4511.	2.9	805
2	Strong atomâ€“field coupling for Boseâ€“Einstein condensates in an optical cavity on a chip. Nature, 2007, 450, 272-276.	13.7	605
3	Boseâ€“Einstein condensation on a microelectronic chip. Nature, 2001, 413, 498-501.	13.7	556
4	Atomic Micromanipulation with Magnetic Surface Traps. Physical Review Letters, 1999, 83, 3398-3401.	2.9	337
5	A fiber Fabryâ€“Perot cavity with high finesse. New Journal of Physics, 2010, 12, 065038.	1.2	327
6	Interferometry with Bose-Einstein Condensates in Microgravity. Physical Review Letters, 2013, 110, 093602.	2.9	296
7	Bose-Einstein Condensation in Microgravity. Science, 2010, 328, 1540-1543.	6.0	246
8	Microchip traps and Boseâ€“Einstein condensation. Applied Physics B: Lasers and Optics, 2002, 74, 469-487.	1.1	230
9	Coherence in Microchip Traps. Physical Review Letters, 2004, 92, 203005.	2.9	212
10	Bose-Einstein Condensate Coupled to a Nanomechanical Resonator on an Atom Chip. Physical Review Letters, 2007, 99, 140403.	2.9	185
11	Coherent manipulation of Boseâ€“Einstein condensates with state-dependent microwave potentials on an atom chip. Nature Physics, 2009, 5, 592-597.	6.5	170
12	Magnetic Conveyor Belt for Transporting and Merging Trapped Atom Clouds. Physical Review Letters, 2001, 86, 608-611.	2.9	169
13	Coupling of a Single Nitrogen-Vacancy Center in Diamond to a Fiber-Based Microcavity. Physical Review Letters, 2013, 110, 243602.	2.9	163
14	Optically Mediated Hybridization between Two Mechanical Modes. Physical Review Letters, 2014, 112, 013602.	2.9	157
15	Spin Self-Rephasing and Very Long Coherence Times in a Trapped Atomic Ensemble. Physical Review Letters, 2010, 105, 020401.	2.9	143
16	Entangled States of More Than 40 Atoms in an Optical Fiber Cavity. Science, 2014, 344, 180-183.	6.0	133
17	Fiber-cavity-based optomechanical device. Applied Physics Letters, 2012, 101, .	1.5	122
18	Resonant Coupling of a Bose-Einstein Condensate to a Micromechanical Oscillator. Physical Review Letters, 2010, 104, 143002.	2.9	120

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19	Trapped-atom interferometer in a magnetic microtrap. Physical Review A, 2001, 64, .	1.0	116
20	Laser micro-fabrication of concave, low-roughness features in silica. AIP Advances, 2012, 2, .	0.6	112
21	Microwave potentials and optimal control for robust quantum gates on an atom chip. Physical Review A, 2006, 74, .	1.0	108
22	Cavity-Based Single Atom Preparation and High-Fidelity Hyperfine State Readout. Physical Review Letters, 2010, 104, 203602.	2.9	102
23	Single Ion Coupled to an Optical Fiber Cavity. Physical Review Letters, 2013, 110, 043003.	2.9	99
24	Raman Cooling of Cesium below 3 nK: New Approach Inspired by LÃ©vy Flight Statistics. Physical Review Letters, 1995, 75, 4575-4578.	2.9	95
25	Atom-chip Bose-Einstein condensation in a portable vacuum cell. Physical Review A, 2004, 70, .	1.0	93
26	Measurement of the internal state of a single atom without energy exchange. Nature, 2011, 475, 210-213.	13.7	93
27	Deterministic generation of multiparticle entanglement by quantum Zeno dynamics. Science, 2015, 349, 1317-1321.	6.0	93
28	Quantum information processing in optical lattices and magnetic microtraps. Fortschritte Der Physik, 2006, 54, 702-718.	1.5	89
29	Applications of integrated magnetic microtraps. Applied Physics B: Lasers and Optics, 2001, 72, 81-89.	1.1	85
