Alfred Forchel

List of Publications by Year
in descending order

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159 papers	6,192 citations	81743 39 h-index	69108 77 g-index
162 all docs	162 docs citations	162 times ranked	6428 citing authors

#	Article	IF	Citations
1	Transient Oscillatory Behaviors of Polariton Condensates. Journal of the Physical Society of Japan, 2018, 87, 094401.	0.7	3
2	Highly excited exciton-polariton condensates. Physical Review B, 2017, 95, .	1.1	18
3	Spatial correlation of two-dimensional bosonic multimode condensates. Physical Review A, 2016, 93, .	1.0	6
4	High-energy side-peak emission of exciton-polariton condensates in high density regime. Scientific Reports, 2016, 6, 25655.	1.6	27
5	Ghost Branch Photoluminescence From a Polariton Fluid Under Nonresonant Excitation. Physical Review Letters, 2015, 115, 186401.	2.9	26
6	An electrically pumped polariton laser. , 2015, , .		1
7	Structural and optical properties of position-retrievable low-density GaAs droplet epitaxial quantum dots for application to single photon sources with plasmonic optical coupling. Nanoscale Research Letters, 2015, 10, 114.	3.1	6
8	Spatial and temporal dynamics of the crossover from excitonâ€“polariton condensation to photon lasing. Japanese Journal of Applied Physics, 2015, 54, 092801.	0.8	2
9	Free space quantum key distribution over 500 meters using electrically driven quantum dot single-photon sourcesâ€”a proof of principle experiment. New Journal of Physics, 2014, 16, 043003.	1.2	41
10	Algebraic order and the Berezinskii-Kosterlitz-Thouless transition in an exciton-polariton gas. Physical Review B, 2014, 90, .	1.1	53
11	Bright quantum dot single photon source based on a low Q defect cavity. , 2014, , .		0
12	Free Space Quantum Key Distribution over 500 Meters using Electrically Triggered Quantum Dot Single-Photon Sources. , 2014, , .		0
13	Bright single photon source based on self-aligned quantum dotâ€“cavity systems. Optics Express, 2014, 22, 8136.	1.7	46
14	f-band condensates in exciton-polariton lattice systems. Physical Review B, 2014, 89, .	1.1	8
15	Optical Properties of Quantum Dashes. Solid State Phenomena, 2014, 213, 3-11.	0.3	0
16	AlGaInAs Quantum Dots for Intermediate Band Formation in Solar Cell Devices. Lecture Notes in Nanoscale Science and Technology, 2014, , 167-186.	0.4	1
17	Complete tomography of a high-fidelity solid-state entangled spinâ€“photon qubit pair. Nature Communications, 2013, 4, 2228.	5.8	31
18	Single spins in semiconductor quantum dot microcavities. , 2013, , .		0

