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	Special topic on non-classical light emitters and single-photon detectors. Applied Physics Letters, 2022, 120, 010401.	1.5	0
2	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
3	Coherence of a charge stabilised tin-vacancy spin in diamond. Npj Quantum Information, 2022, 8, .	2.8	16
4	Entangling single atoms over 33â€‰km telecom fibre. Nature, 2022, 607, 69-73.	13.7	62
5	Event-Ready Entanglement of Distant Atoms Distributed at Telecom Wavelength. , 2021, , .		0
6	A cavity-based optical antenna for color centers in diamond. APL Photonics, 2021, 6, .	3.0	9
7	Spectroscopic investigations of negatively charged tin-vacancy centres in diamond. New Journal of Physics, 2020, 22, 013048.	1.2	62
8	Extending Quantum Links: Modules for Fiberâ€•and Memoryâ€Based Quantum Repeaters. Advanced Quantum Technologies, 2020, 3, 1900141.	1.8	43
9	Effect of phonons on the electron spin resonance absorption spectrum. New Journal of Physics, 2020, 22, 073068.	1.2	4
10	Long-Distance Distribution of Atom-Photon Entanglement at Telecom Wavelength. Physical Review Letters, 2020, 124, 010510.	2.9	66
11	Recent Advances in Diamond Science and Technology. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1900834.	0.8	0
12	Toward wafer-scale diamond nano- and quantum technologies. APL Materials, 2019, 7, .	2.2	29
13	Coherent Control and Wave Mixing in an Ensemble of Silicon-Vacancy Centers in Diamond. Physical Review Letters, 2019, 122, 063601.	2.9	31
14	Spin measurements of NV centers coupled to a photonic crystal cavity. APL Photonics, 2019, 4, .	3.0	15
15	New insights into nonclassical light emission from defects in multi-layer hexagonal boron nitride. Nanophotonics, 2019, 8, 2041-2048.	2.9	35
16	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
17	Infrared laser threshold magnetometry with a NV doped diamond intracavity etalon. Optics Express, 2019, 27, 1706.	1.7	22
18	Atom-to-photon quantum state mapping into the telecom range. , 2019, , .		0

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19	Polarization-preserving quantum frequency conversion for entanglement distribution in trapped-atom based quantum networks. , 2019, , .		0
20	All-Optical Control of the Silicon-Vacancy Spin in Diamond at Millikelvin Temperatures. Physical Review Letters, 2018, 120, 053603.	2.9	103
21	Strongly inhomogeneous distribution of spectral properties of silicon-vacancy color centers in nanodiamonds. New Journal of Physics, 2018, 20, 115002.	1.2	52
22	Limitations on the indistinguishability of photons from remote solid state sources. New Journal of Physics, 2018, 20, 115003.	1.2	52
23	High-fidelity entanglement between a trapped ion and a telecom photon via quantum frequency conversion. Nature Communications, 2018, 9, 1998.	5.8	128
24	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
25	Single photon quantum frequency conversion as tool for quantum networks. , 2018, , .		1
26	Coherent control of the silicon-vacancy spin in diamond. Nature Communications, 2017, 8, 15579.	5.8	131
27	Experimental demonstration of a predictable single photon source with variable photon flux. Metrologia, 2017, 54, 218-223.	0.6	17
28	Highly sensitive on-chip magnetometer with saturable absorbers in two-color microcavities. Physical Review B, 2017, 95, .	1.1	7
29	Cavity-Enhanced Single-Photon Source Based on the Silicon-Vacancy Center in Diamond. Physical Review Applied, 2017, 7, .	1.5	78
30	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
31	Ultrafast all-optical coherent control of silicon vacancy colour centres in diamond. , 2017, , .		0
32	Localized orbital electronic states of colour centres in diamond for strong and fast light-matter interactions. , 2017, , .		0
33	Coherence and entanglement preservation of frequency-converted heralded single photons. Optics Express, 2017, 25, 11187.	1.7	16
34	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
35	Quantum Frequency Down-Conversion of Ca+â€“resonant Polarizationâ€“Entangled Photons to the Telecom O-Band. , 2017, , .		0
36	Coherent control and photonic interfacing of color centers in diamond. , 2017, , .		0

