Christoph Becher

List of Publications by Year
in descending order

173 papers	12,033 citations	38720 50 h-index	25770 108 g-index
177 all docs	177 docs citations	177 times ranked	7497 citing authors

#	Article	IF	Citations
1	A Quantum Dot Single-Photon Turnstile Device. Science, 2000, 290, 2282-2285.	6.0	2,170
2	Scalable multiparticle entanglement of trapped ions. Nature, 2005, 438, 643-646.	13.7	1,027
3	Deterministic quantum teleportation with atoms. Nature, 2004, 429, 734-737.	13.7	853
4	Realization of the Ciracâ€“Zoller controlled-NOT quantum gate. Nature, 2003, 422, 408-411.	13.7	769
5	Implementation of the Deutschâ€“Jozsa algorithm on an ion-trap quantum computer. Nature, 2003, 421, 48-50.	13.7	402
6	Single photon emission from silicon-vacancy colour centres in chemical vapour deposition nano-diamonds on iridium. New Journal of Physics, 2011, 13, 025012.	1.2	389
7	Control and Measurement of Three-Qubit Entangled States. Science, 2004, 304, 1478-1480.	6.0	312
8	Electronic Structure of the Silicon Vacancy Color Center in Diamond. Physical Review Letters, 2014, 112, 036405.	2.9	312
9	Coupling a Single Atomic Quantum Bit to a High Finesse Optical Cavity. Physical Review Letters, 2002, 89, 103001.	2.9	266
10	One- and two-dimensional photonic crystal microcavities in single crystal diamond. Nature Nanotechnology, 2012, 7, 69-74.	15.6	220
11	Visible-to-Telecom Quantum Frequency Conversion of Light from a Single Quantum Emitter. Physical Review Letters, 2012, 109, 147404.	2.9	207
12	Bell States of Atoms with Ultralong Lifetimes and Their Tomographic State Analysis. Physical Review Letters, 2004, 92, 220402.	2.9	194
13	Cavity-quantum electrodynamics using a single InAs quantum dot in a microdisk structure. Applied Physics Letters, 2001, 78, 3932-3934.	1.5	192
14	Coupling of a Single Nitrogen-Vacancy Center in Diamond to a Fiber-Based Microcavity. Physical Review Letters, 2013, 110, 243602.	2.9	163
15	Feedback Cooling of a Single Trapped Ion. Physical Review Letters, 2006, 96, 043003.	2.9	158
16	Optical signatures of silicon-vacancy spins in diamond. Nature Communications, 2014, 5, 3328.	5.8	158
17	Photophysics of single silicon vacancy centers in diamond: implications for single photon emission. Optics Express, 2012, 20, 19956.	1.7	143
18	Laser emission from quantum dots in microdisk structures. Applied Physics Letters, 2000, 77, 184-186.	1.5	139