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19	New lasing from exciton-polariton condensates in high excitation regime. , 2013, , .		0
20	Unconventional Growth Mechanism for Monolithic Integration of IIIâ€“V on Silicon. ACS Nano, 2013, 7, 100-107.	7.3	53
21	An electrically pumped polariton laser. Nature, 2013, 497, 348-352.	13.7	420
22	Recent advances in GaSb-based structures for mid-infrared emitting lasers: spectroscopic study. , 2013, , .		2
23	Degenerate high-orbital microcavity exciton-polariton condensates in a lattice. , 2013, , .		0
24	Temperature Dependence of Highly Excited Exciton Polaritons in Semiconductor Microcavities. Journal of the Physical Society of Japan, 2013, 82, 084709.	0.7	18
25	Free space quantum key distribution over 500 meters using electrically driven quantum dot single photon sources. , 2013, , .		0
26	Stochastic formation of polariton condensates in two degenerate orbital states. Physical Review B, 2013, 87, .	1.1	30
27	Bloch-wave engineered submicron-diameter quantum-dot micropillars for cavity QED experiments. Proceedings of SPIE, 2013, , .	0.8	0
28	Ultrafast optical control of individual electron and hole spin qubits: entanglement between a single quantum dot electron spin and a downconverted 1560-nm single photon. Proceedings of SPIE, 2013, , .	0.8	0
29	Exciton-Polariton Condensates in Zero-, One-, and Two-Dimensional Lattices. Springer Series in Solid-state Sciences, 2013, , 157-175.	0.3	4
30	Ultrafast downconversion quantum interface for a single quantum dot spin and 1550-nm single-photon channel. , 2013, , .		0
31	Observation of BKT Transition in BEC of Exciton-Polaritons in a Semiconductor Microcavity. , 2013, , .		0
32	Temperature dependence of pulsed polariton lasing in a GaAs microcavity. New Journal of Physics, 2012, 14, 083014.	1.2	13
33	Excitonâ€“polariton condensates with flat bands in a two-dimensional kagome lattice. New Journal of Physics, 2012, 14, 065002.	1.2	97
34	Downconversion quantum interface for a single quantum dot spin and 1550-nm single-photon channel. Optics Express, 2012, 20, 27510.	1.7	57
35	Single mode quantum cascade lasers with shallow-etched distributed Bragg reflector. Optics Express, 2012, 20, 3890.	1.7	24
36	Single photon emission from InGaN/GaN quantum dots up to 50â€‰K. Applied Physics Letters, 2012, 100, .	1.5	39

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37	Single-photon emitters based on epitaxial isolated InP/InGaP quantum dots. Applied Physics Letters, 2012, 100, .	1.5	18
38	Characterization of two-threshold behavior of the emission from a GaAs microcavity. Physical Review B, 2012, 85, .	1.1	56
39	Towards intermediate-band formation in solar cells with AlGaInAs quantum dots. , 2012, , .		0
40	Relaxation dynamics of optically imprinted polariton wires. , 2012, , .		0
41	Quantum dot microlasers with external feedback: a chaotic system close to the quantum limit. Proceedings of SPIE, 2012, , .	0.8	0
42	Spatial dynamics of stepwise homogeneously pumped polariton condensates. Physical Review B, 2012, 86, .	1.1	8
43	Quantum-dot spinâ€“photon entanglement via frequency downconversion to telecom wavelength. Nature, 2012, 491, 421-425.	13.7	423
44	Site-controlled InP/GaInP quantum dots emitting single photons in the red spectral range. Applied Physics Letters, 2012, 100, .	1.5	17
45	Height-driven linear polarization of the surface emission from quantum dashes. Semiconductor Science and Technology, 2012, 27, 105022.	1.0	17
46	In(Ga)As/GaAs siteâ€controlled quantum dots with tailored morphology and high optical quality. Physica Status Solidi (A) Applications and Materials Science, 2012, 209, 2379-2386.	0.8	19
47	Quantum key distribution using quantum dot single-photon emitting diodes in the red and near infrared spectral range. New Journal of Physics, 2012, 14, 083001.	1.2	80
48	Optical properties of wellâ€isolated single InP/InGaP quantum dots. Physica Status Solidi C: Current Topics in Solid State Physics, 2012, 9, 1288-1291.	0.8	0
49	Power-law decay of the spatial correlation function in exciton-polariton condensates. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 6467-6472.	3.3	112
50	Site-controlled In(Ga)As quantum dots with narrow emission linewidth for integration into nanophotonic devices. , 2011, , .		0
51	Ultrafast coherent control and suppressed nuclear feedback of a single quantum dot hole qubit. Nature Physics, 2011, 7, 872-878.	6.5	205
52	Dynamical d-wave condensation of excitonâ€“polaritons in a two-dimensional square-lattice potential. Nature Physics, 2011, 7, 681-686.	6.5	134
53	Observing chaos for quantum-dot microlasers with external feedback. Nature Communications, 2011, 2, 366.	5.8	68
54	Extrapolation of the intensity autocorrelation function of a quantum-dot micropillar laser into the thermal emission regime. Journal of the Optical Society of America B: Optical Physics, 2011, 28, 1404.	0.9	10