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37	All-optical coherent control of silicon vacancy colour centres in diamond via ultrafast laser pulses. , 2017, , .		0
38	Coherent Control and Photonic Interfacing of Color Centers in Diamond. , 2017, , .		0
39	Quantum Frequency Down-Conversion of Ca+â€“resonant Polarizationâ€“Entangled Photons to the Telecom O-Band. , 2017, , .		0
40	Low-noise quantum frequency down-conversion of indistinguishable photons. Optics Express, 2016, 24, 22250.	1.7	27
41	Highly efficient heralded single-photon source for telecom wavelengths based on a PPLN waveguide. Optics Express, 2016, 24, 23992.	1.7	64
42	Ultrafast all-optical coherent control of single silicon vacancy colour centres in diamond. Nature Communications, 2016, 7, 13512.	5.8	91
43	Site selective growth of heteroepitaxial diamond nanoislands containing single SiV centers. Applied Physics Letters, 2016, 108, .	1.5	18
44	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
45	Sichere Kommunikation per Quantenrepeater. Physik in Unserer Zeit, 2016, 47, 20-27.	0.0	3
46	Photoluminescence excitation and spectral hole burning spectroscopy of silicon vacancy centers in diamond. Physical Review B, 2016, 94, .	1.1	34
47	Editorial for the topical issue S.I.: Quantum Repeater. Applied Physics B: Lasers and Optics, 2016, 122, 1.	1.1	0
48	Single telecom photon heralding by wavelength multiplexing in an optical fiber. Applied Physics B: Lasers and Optics, 2016, 122, 1.	1.1	6
49	Telecom-heralded single-photon absorption by a single atom. Physical Review A, 2015, 92, .	1.0	23
50	Nanoimplantation and Purcell enhancement of single nitrogen-vacancy centers in photonic crystal cavities in diamond. Applied Physics Letters, 2015, 106, .	1.5	68
51	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
52	Resonant optical access to spin of silicon-vacancy centre in diamond. , 2014, , .		0
53	Modeling of optomechanical coupling in a phoxonic crystal cavity in diamond. Optics Express, 2014, 22, 12410.	1.7	32
54	All-Optical Formation of Coherent Dark States of Silicon-Vacancy Spins in Diamond. Physical Review Letters, 2014, 113, 263601.	2.9	121

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55	Diamond-based single-photon sources and their application in quantum key distribution. , 2014, , 127-159.		6
56	Optical signatures of silicon-vacancy spins in diamond. Nature Communications, 2014, 5, 3328.	5.8	158
57	Diamonds from outer space. Nature Nanotechnology, 2014, 9, 16-17.	15.6	1
58	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
59	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
60	Electronic Structure of the Silicon Vacancy Color Center in Diamond. Physical Review Letters, 2014, 112, 036405.	2.9	312
61	Frequency Conversion of Narrowband Single Photons from a SPDC Pair Source. , 2014, , .		0
62	Optical signatures of spin in silicon-vacancy centre in diamond. , 2014, , .		0
63	Low-temperature investigations of single silicon vacancy colour centres in diamond. New Journal of Physics, 2013, 15, 043005.	1.2	139
64	Single-photon frequency conversion in nonlinear crystals. Physical Review A, 2013, 88, .	1.0	6
65	Low temperature investigations and surface treatments of colloidal narrowband fluorescent nanodiamonds. Journal of Applied Physics, 2013, 113, .	1.1	22
66	Coupling of a Single Nitrogen-Vacancy Center in Diamond to a Fiber-Based Microcavity. Physical Review Letters, 2013, 110, 243602.	2.9	163
67	Controlled coupling of single color centers to a photonic crystal cavity in monocrystalline diamond. , 2013, , .		0
68	Quantum frequency conversion of visible single photons from a quantum dot to a telecom band. , 2013, , .		0
69	Coupling of a single N-V center in diamond to a fiber-based microcavity. , 2013, , .		0
70	Photonic Crystal Microcavities in Single Crystal Diamond for Color Center Coupling. , 2012, , .		0
71	Lock-in detection of single photons after two-step frequency conversion. Optics Letters, 2012, 37, 4254.	1.7	2
72	Low-Noise Frequency Down-Conversion at the Single Photon Level. , 2012, , .		0