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19	Low-temperature investigations of single silicon vacancy colour centres in diamond. New Journal of Physics, 2013, 15, 043005.	1.2	139
20	How to realize a universal quantum gate with trapped ions. Applied Physics B: Lasers and Optics, 2003, 77, 789-796.	1.1	131
21	Coherent control of the silicon-vacancy spin in diamond. Nature Communications, 2017, 8, 15579.	5.8	131
22	Deterministic Coupling of a Single Silicon-Vacancy Color Center to a Photonic Crystal Cavity in Diamond. Nano Letters, 2014, 14, 5281-5287.	4.5	129
23	The coherence of qubits based on single CaÂions. Journal of Physics B: Atomic, Molecular and Optical Physics, 2003, 36, 623-636.	0.6	128
24	High-fidelity entanglement between a trapped ion and a telecom photon via quantum frequency conversion. Nature Communications, 2018, 9, 1998.	5.8	128
25	All-Optical Formation of Coherent Dark States of Silicon-Vacancy Spins in Diamond. Physical Review Letters, 2014, 113, 263601.	2.9	121
26	Precision Measurement and Compensation of Optical Stark Shifts for an Ion-Trap Quantum Processor. Physical Review Letters, 2003, 90, 143602.	2.9	117
27	Photon correlation spectroscopy of a single quantum dot. Physical Review B, 2002, 65, .	1.1	116
28	Nonclassical radiation from a single self-assembled InAs quantum dot. Physical Review B, 2001, 63, .	1.1	114
29	Narrowband fluorescent nanodiamonds produced from chemical vapor deposition films. Applied Physics Letters, 2011, 98, .	1.5	104
30	Robust entanglement. Applied Physics B: Lasers and Optics, 2005, 81, 151-153.	1.1	103
31	All-Optical Control of the Silicon-Vacancy Spin in Diamond at Millikelvin Temperatures. Physical Review Letters, 2018, 120, 053603.	2.9	103
32	Evaluation of nitrogen- and silicon-vacancy defect centres as single photon sources in quantum key distribution. New Journal of Physics, 2014, 16, 023021.	1.2	91
33	Ultrafast all-optical coherent control of single silicon vacancy colour centres in diamond. Nature Communications, 2016, 7, 13512.	5.8	91
34	Two-photon interference in the telecom C-band after frequency conversion of photons from remote quantum emitters. Nature Nanotechnology, 2019, 14, 23-26.	15.6	82
35	Experimental and theoretical study of the3dD2â€“level lifetimes ofCa+40. Physical Review A, 2005, 71, .	1.0	81
36	Cavity-Enhanced Single-Photon Source Based on the Silicon-Vacancy Center in Diamond. Physical Review Applied, 2017, 7, .	1.5	78

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37	Efficient frequency downconversion at the single photon level from the red spectral range to the telecommunications C-band. Optics Express, 2011, 19, 12825.	1.7	72
38	Fluorescence and polarization spectroscopy of single silicon vacancy centers in heteroepitaxial nanodiamonds on iridium. Physical Review B, 2011, 84, .	1.1	72
39	Vacuum-Field Level Shifts in a Single Trapped Ion Mediated by a Single Distant Mirror. Physical Review Letters, 2003, 91, 213602.	2.9	69
40	Nanoimplantation and Purcell enhancement of single nitrogen-vacancy centers in photonic crystal cavities in diamond. Applied Physics Letters, 2015, 106, .	1.5	68
41	Long-Distance Distribution of Atom-Photon Entanglement at Telecom Wavelength. Physical Review Letters, 2020, 124, 010510.	2.9	66
42	Spontaneous Emission Lifetime of a Single TrappedCa+Ion in a High Finesse Cavity. Physical Review Letters, 2004, 92, 203002.	2.9	64
43	Highly efficient heralded single-photon source for telecom wavelengths based on a PPLN waveguide. Optics Express, 2016, 24, 23992.	1.7	64
44	Spectroscopic investigations of negatively charged tin-vacancy centres in diamond. New Journal of Physics, 2020, 22, 013048.	1.2	62
45	Entangling single atoms over 33â€‰km telecom fibre. Nature, 2022, 607, 69-73.	13.7	62
46	Forces between a Single Atom and Its Distant Mirror Image. Physical Review Letters, 2004, 92, 223602.	2.9	61
47	Quantum to classical transition in a single-ion laser. Nature Physics, 2010, 6, 350-353.	6.5	55
48	Photonic crystal microcavities with self-assembled InAs quantum dots as active emitters. Applied Physics Letters, 2001, 78, 2279-2281.	1.5	54
49	Strongly inhomogeneous distribution of spectral properties of silicon-vacancy color centers in nanodiamonds. New Journal of Physics, 2018, 20, 115002.	1.2	52
50	Limitations on the indistinguishability of photons from remote solid state sources. New Journal of Physics, 2018, 20, 115003.	1.2	52
51	Design of Photonic Crystal Microcavities in Diamond Films. Optics Express, 2008, 16, 1632.	1.7	50
52	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
53	Coherence Properties and Quantum Control of Silicon Vacancy Color Centers in Diamond. Physica Status Solidi (A) Applications and Materials Science, 2017, 214, 1700586.	0.8	49
54	Experimental realization of an absolute single-photon source based on a single nitrogen vacancy center in a nanodiamond. Optica, 2017, 4, 71.	4.8	47