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55	Single vortexâ€“antivortex pair in an exciton-polariton condensate. Nature Physics, 2011, 7, 129-133.	6.5	192
56	Nuclear feedback in a single electron-charged quantum dot under pulsed optical control. , 2011, , .		0
57	Properties of GaN Nanowires Grown by Molecular Beam Epitaxy. IEEE Journal of Selected Topics in Quantum Electronics, 2011, 17, 878-888.	1.9	104
58	Electrically Driven Quantum Dot Micropillar Light Sources. IEEE Journal of Selected Topics in Quantum Electronics, 2011, 17, 1670-1680.	1.9	17
59	Highly indistinguishable photons from a quantum dot in a microcavity. Physica Status Solidi (B): Basic Research, 2011, 248, 867-871.	0.7	8
60	Microcavity mode structure investigations with high spatial resolution. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 1239-1241.	0.8	2
61	Distributed feedback quantum cascade lasers at 13.8â€‚Î¼m on indium phosphide. Applied Physics Letters, 2011, 98, .	1.5	9
62	From polariton condensates to highly photonic quantum degenerate states of bosonic matter. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 1804-1809.	3.3	68
63	Non-resonant cavity-quantum dot coupling. Journal of Physics: Conference Series, 2010, 210, 012058.	0.3	0
64	Experimental approach to ultrafast optical spin echo of a single quantum dot electron spin. Proceedings of SPIE, 2010, , .	0.8	0
65	Direct comparison of catalyst-free and catalyst-induced GaN nanowires. Nano Research, 2010, 3, 528-536.	5.8	161
66	Numerical and Experimental Study of the Q Factor of High-Q Micropillar Cavities. IEEE Journal of Quantum Electronics, 2010, 46, 1470-1483.	1.0	37
67	Magnetic-field asymmetry of nonlinear mesoscopic transport in channels coupled to a single metallic gate. Physica E: Low-Dimensional Systems and Nanostructures, 2010, 42, 2055-2057.	1.3	1
68	Ultrafast optical spin echo in a single quantum dot. Nature Photonics, 2010, 4, 367-370.	15.6	298
69	Gain-Induced Trapping of Microcavity Exciton Polariton Condensates. Physical Review Letters, 2010, 104, 126403.	2.9	66
70	Ultrafast tracking of second-order photon correlations in the emission of quantum-dot microresonator lasers. Physical Review B, 2010, 81, .	1.1	38
71	Higher order coherence of exciton-polariton condensates. Physical Review B, 2010, 81, .	1.1	38
72	Pulsed Nuclear Pumping and Spin Diffusion in a Single Charged Quantum Dot. Physical Review Letters, 2010, 105, 107401.	2.9	51

