

# Dirk Englund

## List of Publications by Year in descending order

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163  
papers

17,521  
citations

16411

64  
h-index

24915

109  
g-index

163  
all docs

163  
docs citations

163  
times ranked

13886  
citing authors

#	ARTICLE	IF	CITATIONS
1	Deep learning with coherent nanophotonic circuits. Nature Photonics, 2017, 11, 441-446.	15.6	1,845
2	Solid-state single-photon emitters. Nature Photonics, 2016, 10, 631-641.	15.6	1,174
3	Chip-integrated ultrafast graphene photodetector with high responsivity. Nature Photonics, 2013, 7, 883-887.	15.6	971
4	Controlling the Spontaneous Emission Rate of Single Quantum Dots in a Two-Dimensional Photonic Crystal. Physical Review Letters, 2005, 95, 013904.	2.9	805
5	Programmable photonic circuits. Nature, 2020, 586, 207-216.	13.7	598
6	Controlling cavity reflectivity with a single quantum dot. Nature, 2007, 450, 857-861.	13.7	580
7	Ultrafast photonic crystal nanocavity laser. Nature Physics, 2006, 2, 484-488.	6.5	530
8	Coherent generation of non-classical light on a chip via photon-induced tunnelling and blockade. Nature Physics, 2008, 4, 859-863.	6.5	515
9	Material platforms for spin-based photonic quantum technologies. Nature Reviews Materials, 2018, 3, 38-51.	23.3	453
10	Inference in artificial intelligence with deep optics and photonics. Nature, 2020, 588, 39-47.	13.7	418
11	Controlled Phase Shifts with a Single Quantum Dot. Science, 2008, 320, 769-772.	6.0	397
12	Quantum transport simulations in a programmable nanophotonic processor. Nature Photonics, 2017, 11, 447-452.	15.6	359
13	Tunable and high-purity room temperature single-photon emission from atomic defects in hexagonal boron nitride. Nature Communications, 2017, 8, 705.	5.8	351
14	A MoTe <sub>2</sub> -based light-emitting diode and photodetector for silicon photonic integrated circuits. Nature Nanotechnology, 2017, 12, 1124-1129.	15.6	344
15	Deterministic Coupling of a Single Nitrogen Vacancy Center to a Photonic Crystal Cavity. Nano Letters, 2010, 10, 3922-3926.	4.5	309
16	Efficient, compact and low loss thermo-optic phase shifter in silicon. Optics Express, 2014, 22, 10487.	1.7	272
17	Strong Enhancement of Light-Matter Interaction in Graphene Coupled to a Photonic Crystal Nanocavity. Nano Letters, 2012, 12, 5626-5631.	4.5	248
18	Large-scale integration of artificial atoms in hybrid photonic circuits. Nature, 2020, 583, 226-231.	13.7	248

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19	Linear programmable nanophotonic processors. <i>Optica</i> , 2018, 5, 1623.	4.8	240
20	On-chip detection of non-classical light by scalable integration of single-photon detectors. <i>Nature Communications</i> , 2015, 6, 5873.	5.8	238
21	Controlling the spontaneous emission rate of monolayer MoS <sub>2</sub> in a photonic crystal nanocavity. <i>Applied Physics Letters</i> , 2013, 103, 181119.	1.5	194
22	Resonant Excitation of a Quantum Dot Strongly Coupled to a Photonic Crystal Nanocavity. <i>Physical Review Letters</i> , 2010, 104, 073904.	2.9	192
23	Chalcogenide glass-on-graphene photonics. <i>Nature Photonics</i> , 2017, 11, 798-805.	15.6	190
24	High-Responsivity Graphene-Boron Nitride Photodetector and Autocorrelator in a Silicon Photonic Integrated Circuit. <i>Nano Letters</i> , 2015, 15, 7288-7293.	4.5	185
25	Large-Scale Optical Neural Networks Based on Photoelectric Multiplication. <i>Physical Review X</i> , 2019, 9, .	2.8	179
26	High-Contrast Electrooptic Modulation of a Photonic Crystal Nanocavity by Electrical Gating of Graphene. <i>Nano Letters</i> , 2013, 13, 691-696.	4.5	177
27	Development of Quantum Interconnects (QulCs) for Next-Generation Information Technologies. <i>PRX Quantum</i> , 2021, 2, .	3.5	172
28	Experimental investigation of performance differences between coherent Ising machines and a quantum annealer. <i>Science Advances</i> , 2019, 5, eaau0823.	4.7	169
29	Integration of single photon emitters in 2D layered materials with a silicon nitride photonic chip. <i>Nature Communications</i> , 2019, 10, 4435.	5.8	168
30	Efficient Photon Collection from a Nitrogen Vacancy Center in a Circular Bullseye Grating. <i>Nano Letters</i> , 2015, 15, 1493-1497.	4.5	161
31	Hybrid integration methods for on-chip quantum photonics. <i>Optica</i> , 2020, 7, 291.	4.8	161
32	Self-Similar Nanocavity Design with Ultrasmall Mode Volume for Single-Photon Nonlinearities. <i>Physical Review Letters</i> , 2017, 118, 223605.	2.9	159
33	Ultrafast Photon-Photon Interaction in a Strongly Coupled Quantum Dot-Cavity System. <i>Physical Review Letters</i> , 2012, 108, 093604.	2.9	155
34	The potential and global outlook of integrated photonics for quantum technologies. <i>Nature Reviews Physics</i> , 2022, 4, 194-208.	11.9	151
35	Generation and transfer of single photons on a photonic crystal chip. <i>Optics Express</i> , 2007, 15, 5550.	1.7	144
36	Coherent spin control of a nanocavity-enhanced qubit in diamond. <i>Nature Communications</i> , 2015, 6, 6173.	5.8	144