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73	Photophysics of single silicon vacancy centers in diamond: implications for single photon emission. Optics Express, 2012, 20, 19956.	1.7	143
74	Electronic transitions of single silicon vacancy centers in the near-infrared spectral region. Physical Review B, 2012, 85, .	1.1	32
75	Fabrication of ridge waveguides in LiNbO<inf>3</inf>. , 2012, , .		6
76	Visible-to-Telecom Quantum Frequency Conversion of Light from a Single Quantum Emitter. Physical Review Letters, 2012, 109, 147404.	2.9	207
77	One- and two-dimensional photonic crystal microcavities in single crystal diamond. Nature Nanotechnology, 2012, 7, 69-74.	15.6	220
78	Nano-Resonatoren aus Diamant. Physik in Unserer Zeit, 2012, 43, 58-59.	0.0	0
79	Quantum Frequency Down-Conversion of Single Photons from a Quantum Dot to the Telecom Band. , 2012, , .		0
80	Narrow-bandwidth high-brightness single photon emission from silicon-vacancy colour centres in CVD-nano-diamonds. , 2011, , .		0
81	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
82	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
83	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
84	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
85	Stabilized diode laser pumped, idler-resonant cw optical parametric oscillator. Applied Physics B: Lasers and Optics, 2011, 102, 757-764.	1.1	5
86	Narrowband fluorescent nanodiamonds produced from chemical vapor deposition films. Applied Physics Letters, 2011, 98, .	1.5	104
87	Fluorescence and polarization spectroscopy of single silicon vacancy centers in heteroepitaxial nanodiamonds on iridium. Physical Review B, 2011, 84, .	1.1	72
88	Fabrication and characterization of photonic crystal microcavities in quasi-single crystal diamond films. , 2011, , .		0
89	Highly efficient frequency downconversion at the single photon level. , 2011, , .		0
90	Efficient Frequency Downconversion at the Single Photon Level from 738 nm to 1557 nm. , 2011, , .		0

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91	Single-photon emission from Ni-related color centers in CVD diamond. Proceedings of SPIE, 2010, , .	0.8	5
92	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
93	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
94	Quantum to classical transition in a single-ion laser. Nature Physics, 2010, 6, 350-353.	6.5	55
95	Highly Stable Diode-laser pumped, Idler Resonant CW OPO based on MgO:PPLN. , 2010, , .		0
96	Frequency Down-Conversion of Single Photons into the Telecom Band. , 2010, , .		0
97	Self-Guided Operation of Green-Pumped Singly Resonant CW OPO based on Bulk MgO:PPLN. , 2010, , .		0
98	Green-pumped CW singly resonant optical parametric oscillator based on MgO:PPLN with frequency stabilization. , 2009, , .		1
99	Continuous-wave 532 nm pumped ingly-resonant optical parametric oscillator based on MgO-doped PPLN. , 2009, , .		0
100	Design of microcavities in diamond-based photonic crystals. , 2009, , .		0
101	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
102	Towards spectroscopy of a few silicon nanocrystals embedded in silica. Physica E: Low-Dimensional Systems and Nanostructures, 2009, 41, 998-1001.	1.3	1
103	Towards optimized single photon sources based on color centers in diamond. , 2009, , .		0
104	Green-Pumped CW Singly Resonant Optical Parametric Oscillator Based on MgO:PPLN with Frequency Stabilization. , 2009, , .		0
105	Design of Photonic Crystal Microcavities in Diamond Films. Optics Express, 2008, 16, 1632.	1.7	50
106	Design of photonic crystal microcavities in diamond films for quantum information. , 2008, , .		0
107	QUANTUM COMPUTATION WITH TRAPPED IONS. , 2008, , .		2
108	Design of Photonic Crystal Microcavities in Diamond for Quantum Information. , 2007, , .		0