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73	Tunable Long Wavelength (sim2.8 mum) GaInAsSbâ€“GaSb Quantum-Well Binary Superimposed Grating Lasers. IEEE Photonics Technology Letters, 2010, , .	1.3	1
74	Atomically flat single-crystalline gold nanostructures for plasmonic nanocircuitry. Nature Communications, 2010, 1, 150.	5.8	374
75	Mode Imaging and Selection in Strongly Coupled Nanoantennas. Nano Letters, 2010, 10, 2105-2110.	4.5	136
76	Widely tunable quantum cascade lasers with coupled cavities for gas detection. Applied Physics Letters, 2010, 97, .	1.5	30
77	Microthermography of diode lasers: The impact of light propagation on image formation. Journal of Applied Physics, 2009, 105, 014502.	1.1	16
78	Magnetic-field asymmetry of nonlinear transport in narrow channels with asymmetric hybrid confinement. Applied Physics Letters, 2009, 95, 062106.	1.5	8
79	Fourier Transformed Photoreflectance and Photoluminescence of Mid Infrared GaSb-Based Type II Quantum Wells. Applied Physics Express, 2009, 2, 126505.	1.1	50
80	Mastering matter at the nanoscale. Nanotechnology, 2009, 20, 430204-430204.	1.3	1
81	Mode-Controlled Tapered Lasers Based on Quantum Dots. IEEE Journal of Selected Topics in Quantum Electronics, 2009, 15, 780-784.	1.9	3
82	Short-Wavelength (760â€“920 nm) AlGaInAs Quantum Dot Lasers. IEEE Journal of Selected Topics in Quantum Electronics, 2009, 15, 792-798.	1.9	10
83	GaInNAs-Based High-Power and Tapered Laser Diodes for Pumping Applications. IEEE Journal of Selected Topics in Quantum Electronics, 2009, 15, 968-972.	1.9	11
84	Coherence length of high-Î²semiconductor microcavity lasers. Physica Status Solidi C: Current Topics in Solid State Physics, 2009, 6, 568-571.	0.8	0
85	Influence of arsenic flux on the annealing properties of GaInNAs quantum wells for long wavelength laser applications around 1.6Î¼m. Journal of Crystal Growth, 2009, 311, 1715-1718.	0.7	9
86	Polarization-independent active metamaterial for high-frequency terahertz modulation. Optics Express, 2009, 17, 819.	1.7	116
87	Design and Continuous-Wave Room-Temperature Performance of Ga(AlInAs)Sb DFB Lasers at 2.8 mum. IEEE Photonics Technology Letters, 2009, 21, 36-38.	1.3	1
88	Engineered quantum dot structures: fabrication and applications. Proceedings of SPIE, 2009, , .	0.8	0
89	Nonlinear Transport Properties of Electron Y-Branch Switches. Advances in Solid State Physics, 2009, , 305-316.	0.8	0
90	Frequency dependent Henry-factor measurements of quantum dot distributed feedback lasers. , 2008, , .		0

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91	Frequency-Dependent Linewidth Enhancement Factor of Quantum-Dot Lasers. IEEE Photonics Technology Letters, 2008, 20, 1736-1738.	1.3	14
92	High-Power Frequency Stabilized GaSb DBR Tapered Laser. IEEE Photonics Technology Letters, 2008, 20, 2162-2164.	1.3	5
93	Widely Tunable Photonic Crystal Coupled Cavity Lasers on GaSb. IEEE Photonics Technology Letters, 2008, 20, 1100-1102.	1.3	8
94	2-mum Mode-Locked Semiconductor Disk Laser Synchronously Pumped Using an Amplified Diode Laser. IEEE Photonics Technology Letters, 2008, 20, 1332-1334.	1.3	14
95	Scalable fabrication of optical resonators with embedded site-controlled quantum dots. Optics Letters, 2008, 33, 1759.	1.7	44
96	Ultrahigh-Q photonic crystal cavity created by modulating air hole radius of a waveguide. Optics Express, 2008, 16, 4605.	1.7	39
97	Elimination of cross-talk in waveguide intersections of triangular lattice photonic crystals. Optics Express, 2008, 16, 11399.	1.7	10
98	Optimization of photonic crystal cavity for chemical sensing. Optics Express, 2008, 16, 11709.	1.7	78
99	Gain Studies on Quantum-Dot Lasers With Temperature-Stable Emission Wavelength. IEEE Journal of Quantum Electronics, 2008, 44, 175-181.	1.0	12
100	2 watt 2 Î¼m Tm/Ho fiber laser system passively Q-switched by antimonide semiconductor saturable absorber. , 2008, , .		6
101	Glass supported ZnSe microring strongly coupled to a single CdSe quantum dot. Applied Physics Letters, 2008, 93, 151109.	1.5	8
102	Single mode emitting ridge waveguide quantum cascade lasers coupled to an active ring resonator filter. Applied Physics Letters, 2008, 93, 211106.	1.5	9
103	Time-Resolved Luminescence of Epitaxial InP Nanowires on (111)Si. , 2007, , .		0
104	Tapered quantum cascade lasers. Applied Physics Letters, 2007, 91, 181122.	1.5	35
105	Tapered Quantum Cascade Lasers. , 2007, , .		0
106	Photon Antibunching from a Single Quantum-Dot-Microcavity System in the Strong Coupling Regime. Physical Review Letters, 2007, 98, 117402.	2.9	309
107	Optical characterization of ZnSe/ZnMgSSe microdisks with embedded CdSe quantum dots. Physica Status Solidi C: Current Topics in Solid State Physics, 2007, 4, 3289-3296.	0.8	3
108	InAs/InP Quantum-Dash Lasers and Amplifiers. Proceedings of the IEEE, 2007, 95, 1779-1790.	16.4	76