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37	Efficient photonic crystal cavity-waveguide couplers. Applied Physics Letters, 2007, 90, 073102.	1.5	143
38	High-Speed Electro-Optic Modulator Integrated with Graphene-Boron Nitride Heterostructure and Photonic Crystal Nanocavity. Nano Letters, 2015, 15, 2001-2005.	4.5	142
39	Hybrid Integration of Solid-State Quantum Emitters on a Silicon Photonic Chip. Nano Letters, 2017, 17, 7394-7400.	4.5	142
40	Scalable focused ion beam creation of nearly lifetime-limited single quantum emitters in diamond nanostructures. Nature Communications, 2017, 8, 15376.	5.8	141
41	Dipole induced transparency in waveguide coupled photonic crystal cavities. Optics Express, 2008, 16, 12154.	1.7	120
42	Transform-Limited Photons From a Coherent Tin-Vacancy Spin in Diamond. Physical Review Letters, 2020, 124, 023602.	2.9	119
43	Local quantum dot tuning on photonic crystal chips. Applied Physics Letters, 2007, 90, 213110.	1.5	117
44	Quantum optical neural networks. Npj Quantum Information, 2019, 5, .	2.8	111
45	Large-scale quantum photonic circuits in silicon. Nanophotonics, 2016, 5, 456-468.	2.9	109
46	Ultrafast Graphene Light Emitters. Nano Letters, 2018, 18, 934-940.	4.5	109
47	Quantum networks based on color centers in diamond. Journal of Applied Physics, 2021, 130, .	1.1	105
48	High-brightness single photon source from a quantum dot in a directional-emission nanocavity. Optics Express, 2009, 17, 14618.	1.7	101
49	Broadband Coherent Absorption in Chirped-Planar-Dielectric Cavities for 2D-Material-Based Photovoltaics and Photodetectors. ACS Photonics, 2014, 1, 768-774.	3.2	101
50	Integrated Source of Spectrally Filtered Correlated Photons for Large-Scale Quantum Photonic Systems. Physical Review X, 2014, 4, .	2.8	100
51	Rate-distance tradeoff and resource costs for all-optical quantum repeaters. Physical Review A, 2017, 95, .	1.0	94
52	Integrated quantum optical networks based on quantum dots and photonic crystals. New Journal of Physics, 2011, 13, 055025.	1.2	92
53	High-speed programmable photonic circuits in a cryogenically compatible, visible-“near-infrared 200-µm CMOS architecture. Nature Photonics, 2022, 16, 59-65.	15.6	91
54	Rectangular photonic crystal nanobeam cavities in bulk diamond. Applied Physics Letters, 2017, 111, .	1.5	80