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55	Extending Quantum Links: Modules for Fiberâ€•and Memoryâ€Based Quantum Repeaters. Advanced Quantum Technologies, 2020, 3, 1900141.	1.8	43
56	A single-photon source based on a single Ca+ion. New Journal of Physics, 2004, 6, 94-94.	1.2	42
57	Raman spectroscopy of a single ion coupled to a high-finesse cavity. Applied Physics B: Lasers and Optics, 2009, 95, 205-212.	1.1	35
58	New insights into nonclassical light emission from defects in multi-layer hexagonal boron nitride. Nanophotonics, 2019, 8, 2041-2048.	2.9	35
59	Photoluminescence excitation and spectral hole burning spectroscopy of silicon vacancy centers in diamond. Physical Review B, 2016, 94, .	1.1	34
60	Electronic transitions of single silicon vacancy centers in the near-infrared spectral region. Physical Review B, 2012, 85, .	1.1	32
61	Modeling of optomechanical coupling in a phoxonic crystal cavity in diamond. Optics Express, 2014, 22, 12410.	1.7	32
62	Coherent Control and Wave Mixing in an Ensemble of Silicon-Vacancy Centers in Diamond. Physical Review Letters, 2019, 122, 063601.	2.9	31
63	Single photon emitters based on Ni/Si related defects in single crystalline diamond. Applied Physics B: Lasers and Optics, 2011, 102, 451-458.	1.1	29
64	Toward wafer-scale diamond nano- and quantum technologies. APL Materials, 2019, 7, .	2.2	29
65	Green-pumped cw singly resonant optical parametric oscillator based on MgO:PPLN with frequency stabilization to an atomic resonance. Applied Physics B: Lasers and Optics, 2010, 98, 729-735.	1.1	28
66	Low-noise quantum frequency down-conversion of indistinguishable photons. Optics Express, 2016, 24, 22250.	1.7	27
67	Spectrally asymmetric mode correlation and intensity noise in pump-noise-suppressed laser diodes. Physical Review A, 1998, 57, 3952-3960.	1.0	26
68	Coherent coupling of a single 40 Ca + ion to a high-finesse optical cavity. Applied Physics B: Lasers and Optics, 2003, 76, 117-124.	1.1	25
69	Telecom-heralded single-photon absorption by a single atom. Physical Review A, 2015, 92, .	1.0	23
70	Low-threshold singly-resonant continuous-wave optical parametric oscillator based on MgO-doped PPLN. Applied Physics B: Lasers and Optics, 2011, 103, 311-319.	1.1	22
71	Low temperature investigations and surface treatments of colloidal narrowband fluorescent nanodiamonds. Journal of Applied Physics, 2013, 113, .	1.1	22
72	Infrared laser threshold magnetometry with a NV doped diamond intracavity etalon. Optics Express, 2019, 27, 1706.	1.7	22