30	Stable fiber-based Fabry-PÃ©rot cavity. Applied Physics Letters, 2006, 89, 111110.	1.5	83
31	Spin squeezing in a bimodal condensate: spatial dynamics and particle losses. European Physical Journal B, 2009, 68, 365-381.	0.6	82
32	Widely Tunable Single-Photon Source from a Carbon Nanotube in the Purcell Regime. Physical Review Letters, 2016, 116, 247402.	2.9	79
33	Enhanced and Reduced Atom Number Fluctuations in a BEC Splitter. Physical Review Letters, 2010, 105, 080403.	2.9	73
34	Integrated fiber-mirror ion trap for strong ion-cavity coupling. Review of Scientific Instruments, 2013, 84, 123104.	0.6	72
35	A scanning cavity microscope. Nature Communications, 2015, 6, 7249.	5.8	69
36	Fluctuating nanomechanical system in a high finesse optical microcavity. Optics Express, 2009, 17, 12813.	1.7	64

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37	Cavity quantum electrodynamics with charge-controlled quantum dots coupled to a fiber Fabryâ€"Perot cavity. New Journal of Physics, 2013, 15, 045002.	1.2	58
38	Cavity-enhanced optical detection of carbon nanotube Brownian motion. Applied Physics Letters, 2013, 102, .	1.5	58
39	Direct Photonic Coupling of a Semiconductor Quantum Dot and a Trapped Ion. Physical Review Letters, 2015, 114, 123001.	2.9	58
40	Transverse-mode coupling and diffraction loss in tunable Fabryâ€"PÃ©rot microcavities. New Journal of Physics, 2015, 17, 053051.	1.2	57
41	Scaling laws of the cavity enhancement for nitrogen-vacancy centers in diamond. Physical Review A, 2013, 88, .	1.0	55
42	Transporting, splitting and merging of atomic ensembles in a chip trap. New Journal of Physics, 2005, 7, 3-3.	1.2	54
43	Narrow-band single photon emission at room temperature based on a single nitrogen-vacancy center coupled to an all-fiber-cavity. Applied Physics Letters, 2014, 105, 073113.	1.5	50
44	Millimeter-long fiber Fabry-Perot cavities. Optics Express, 2016, 24, 9839.	1.7	41
45	Boseâ€"Einstein condensates in microgravity. Applied Physics B: Lasers and Optics, 2006, 84, 663-671.	1.1	40
46	Superfluid Brillouin optomechanics. Nature Physics, 2017, 13, 74-79.	6.5	40
47	Stability of a trapped-atom clock on a chip. Physical Review A, 2015, 92, .	1.0	39
48	Polariton Boxes in a Tunable Fiber Cavity. Physical Review Applied, 2015, 3, .	1.5	39
49	Atom interferometers and optical atomic clocks: New quantum sensors for fundamental physics experiments in space. Nuclear Physics, Section B, Proceedings Supplements, 2007, 166, 159-165.	0.5	38
50	Magnetic microchip traps and singleâ€"atom detection. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2003, 361, 1375-1389.	1.6	37
51	Quantum Optomechanics in a Liquid. Physical Review Letters, 2019, 122, 153601.	2.9	32
52	Subrecoil Raman Cooling of Cesium Atoms. Europhysics Letters, 1994, 28, 477-482.	0.7	31
53	Cavity-induced backaction in Purcell-enhanced photon emission of a single ion in an ultraviolet fiber cavity. Physical Review A, 2017, 95, .	1.0	26
54	Spin Waves and Collisional Frequency Shifts of a Trapped-Atom Clock. Physical Review Letters, 2012, 109, 020407.	2.9	24

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55	Exploiting One-Dimensional Excitonâ€“Phonon Coupling for Tunable and Efficient Single-Photon Generation with a Carbon Nanotube. Nano Letters, 2017, 17, 4184-4188.	4.5	24
56	Using magnetic chip traps to study Tonks-Girardeau quantum gases. European Physical Journal Special Topics, 2004, 116, 265-274.	0.2	22