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55	Hardware error correction for programmable photonics. <i>Optica</i> , 2021, 8, 1247.	4.8	80
56	Thermal radiation control from hot graphene electrons coupled to a photonic crystal nanocavity. <i>Nature Communications</i> , 2019, 10, 109.	5.8	79
57	Lead-related quantum emitters in diamond. <i>Physical Review B</i> , 2019, 99, .	1.1	78
58	Scalable Fabrication of High Purity Diamond Nanocrystals with Long-Spin-Coherence Nitrogen Vacancy Centers. <i>Nano Letters</i> , 2014, 14, 32-36.	4.5	75
59	Graphene-Based Josephson-Junction Single-Photon Detector. <i>Physical Review Applied</i> , 2017, 8, .	1.5	74
60	Advances in quantum light emission from 2D materials. <i>Nanophotonics</i> , 2019, 8, 2017-2032.	2.9	74
61	A high-resolution spectrometer based on a compact planar two dimensional photonic crystal cavity array. <i>Applied Physics Letters</i> , 2012, 100, 231104.	1.5	73
62	Heuristic recurrent algorithms for photonic Ising machines. <i>Nature Communications</i> , 2020, 11, 249.	5.8	69
63	Enhanced photodetection in graphene-integrated photonic crystal cavity. <i>Applied Physics Letters</i> , 2013, 103, .	1.5	68
64	High-fidelity quantum state evolution in imperfect photonic integrated circuits. <i>Physical Review A</i> , 2015, 92, .	1.0	67
65	Bright and photostable single-photon emitter in silicon carbide. <i>Optica</i> , 2016, 3, 768.	4.8	67
66	Efficient Extraction of Light from a Nitrogen-Vacancy Center in a Diamond Parabolic Reflector. <i>Nano Letters</i> , 2018, 18, 2787-2793.	4.5	66
67	Fast thermal relaxation in cavity-coupled graphene bolometers with a Johnson noise read-out. <i>Nature Nanotechnology</i> , 2018, 13, 797-801.	15.6	66
68	Variational quantum unsampling on a quantum photonic processor. <i>Nature Physics</i> , 2020, 16, 322-327.	6.5	52
69	Nonlinear temporal dynamics of a strongly coupled quantum-dot cavity system. <i>Physical Review A</i> , 2012, 85, .	1.0	46
70	Linewidth broadening of a quantum dot coupled to an off-resonant cavity. <i>Physical Review B</i> , 2010, 82, .	1.1	45
71	Low-threshold surface-passivated photonic crystal nanocavity laser. <i>Applied Physics Letters</i> , 2007, 91, 071124.	1.5	43
72	Active 2D materials for on-chip nanophotonics and quantum optics. <i>Nanophotonics</i> , 2017, 6, 1329-1342.	2.9	38

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73	Fabrication of triangular nanobeam waveguide networks in bulk diamond using single-crystal silicon hard masks. <i>Applied Physics Letters</i> , 2014, 105, .	1.5	37
74	Photophysics of GaN single-photon emitters in the visible spectral range. <i>Physical Review B</i> , 2018, 97, .	1.1	36
75	Cascaded Cavities Boost the Indistinguishability of Imperfect Quantum Emitters. <i>Physical Review Letters</i> , 2019, 122, 183602.	2.9	34
76	Generation and manipulation of nonclassical light using photonic crystals. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2006, 32, 466-470.	1.3	33
77	All Optical Switching With a Single Quantum Dot Strongly Coupled to a Photonic Crystal Cavity. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2012, 18, 1812-1817.	1.9	33
78	Bright High-Purity Quantum Emitters in Aluminum Nitride Integrated Photonics. <i>ACS Photonics</i> , 2020, 7, 2650-2657.	3.2	33
79	Percolation thresholds for photonic quantum computing. <i>Nature Communications</i> , 2019, 10, 1070.	5.8	32
80	Freely scalable and reconfigurable optical hardware for deep learning. <i>Scientific Reports</i> , 2021, 11, 3144.	1.6	32
81	2D materials-enabled optical modulators: From visible to terahertz spectral range. <i>Applied Physics Reviews</i> , 2022, 9, .	5.5	32
82	Quantum Control of the Tin-Vacancy Spin Qubit in Diamond. <i>Physical Review X</i> , 2021, 11, .	2.8	30
83	Dynamics of quantum dot photonic crystal lasers. <i>Applied Physics Letters</i> , 2007, 90, 151102.	1.5	27
84	Electrically controlled modulation in a photonic crystal nanocavity. <i>Optics Express</i> , 2009, 17, 15409.	1.7	26
85	Strain-Related Localized Exciton Energy in Atomically Thin Semiconductors. <i>ACS Photonics</i> , 2020, 7, 1135-1140.	3.2	25
86	Nanophotonic Filters and Integrated Networks in Flexible 2D Polymer Photonic Crystals. <i>Scientific Reports</i> , 2013, 3, 2145.	1.6	24
87	A quantum router architecture for high-fidelity entanglement flows in quantum networks. <i>Npj Quantum Information</i> , 2022, 8, .	2.8	24
88	Programmable dispersion on a photonic integrated circuit for classical and quantum applications. <i>Optics Express</i> , 2017, 25, 21275.	1.7	23
89	An optical modulator based on a single strongly coupled quantum dot - cavity system in a p-i-n junction. <i>Optics Express</i> , 2009, 17, 18651.	1.7	21
90	Controlled Light-Matter Interaction in Graphene Electrooptic Devices Using Nanophotonic Cavities and Waveguides. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2014, 20, 95-105.	1.9	20