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109	Single Atom - Single Photon Interaction: from Bad-Cavity QED to Remote Entanglement. , 2007, , .		0
110	Entanglement of trapped ions. , 2006, , .		0
111	Feedback Cooling of a Single Trapped Ion. Physical Review Letters, 2006, 96, 043003.	2.9	158
112	Controlling Three Atomic Qubits. , 2006, , .		0
113	ENTANGLEMENT OF TRAPPED IONS. , 2005, , .		1
114	Scalable multiparticle entanglement of trapped ions. Nature, 2005, 438, 643-646.	13.7	1,027
115	Robust entanglement. Applied Physics B: Lasers and Optics, 2005, 81, 151-153.	1.1	103
116	Ion Trap Quantum Computing with Ca+ Ions. , 2005, , 61-73.		0
117	Teleportation with atoms. AIP Conference Proceedings, 2005, , .	0.3	1
118	Experimental and theoretical study of the3dD2â€"level lifetimes ofCa+40. Physical Review A, 2005, 71, .	1.0	81
119	Forces between a Single Atom and Its Distant Mirror Image. Physical Review Letters, 2004, 92, 223602.	2.9	61
120	Bell States of Atoms with Ultralong Lifetimes and Their Tomographic State Analysis. Physical Review Letters, 2004, 92, 220402.	2.9	194
121	Course 5 Quantum information processing in ion traps I. Les Houches Summer School Proceedings, 2004, 79, 223-260.	0.2	3
122	A single-photon source based on a single Ca+ion. New Journal of Physics, 2004, 6, 94-94.	1.2	42
123	Quantized AC-Stark shifts and their use for multiparticle entanglement and quantum gates. Europhysics Letters, 2004, 65, 587-593.	0.7	18
124	Deterministic quantum teleportation with atoms. Nature, 2004, 429, 734-737.	13.7	853
125	Ion Trap Quantum Computing with Ca+ Ions. Quantum Information Processing, 2004, 3, 61-73.	1.0	18
126	Spontaneous Emission Lifetime of a Single TrappedCa+Ion in a High Finesse Cavity. Physical Review Letters, 2004, 92, 203002.	2.9	64

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127	Control and Measurement of Three-Qubit Entangled States. Science, 2004, 304, 1478-1480.	6.0	312
128	Precision frequency measurements with entangled ions. , 2004, , .		0
129	Single atom capturing effect by a single distant mirror. , 2004, , .		0
130	ION CRYSTALS FOR QUANTUM INFORMATION PROCESSING. , 2004, , .		0
131	VACUUM-FIELD MECHANICAL ACTION ON A SINGLE ION. , 2004, , .		0
132	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
133	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
134	How to realize a universal quantum gate with trapped ions. Applied Physics B: Lasers and Optics, 2003, 77, 789-796.	1.1	131
135	Single trapped ions interacting with low- and high-finesse optical cavities. Fortschritte Der Physik, 2003, 51, 359-368.	1.5	4
136	Implementation of the Deutschâ€"Jozsa algorithm on an ion-trap quantum computer. Nature, 2003, 421, 48-50.	13.7	402
137	Realization of the Ciracâ€"Zoller controlled-NOT quantum gate. Nature, 2003, 422, 408-411.	13.7	769
138	Coherent coupling of a single Ca/sup +/ ion to a high finesse optical cavity field. , 2003, , .		0
139	Implementation of the Deutsch-Josza algorithm on an ion trap quantum computer. , 2003, , .		0
140	Precision Measurement and Compensation of Optical Stark Shifts for an Ion-Trap Quantum Processor. Physical Review Letters, 2003, 90, 143602.	2.9	117
141	Vacuum-Field Level Shifts in a Single Trapped Ion Mediated by a Single Distant Mirror. Physical Review Letters, 2003, 91, 213602.	2.9	69
142	Vacuum-field level shifts in a single atom mediated by a single distant mirror. , 2003, , .		0
143	Quantum information processing with trapped Ca + ions. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2003, 361, 1363-1374.	1.6	12
144	Precision AC-Stark measurement and a novel type of quantum gate. , 2003, , .		0