57	Degenerate Quantum Gases in Microgravity. Microgravity Science and Technology, 2011, 23, 287-292.	0.7	22
58	Dual-wavelength fiber Fabry-Perot cavities with engineered birefringence. Optics Express, 2018, 26, 22249.	1.7	21
59	Mapping the Cavity Optomechanical Interaction with Subwavelength-Sized Ultrasensitive Nanomechanical Force Sensors. Physical Review X, 2021, 11, .	2.8	21
60	An Opto-electric Trap for Cold Atoms. Europhysics Letters, 1995, 32, 555-560.	0.7	19
61	Neutralization of Acceptors and Formation of Agglomerates in Silicon Wafers Due to Intrinsic Point Defects Created by Chemomechanical Polishing and by Quenching. Physica Status Solidi A, 1987, 103, 413-420.	1.7	18
62	Long distance magnetic conveyor for precise positioning of ultracold atoms. European Physical Journal D, 2005, 35, 125-133.	0.6	17
63	Photon Emission and Absorption of a Single Ion Coupled to an Optical-Fiber Cavity. Physical Review Letters, 2014, 113, 263003.	2.9	17
64	Fiber-pigtailed optical tweezer for single-atom trapping and single-photon generation. Applied Physics Letters, 2013, 103, .	1.5	16
65	Optomechanics in superfluid helium coupled to a fiber-based cavity. Journal of Optics (United) Tj ETQq1 1 0.784314 rgBT /Overlock 1	1.0	16
66	Preliminary results of the trapped atom clock on a chip. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2010, 57, 106-110.	1.7	15
67	Symmetric microwave potentials for interferometry with thermal atoms on a chip. Physical Review A, 2015, 91, .	1.0	15
68	Spontaneous spin squeezing in a rubidium BEC. New Journal of Physics, 2018, 20, 073018.	1.2	15
69	Experimental investigation of transparent silicon carbide for atom chips. Applied Physics Letters, 2012, 100, .	1.5	14
70	Low-phase-noise frequency synthesizer for the trapped atom clock on a chip. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2010, 57, 88-93.	1.7	12
71	Compact frequency standard using atoms trapped on a chip. Advances in Space Research, 2011, 47, 247-252.	1.2	11
72	Alkali vapor pressure modulation on the 100Âms scale in a single-cell vacuum system for cold atom experiments. Review of Scientific Instruments, 2014, 85, 083112.	0.6	11

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73	Miniature fluorescence detector for single atom observation on a microchip. Optics Express, 2006, 14, 10976.	1.7	10
74	Microwave-dressed state-selective potentials for atom interferometry. New Journal of Physics, 2015, 17, 083022.	1.2	10
75	Overlapping two standing waves in a microcavity for a multi-atom photon interface. Optics Express, 2020, 28, 15515.	1.7	6
76	Das ideale Quantenlabor: Bose-Einstein-Kondensation. Physik in Unserer Zeit, 2003, 34, 168-176.	0.0	5
77	Atom Chips. Scientific American, 2005, 292, 46-53.	1.0	5
78	Cavity nano-optomechanics: a nanomechanical system in a high finesse optical cavity. Proceedings of SPIE, 2010, , .	0.8	5
79	Mapping optical standing-waves of an open-access Fabryâ€"Perot cavity with a tapered fiber. Review of Scientific Instruments, 2020, 91, 033104.	0.6	5
80	An optical elevator for precise delivery of cold atoms using an acousto-optical deflector. New Journal of Physics, 2022, 24, 043013.	1.2	5
81	ATOMIC QUANTUM SENSORS IN SPACE. International Journal of Modern Physics D, 2007, 16, 2421-2429.	0.9	4
82	Limits of atomic entanglement by cavity feedback: From weak to strong coupling. Europhysics Letters, 2016, 113, 34005.	0.7	4