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91	Quantum dots in photonic crystals: From quantum information processing to single photon nonlinear optics. <i>Photonics and Nanostructures - Fundamentals and Applications</i> , 2009, 7, 56-62.	1.0	19
92	One-dimensional photonic crystal cavities in single-crystal diamond. <i>Photonics and Nanostructures - Fundamentals and Applications</i> , 2015, 15, 130-136.	1.0	18
93	Scalable feedback control of single photon sources for photonic quantum technologies. <i>Optica</i> , 2019, 6, 335.	4.8	18
94	Piezo-optomechanical cantilever modulators for VLSI visible photonics. <i>APL Photonics</i> , 2022, 7, .	3.0	17
95	Waveguide-integrated photonic crystal spectrometer with camera readout. <i>Applied Physics Letters</i> , 2014, 105, 051103.	1.5	16
96	Efficient terahertz room-temperature photonic crystal nanocavity laser. <i>Applied Physics Letters</i> , 2007, 91, 071126.	1.5	15
97	Fiber-Coupled Diamond Micro-Waveguides toward an Efficient Quantum Interface for Spin Defect Centers. <i>ACS Omega</i> , 2017, 2, 7194-7202.	1.6	13
98	Top-down fabrication of high-uniformity nanodiamonds by self-assembled block copolymer masks. <i>Scientific Reports</i> , 2019, 9, 6914.	1.6	12
99	A tunable waveguide-coupled cavity design for scalable interfaces to solid-state quantum emitters. <i>APL Photonics</i> , 2017, 2, 046103.	3.0	11
100	Quantum Materials with Atomic Precision: Artificial Atoms in Solids: Ab Initio Design, Control, and Integration of Single Photon Emitters in Artificial Quantum Materials. <i>Advanced Functional Materials</i> , 2019, 29, 1904557.	7.8	11
101	Photonic crystal cavity-assisted upconversion infrared photodetector. <i>Optics Express</i> , 2015, 23, 12998.	1.7	10
102	Integrated nanoplasmonic quantum interfaces for room-temperature single-photon sources. <i>Physical Review B</i> , 2017, 96, .	1.1	8
103	Quantum photonics model for nonclassical light generation using integrated nanoplasmonic cavity-emitter systems. <i>Physical Review A</i> , 2018, 97, .	1.0	8
104	Field-based design of a resonant dielectric antenna for coherent spin-photon interfaces. <i>Optics Express</i> , 2021, 29, 16469.	1.7	7
105	Time-resolved lasing action from single and coupled photonic crystal nanocavity array lasers emitting in the telecom band. <i>Journal of Applied Physics</i> , 2009, 105, 093110.	1.1	6
106	Universal linear optics by programmable multimode interference. <i>Optics Express</i> , 2021, 29, 38257.	1.7	6
107	Heterogeneous Integration of 2D Materials and Devices on a Si Platform. , 2019, , 43-84.		5
108	Dynamics of Quantum Dot Photonic Crystal Lasers. , 2007, , .		3

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109	Percolation Based Cluster State Generation by Photon-Mediated Entanglement. , 2018, , .		3
110	Demonstration of WDM-Enabled Ultralow-Energy Photonic Edge Computing. , 2022, , .		3
111	Probing the interaction between a single quantum dot and a photonic crystal cavity. Physica Status Solidi C: Current Topics in Solid State Physics, 2008, 5, 2808-2815.	0.8	2
112	Ultrafast photonic crystal nanocavity lasers and optical switches. , 2008, , .		2
113	On-chip graphene optoelectronic devices for high-speed modulation and photodetection. Proceedings of SPIE, 2014, , .	0.8	2
114	Targeted creation and Purcell enhancement of NV centers within photonic crystal cavities in single-crystal diamond. , 2014, , .		2
115	Robust Zero-Change Self-Configuration of the Rectangular Mesh. , 2021, , .		2
116	Dipole induced transparency in waveguide coupled photonic crystal cavities. , 2008, , .		1
117	Physics and Applications of Quantum Dots in Photonic Crystals. Nanoscience and Technology, 2009, , 299-329.	1.5	1
118	Programmable Nanophotonics for Quantum Simulation and Machine Learning. , 2017, , .		1
119	Variational Quantum Unsampling on a Programmable Nanophotonic Processor. , 2019, , .		1
120	Waveguide-coupled Localized Excitons From a WSe2 monolayer on a Silicon Nitride Photonic Platform. , 2019, , .		1
121	Integrated Photonics for Counterfactual Communication. , 2019, , .		1
122	Design of Asymptotically Perfect Linear Feedforward Photonic Circuits. , 2022, , .		1
123	Photonic Crystal Microcavities for Classical and Quantum Information Processing. , 2006, , .		0
124	High Speed Dynamics of Photonic Crystal Nanocavity Laser. , 2006, , .		0
125	Nanophotonic devices for quantum information processing. , 2006, , .		0
126	Coupled nanocavity arrays. , 2007, , .		0