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145	The coherence of qubits based on single CaÂions. Journal of Physics B: Atomic, Molecular and Optical Physics, 2003, 36, 623-636.	0.6	128
146	Realisation of the Cirac-Zoller controlled-NOT quantum gate. , 2003, , .		0
147	Quantum Dot Single Photon Source. , 2003, , 165-170.		3
148	Photon correlation spectroscopy of a single quantum dot. Physical Review B, 2002, 65, .	1.1	116
149	Coupling a Single Atomic Quantum Bit to a High Finesse Optical Cavity. Physical Review Letters, 2002, 89, 103001.	2.9	266
150	Nonclassical Radiation from a Single Quantum Dot. Physica Status Solidi (B): Basic Research, 2002, 229, 399-405.	0.7	18
151	A quantum dot single-photon source. Physica E: Low-Dimensional Systems and Nanostructures, 2002, 13, 412-417.	1.3	16
152	Nonclassical radiation from a single self-assembled InAs quantum dot. Physical Review B, 2001, 63, .	1.1	114
153	Quantum Dot Lasers Using High-Q Microdisk Cavities. Physica Status Solidi (B): Basic Research, 2001, 224, 797-801.	0.7	13
154	Cavity-quantum electrodynamics using a single InAs quantum dot in a microdisk structure. Applied Physics Letters, 2001, 78, 3932-3934.	1.5	192
155	Photonen auf Bestellung: MaÃŸgeschneiderte Quantenpunkte dienen als Einzelphotonenquellen. Physik Journal, 2001, 57, 55-61.	0.1	3
156	Photonic crystal microcavities with self-assembled InAs quantum dots as active emitters. Applied Physics Letters, 2001, 78, 2279-2281.	1.5	54
157	A Quantum Dot Single Photon Source. , 2001, , 3-14.		4
158	Optically pumped quantum dot lasers using high-Q microdisk cavities. Springer Proceedings in Physics, 2001, , 655-656.	0.1	0
159	A Quantum Dot Single-Photon Turnstile Device. Science, 2000, 290, 2282-2285.	6.0	2,170
160	Laser emission from quantum dots in microdisk structures. Applied Physics Letters, 2000, 77, 184-186.	1.5	139
161	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
162	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

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163	Spectrally asymmetric mode correlation and intensity noise in pump-noise-suppressed laser diodes. Physical Review A, 1998, 57, 3952-3960.	1.0	26
164	Narrow-linewidth fast-tunable external-cavity near-infrared diode lasers for trace gas detection. , 1998, , .		1
165	Diode-pumped optical parametric oscillators. Quantum and Semiclassical Optics: Journal of the European Optical Society Part B, 1997, 9, 173-189.	1.0	7
166	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
167	Cavity-QED using a single InAs quantum dot and a high-Q whispering gallery mode. , 0, , .		4
168	Heralded single photons from a single quantum dot. , 0, , .		1
169	Emission from quantum dots in a photonic crystal microcavity. , 0, , .		0
170	Cross-correlation spectroscopy in a single quantum dot. , 0, , .		0
171	Quantum computing with trapped ions. , 0, , .		2
172	Electronic feedback control of single ion motion. , 0, , .		0
173	Precision measurement and calculation of the 3D 2D-level lifetimes of /sup 40/Ca/sup +/. , 0, , .		0