83	Measuring High-Order Phonon Correlations in an Optomechanical Resonator. Physical Review Letters, 2022, 128, 183601.	2.9	4
84	Preliminary results of the trapped atom clock on a chip. , 2009, , .		2
85	Low phase noise frequency synthesiser for the Trapped Atom Clock on a Chip. , 2009, , .		2
86	RUBIDIUM BOSEâ€"EINSTEIN CONDENSATE UNDER MICROGRAVITY. International Journal of Modern Physics D, 2007, 16, 2447-2454.	0.9	1
87	Developments toward atomic quantum sensors. , 2007, , .		1
88	Improving the lifetime in optical microtraps by using elliptically polarized dipole light. Physical Review A, 2018, 97, .	1.0	1
89	Atomic Looping. , 2002, , 471-475.		1
90	Bundâ€LÃnderâ€Kommission: Mehr Eigenverantwortung fÃ¼r die DFG/FÃllt das Hochschullehrerprivileg?/Grundlagenforschung im All/Juniorprofessoren statt Habilitanden?/RÃ¼stungskontrolle: Technologisch fragwÃ¼rdig, politisch gefÃhrlich/Wissenschaftspublikationen â€žfrisch vom Autorâ€¡/USA: Helle Zukunft fÃ¼r Advanced Light Source/Erleichterter Zugang fÃ¼r israelische Wissenschaftler/Aus fÃ¼r Gammastrahlenâ€• Satelliten/Gegen Dialog zwischen Wissenschaft und Religion/Raumfahrt ohne Nutzen fÃ¼r Kristallzuch	0.1	0

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91	Quantum Information Processing in Optical Lattices and Magnetic Microtraps. , 0, , 121-144.		0
92	Ultracold atoms coupled to micro- and nanomechanical oscillators: Towards hybrid quantum systems. , 2009, , .		0
93	Evidence of a fermionic collisional shift. , 2011, , .		0
94	Magneto-optical trapping and detection of atoms through a transparent atom chip. , 2011, , .		0
95	Experimental Investigation of Transparent Silicon Carbide as a Promising Material for Atom Chips. , 2012, , .		0
96	Optomechanics in a Fiber Cavity. , 2012, , .		0
97	Cavity QED with Fiber Cavities: From Atoms to Quantum Well Excitons. , 2012, , .		0
98	Splitting of trapped thermal atoms for atom-chip based interferometry. , 2013, , .		0
99	Coupling of a single N-V center in diamond to a fiber-based microcavity. , 2013, , .		0
100	Towards an interferometer with thermal atoms trapped on a chip. , 2013, , .		0
101	Atom chips for quantum sensing with cold thermal atoms. , 2013, , .		0
102	Realisation of a photonic link between a trapped ion and a semiconductor quantum dot. , 2014, , .		0
103	Fiber-Based Cavities for Ion-Trap Quantum Networks. , 2015, , .		0
104	An ion-cavity interface for quantum networks. , 2015, , .		0
105	Long high finesse ï¬ber Fabry-Perot resonators. Proceedings of SPIE, 2015, , .	0.8	0
106	Observation of thermal fluctuations in a superfluid optomechanical system. , 2017, , .		0
107	Towards a 1D Cold Atom Array in a Fiber Microcavity for Generation of Multiparticle Entanglement. , 2017, , .		0
108	Towards a quantum-enhanced atomic clock on a chip. , 2018, , .		0

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109	Atomic Qubits Protected from Decoherence by Strong Coupling to a Fiber-Based Optical Cavity. , 2019, , .		0
110	Atom chip Bose-Einstein condensation in a portable vacuum cell. , 2004, , .		0
111	Realisation of a photonic link between a trapped ion and a semiconductor quantum dot. , 2014, , .		0
112	Creating Spin Squeezing in a Compact Atomic Clock. , 2017, , .		0
113	Quantum optomechanics experiments in superfluid helium. , 2019, , .		0
114	Towards a quantum-enhanced trapped-atom clock on a chip. , 2019, , .		0