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73	Low-intensity-noise operation of Nd:YVO_4 microchip lasers by pump-noise suppression. Journal of the Optical Society of America B: Optical Physics, 1999, 16, 286.	0.9	19
74	Nonclassical Radiation from a Single Quantum Dot. Physica Status Solidi (B): Basic Research, 2002, 229, 399-405.	0.7	18
75	Quantized AC-Stark shifts and their use for multiparticle entanglement and quantum gates. Europhysics Letters, 2004, 65, 587-593.	0.7	18
76	Ion Trap Quantum Computing with Ca+ Ions. Quantum Information Processing, 2004, 3, 61-73.	1.0	18
77	Site selective growth of heteroepitaxial diamond nanoislands containing single SiV centers. Applied Physics Letters, 2016, 108, .	1.5	18
78	Experimental demonstration of a predictable single photon source with variable photon flux. Metrologia, 2017, 54, 218-223.	0.6	17
79	A quantum dot single-photon source. Physica E: Low-Dimensional Systems and Nanostructures, 2002, 13, 412-417.	1.3	16
80	Reproducible fabrication and characterization of diamond membranes for photonic crystal cavities. Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 3254-3264.	0.8	16
81	Coherence and entanglement preservation of frequency-converted heralded single photons. Optics Express, 2017, 25, 11187.	1.7	16
82	Coherence of a charge stabilised tin-vacancy spin in diamond. Npj Quantum Information, 2022, 8, .	2.8	16
83	Spin measurements of NV centers coupled to a photonic crystal cavity. APL Photonics, 2019, 4, .	3.0	15
84	Quantum Dot Lasers Using High-Q Microdisk Cavities. Physica Status Solidi (B): Basic Research, 2001, 224, 797-801.	0.7	13
85	Intensity noise properties of Nd:YVO 4 microchip lasers pumped with an amplitude squeezed diode laser. Optics Communications, 1998, 147, 366-374.	1.0	12
86	Doppler cooling a single Ca+ ion with a violet extended-cavity diode laser. Applied Physics B: Lasers and Optics, 2003, 76, 805-808.	1.1	12
87	Quantum information processing with trapped Ca + ions. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2003, 361, 1363-1374.	1.6	12
88	Pure single-photon emission from In(Ga)As QDs in a tunable fiber-based external mirror microcavity. Quantum Science and Technology, 2018, 3, 034009.	2.6	10
89	Design of microcavities in diamond-based photonic crystals by Fourier- and real-space analysis of cavity fields. Photonics and Nanostructures - Fundamentals and Applications, 2010, 8, 150-162.	1.0	9
90	A cavity-based optical antenna for color centers in diamond. APL Photonics, 2021, 6, .	3.0	9

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91	Diode-pumped optical parametric oscillators. Quantum and Semiclassical Optics: Journal of the European Optical Society Part B, 1997, 9, 173-189.	1.0	7
92	Highly sensitive on-chip magnetometer with saturable absorbers in two-color microcavities. Physical Review B, 2017, 95, .	1.1	7
93	Fabrication of ridge waveguides in LiNbO<inf>3</inf>. , 2012, , .		6
94	Single-photon frequency conversion in nonlinear crystals. Physical Review A, 2013, 88, .	1.0	6
95	Diamond-based single-photon sources and their application in quantum key distribution. , 2014, , 127-159.		6
96	Single telecom photon heralding by wavelength multiplexing in an optical fiber. Applied Physics B: Lasers and Optics, 2016, 122, 1.	1.1	6
97	Single-photon emission from Ni-related color centers in CVD diamond. Proceedings of SPIE, 2010, , .	0.8	5
98	Stabilized diode laser pumped, idler-resonant cw optical parametric oscillator. Applied Physics B: Lasers and Optics, 2011, 102, 757-764.	1.1	5
99	Cavity-QED using a single InAs quantum dot and a high-Q whispering gallery mode. , 0, , .		4
100	Single trapped ions interacting with low- and high-finesse optical cavities. Fortschritte Der Physik, 2003, 51, 359-368.	1.5	4
101	A Quantum Dot Single Photon Source. , 2001, , 3-14.		4
102	Effect of phonons on the electron spin resonance absorption spectrum. New Journal of Physics, 2020, 22, 073068.	1.2	4
103	Photonen auf Bestellung: MaÃŸgeschneiderte Quantenpunkte dienen als Einzelphotonenquellen. Physik Journal, 2001, 57, 55-61.	0.1	3
104	Course 5 Quantum information processing in ion traps I. Les Houches Summer School Proceedings, 2004, 79, 223-260.	0.2	3
105	Sichere Kommunikation per Quantenrepeater. Physik in Unserer Zeit, 2016, 47, 20-27.	0.0	3
106	Quantum Dot Single Photon Source. , 2003, , 165-170.		3
107	Single photon sources for quantum radiometry: a brief review about the current state-of-the-art. Applied Physics B: Lasers and Optics, 2022, 128, 1.	1.1	3
108	Application of injection-locked high power diode laser arrays as pump source for efficient green or blue Nd:YAB lasers and cw KTP optical parametric oscillators. , 0, , .		2