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109	DFB Lasers With Deeply Etched Vertical Grating Based on InAsâ€“InP Quantum-Dash Structures. IEEE Photonics Technology Letters, 2007, 19, 264-266.	1.3	8
110	Widely Tunable Coupled Cavity Lasers at 1.9 mum on GaSb. IEEE Photonics Technology Letters, 2007, 19, 592-594.	1.3	10
111	Modal Analysis of Large Spot Size, Low Output Beam Divergence Quantum-Dot Lasers. IEEE Photonics Technology Letters, 2007, 19, 916-918.	1.3	7
112	High-Performance Short-Wavelength (sim760 nm) AlGaInAs Quantum-Dot Lasers. IEEE Photonics Technology Letters, 2007, 19, 1380-1382.	1.3	13
113	Quantum Cascade Microlasers With Two-Dimensional Photonic Crystal Reflectors. IEEE Photonics Technology Letters, 2007, 19, 1937-1939.	1.3	4
114	Superradiance of quantum dots. Nature Physics, 2007, 3, 106-110.	6.5	432
115	MICROCAVITIES WITH QUANTUM DOTS: WEAK AND STRONG COUPLING REGIMES. , 2007, , 115-134.		0
116	CdSe quantum dot microdisk laser. Applied Physics Letters, 2006, 89, 231104.	1.5	39
117	GaInAsSb/GaSb type-II distributed feedback lasers emitting in the 2.8 μm range. , 2006, , .		0
118	Photonic Crystal Based Active Optoelectronic Devices. , 2006, , 329-346.		1
119	Planar High Index-Contrast Photonic Crystals for Telecom Applications. , 2006, , 308-328.		6
120	Ultrahigh-quality photonic crystal cavity in GaAs. Optics Letters, 2006, 31, 1229.	1.7	42
121	Nanostructured semiconductors for optoelectronic applications. , 2006, , .		1
122	Recent advances in nanophotonicsâ€”From physics to devices. Current Applied Physics, 2006, 6, e166-e171.	1.1	1
123	Influence of the strain on the formation of GaInAs/GaAs quantum structures. Journal of Crystal Growth, 2006, 286, 6-10.	0.7	49
124	System performance of a modern hollow-core optical fiber coupled to a quantum cascade laser: transmission efficiency and relative intensity noise. , 2005, , .		1
125	Dynamical properties of quantum dash lasers. , 2005, , .		0
126	980-nm small-aperture tapered laser (1W CW, M2~3) and tapered arrays (>3W CW): comparison between GaInAs/(Al)GaAs quantum dot and quantum well structures. , 2005, , .		0