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127	Photonic Crystal Surface Mode Laser. , 2007, , .		0
128	Efficient Terahertz Room-Temperature Photonic Crystal Laser. , 2007, , .		0
129	Photonic crystal surface mode laser. , 2007, , .		0
130	Low-Threshold Ultrafast Surface-Passivated Photonic Crystal Nanocavity Lasers. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	0
131	Photonic crystal chips for optical interconnects and quantum information processing. Proceedings of SPIE, 2008, , .	0.8	0
132	Single photon nonlinear optics with quantum dots in photonic crystal resonators. , 2008, , .		0
133	Realization of giant optical nonlinearities in a quantum dot coupled to a nanocavity. , 2008, , .		0
134	Photonic crystal chips for optical communications and quantum information processing. Proceedings of SPIE, 2008, , .	0.8	0
135	Probing a quantum dot in the weak coupling regime. , 2008, , .		0
136	Single photon nonlinear optics in photonic crystals. Proceedings of SPIE, 2009, , .	0.8	0
137	Quantum dots in photonic crystals: from single photon sources to single photon nonlinear optics. , 2009, , .		0
138	Integrated photonic crystal networks with coupled quantum dots. , 2010, , .		0
139	Spontaneous Emission Control in a Plasmonic Structure. , 2010, , 1-26.		0
140	Quantum and classical information processing with a single quantum dot in photonic crystal cavity. , 2010, , .		0
141	A hybrid quantum photonic interface for solid state qubits. Proceedings of SPIE, 2011, , .	0.8	0
142	(Solid state) cavity QED for quantum and classical information processing. , 2011, , .		0
143	Strong enhancement of graphene-light interaction in a photonic crystal nanocavity. , 2012, , .		0
144	Electro-optical Modulation in Graphene Integrated Photonic Crystal Nanocavities. , 2013, , .		0

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145	On-chip graphene optoelectronic devices for optical interconnects. , 2014, , .		0
146	Ultrafast Graphene Photodetector for On-chip Broadband Auto-correlator. , 2015, , .		0
147	Heralded Quantum Random Access Memory in a Scalable Photonic Integrated Circuit Platform. , 2021, , .		0
148	Nonlinear Optical Processes in Photonic Crystal Microcavities. , 2007, , .		0
149	Room-Temperature Low-Threshold GaAs/InGaAs Photonic Crystal Laser. , 2007, , .		0
150	Dynamics of Quantum Dot Photonic Crystal Lasers. , 2007, , .		0
151	Terahertz Room-Temperature Photonic Crystal Laser. , 2007, , .		0
152	Cavity QED, Single-Photon Nonlinear Optics and Quantum Information Processing with Quantum Dots in Photonic Crystals. , 2008, , .		0
153	Quantum dot-nanocavity devices for information processing. , 2010, , .		0
154	Deterministic Creation and Strong Purcell Enhancement of Long-lived Nitrogen-Vacancy Spin Qubits in Diamond Photonic Crystal Cavities. , 2014, , .		0
155	Tunable-Coupling Resonator Arrays for Chip-Based Quantum Enigma Machines. , 2016, , .		0
156	Cavity-Enhanced Narrowband Radiation of an Electrically Driven Graphene Light Emitter. , 2016, , .		0
157	Scalable Time-Multiplexed Optical Neural Networks based on Homodyne Detection. , 2019, , .		0
158	Large-Scale Optical Neural-Network Accelerators based on Coherent Detection. , 2019, , .		0
159	Digital Optical Neural Networks for Large-Scale Machine Learning. , 2020, , .		0
160	High-Speed, Cryogenically Compatible, and Visible-Wavelength Photonic Circuits in a 200 mm CMOS Architecture. , 2021, , .		0
161	Universal Optics with Programmable Multimode Interference. , 2021, , .		0
162	8x8 Programmable Many-Mode Interferometer Operating with Visible-Wavelength Piezo-Cantilever Modulators. , 2021, , .		0

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163	Design of asymptotically perfect linear photonic circuits. , 2022, , .		0