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109	Quantum computing with trapped ions. , 0, , .		2
110	Lock-in detection of single photons after two-step frequency conversion. Optics Letters, 2012, 37, 4254.	1.7	2
111	QUANTUM COMPUTATION WITH TRAPPED IONS. , 2008, , .		2
112	Narrow-linewidth fast-tunable external-cavity near-infrared diode lasers for trace gas detection. , 1998, , .		1
113	Heralded single photons from a single quantum dot. , 0, , .		1
114	ENTANGLEMENT OF TRAPPED IONS. , 2005, , .		1
115	Teleportation with atoms. AIP Conference Proceedings, 2005, , .	0.3	1
116	Green-pumped CW singly resonant optical parametric oscillator based on MgO:PPLN with frequency stabilization. , 2009, , .		1
117	Towards spectroscopy of a few silicon nanocrystals embedded in silica. Physica E: Low-Dimensional Systems and Nanostructures, 2009, 41, 998-1001.	1.3	1
118	Diamonds from outer space. Nature Nanotechnology, 2014, 9, 16-17.	15.6	1
119	Single photon quantum frequency conversion as tool for quantum networks. , 2018, , .		1
120	Emission from quantum dots in a photonic crystal microcavity. , 0, , .		0
121	Cross-correlation spectroscopy in a single quantum dot. , 0, , .		0
122	Coherent coupling of a single Ca/sup +/ ion to a high finesse optical cavity field. , 2003, , .		0
123	Implementation of the Deutsch-Josza algorithm on an ion trap quantum computer. , 2003, , .		0
124	Vacuum-field level shifts in a single atom mediated by a single distant mirror. , 2003, , .		0
125	Precision AC-Stark measurement and a novel type of quantum gate. , 2003, , .		0
126	Realisation of the Cirac-Zoller controlled-NOT quantum gate. , 2003, , .		0

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127	Ion Trap Quantum Computing with Ca+ Ions. , 2005, , 61-73.		0
128	Electronic feedback control of single ion motion. , 0, , .		0
129	Precision measurement and calculation of the 3D 2D-level lifetimes of /sup 40/Ca/sup +/. , 0, , .		0
130	Entanglement of trapped ions. , 2006, , .		0
131	Design of Photonic Crystal Microcavities in Diamond for Quantum Information. , 2007, , .		0
132	Design of photonic crystal microcavities in diamond films for quantum information. , 2008, , .		0
133	Continuous-wave 532 nm pumped ingly-resonant optical parametric oscillator based on MgO-doped PPLN. , 2009, , .		0
134	Design of microcavities in diamond-based photonic crystals. , 2009, , .		0
135	Towards optimized single photon sources based on color centers in diamond. , 2009, , .		0
136	Narrow-bandwidth high-brightness single photon emission from silicon-vacancy colour centres in CVD-nano-diamonds. , 2011, , .		0
137	Fabrication and characterization of photonic crystal microcavities in quasi-single crystal diamond films. , 2011, , .		0
138	Highly efficient frequency downconversion at the single photon level. , 2011, , .		0
139	Photonic Crystal Microcavities in Single Crystal Diamond for Color Center Coupling. , 2012, , .		0
140	Low-Noise Frequency Down-Conversion at the Single Photon Level. , 2012, , .		0
141	Nano-Resonatoren aus Diamant. Physik in Unserer Zeit, 2012, 43, 58-59.	0.0	0
142	Controlled coupling of single color centers to a photonic crystal cavity in monocrystalline diamond. , 2013, , .		0
143	Quantum frequency conversion of visible single photons from a quantum dot to a telecom band. , 2013, , .		0
144	Coupling of a single N-V center in diamond to a fiber-based microcavity. , 2013, , .		0