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127	Ultra-low noise over wide-bandwidth of 1.55 Î¼m InP-based quantum-dash Fabry-Perot lasers for microwave systems. , 2005, , .		1
128	GaAs/AlGaAs-Quantenkaskaden-Laser (GaAs/AlGaAs Quantum Cascade Lasers). TM Technisches Messen, 2005, 72, .	0.3	1
129	Codirectional couplers in GaAs-based planar photonic crystals. Applied Physics Letters, 2005, 86, 081108.	1.5	3
130	Optical properties of semiconductor quantum dots and pillar microcavities. AIP Conference Proceedings, 2005, , .	0.3	0
131	From single laser diodes to integrated active and passive optoelectronic components based on photonic crystals. , 2005, , .		0
132	High brightness GaInAs/(Al)GaAs quantum-dot tapered lasers at 980 nm with high wavelength stability. Applied Physics Letters, 2004, 84, 2238-2240.	1.5	19
133	Low-loss photonic crystal and monolithic InP integration: bands, bends, lasers, and filters. , 2004, 5360, 119.		4
134	High-brightness GaInAs/(Al)GaAs quantum dot tapered lasers at 980 nm with a high wavelength stability. , 2004, 5365, 60.		0
135	High-power and low-noise 1.55 Î¼m InP-based quantum dash lasers. , 2004, 5452, 22.		4
136	High-brightness (1 W with M2=2.9) GaInAs/(Al)GaAs index-guided quantum-dot tapered lasers at 980 nm with a high-wavelength stability. , 2004, 5452, 1.		1
137	Integration of active and passive photonic-crystal-based optoelectronic components. , 2004, , .		1
138	High-contrast planar photonic crystals. , 2004, , .		1
139	Technology and properties of photonic-crystal-based active and passive optoelectronic devices. , 2004, , .		0
140	Ballistic transport in nanoscale field effect transistors revealed by four-terminal DC characterization. Superlattices and Microstructures, 2003, 34, 271-275.	1.4	1
141	Recent advances in semiconductor quantum-dot lasers. Comptes Rendus Physique, 2003, 4, 611-619.	0.3	21
142	Switching light with light. Nature Materials, 2003, 2, 13-14.	13.3	25
143	Photonic crystal optical filter based on contra-directional waveguide coupling. Applied Physics Letters, 2003, 83, 5121-5123.	1.5	81
144	Two-dimensional photonic crystal coupled-defect laser diode. Applied Physics Letters, 2003, 82, 4-6.	1.5	134

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145	Preamplified planar microcoil on GaAs substrates for microspectroscopy. Review of Scientific Instruments, 2003, 74, 4855-4857.	0.6	17
146	Spatial photon trapping: tailoring the optical properties of semiconductor microcavities. Semiconductor Science and Technology, 2003, 18, S339-S350.	1.0	12
147	Transmission spectroscopy of photonic crystal based waveguides with resonant cavities. Journal of Applied Physics, 2002, 91, 4791-4794.	1.1	18
148	High Performance 1.3 Âµm Quantum-Dot Lasers. Japanese Journal of Applied Physics, 2002, 41, 1158-1161.	0.8	20
149	Photonic crystal tapers for ultracompact mode conversion. Optics Letters, 2001, 26, 1102.	1.7	120
150	Enhanced transmission through photonic-crystal-based bent waveguides by bend engineering. Applied Physics Letters, 2001, 79, 3579-3581.	1.5	41
151	Single-mode operation of coupled-cavity lasers based on two-dimensional photonic crystals. Applied Physics Letters, 2001, 79, 4091-4093.	1.5	32
152	Fabrication of quantum point contacts by imprint lithography and transport studies. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2000, 18, 3561.	1.6	33
153	Room Temperature Lasing at Blue Wavelengths in Gallium Nitride Microcavities. Science, 1999, 285, 1905-1906.	6.0	237
154	First-order gain-coupled (Ga,In)As/(Al,Ga)As distributed feedback lasers by focused ion beam implantation and in situ overgrowth. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 1995, 13, 2714.	1.6	6
155	Many-Body Effects in the Magnetoplasma of In0.13Ga0.87As/GaAs Quantum Wires. Japanese Journal of Applied Physics, 1995, 34, 4408-4410.	0.8	4
156	Optical Study of Intermixing in CdTe/CdMgTe Quantum Wells. Japanese Journal of Applied Physics, 1994, 33, L247-L249.	0.8	9
157	Strained InAs/AlxGa0.48 â^' xIn0.52As heterostructures: a tunable quantum well materials system for light emission from the near-IR to the mid-IR. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 1993, 21, 288-292.	1.7	0
158	Investigation of Random and Channeling Ar+Implantation-Induced Damage in Al(In)GaAs/GaAs Quantum Wells. Japanese Journal of Applied Physics, 1992, 31, 4428-4432.	0.8	4
159	Immersion Layer in Columnar Quantum Dash Structure as a Polarization Insensitive Light Emitter at 1.55 Âµm. Applied Physics Express, 0, 2, 061102.	1.1	6