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145	Resonant optical access to spin of silicon-vacancy centre in diamond. , 2014, , .		0
146	Frequency Conversion of Narrowband Single Photons from a SPDC Pair Source. , 2014, , .		0
147	Editorial for the topical issue S.I.: Quantum Repeater. Applied Physics B: Lasers and Optics, 2016, 122, 1.	1.1	0
148	Ultrafast all-optical coherent control of silicon vacancy colour centres in diamond. , 2017, , .		0
149	Localized orbital electronic states of colour centres in diamond for strong and fast light-matter interactions. , 2017, , .		0
150	Recent Advances in Diamond Science and Technology. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1900834.	0.8	0
151	Event-Ready Entanglement of Distant Atoms Distributed at Telecom Wavelength. , 2021, , .		0
152	Optically pumped quantum dot lasers using high-Q microdisk cavities. Springer Proceedings in Physics, 2001, , 655-656.	0.1	0
153	Precision frequency measurements with entangled ions. , 2004, , .		0
154	Single atom capturing effect by a single distant mirror. , 2004, , .		0
155	ION CRYSTALS FOR QUANTUM INFORMATION PROCESSING. , 2004, , .		0
156	VACUUM-FIELD MECHANICAL ACTION ON A SINGLE ION. , 2004, , .		0
157	Controlling Three Atomic Qubits. , 2006, , .		0
158	Single Atom - Single Photon Interaction: from Bad-Cavity QED to Remote Entanglement. , 2007, , .		0
159	Green-Pumped CW Singly Resonant Optical Parametric Oscillator Based on MgO:PPLN with Frequency Stabilization. , 2009, , .		0
160	Highly Stable Diode-laser pumped, Idler Resonant CW OPO based on MgO:PPLN. , 2010, , .		0
161	Frequency Down-Conversion of Single Photons into the Telecom Band. , 2010, , .		0
162	Self-Guided Operation of Green-Pumped Singly Resonant CW OPO based on Bulk MgO:PPLN. , 2010, , .		0

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163	Efficient Frequency Downconversion at the Single Photon Level from 738 nm to 1557 nm. , 2011, , .		0
164	Quantum Frequency Down-Conversion of Single Photons from a Quantum Dot to the Telecom Band. , 2012, , .		0
165	Optical signatures of spin in silicon-vacancy centre in diamond. , 2014, , .		0
166	Quantum Frequency Down-Conversion of Ca+â€"resonant Polarizationâ€"Entangled Photons to the Telecom O-Band. , 2017, , .		0
167	Coherent control and photonic interfacing of color centers in diamond. , 2017, , .		0
168	All-optical coherent control of silicon vacancy colour centres in diamond via ultrafast laser pulses. , 2017, , .		0
169	Coherent Control and Photonic Interfacing of Color Centers in Diamond. , 2017, , .		0
170	Quantum Frequency Down-Conversion of Ca+â€"resonant Polarizationâ€"Entangled Photons to the Telecom O-Band. , 2017, , .		0
171	Atom-to-photon quantum state mapping into the telecom range. , 2019, , .		0
172	Polarization-preserving quantum frequency conversion for entanglement distribution in trapped-atom based quantum networks. , 2019, , .		0
173	Special topic on non-classical light emitters and single-photon detectors. Applied Physics Letters, 2022, 120, 010401.	1.5	0