Kathy LÃ¼dge

List of Publications by Year
in descending order

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161	2,697	186265	233421
papers	citations	28 h-index	45 g-index

170	170	170	1737
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Understanding Ground-State Quenching in Quantum-Dot Lasers. IEEE Journal of Quantum Electronics, 2015, 51, 1-11.	1.9	304
2	Quantum-Dot Lasersâ€"Desynchronized Nonlinear Dynamics of Electrons and Holes. IEEE Journal of Quantum Electronics, 2009, 45, 1396-1403.	1.9	107
3	Amplitude-phase coupling drives chimera states in globally coupled laser networks. Physical Review E, 2015, 91, 040901.	2.1	104
4	Delay-induced dynamics and jitter reduction of passively mode-locked semiconductor lasers subject to optical feedback. New Journal of Physics, 2012, 14, 113033.	2.9	83
5	Turn-on dynamics and modulation response in semiconductor quantum dot lasers. Physical Review B, 2008, 78, .	3.2	77
6	Cascading enables ultrafast gain recovery dynamics of quantum dot semiconductor optical amplifiers. Physical Review B, 2010, 82, .	3.2	59
7	Modeling quantum dot lasers with optical feedback: sensitivity of bifurcation scenarios. Physica Status Solidi (B): Basic Research, 2010, 247, 829-845.	1.5	58
8	Quantum coherence induces pulse shape modification in a semiconductor optical amplifier at room temperature. Nature Communications, 2013, 4, 2953.	12.8	56
9	Failure of the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î±</mml:mi></mml:math>factor in describing dynamical instabilities and chaos in quantum-dot lasers. Physical Review E, 2012, 86, 065201.	2.1	55
10	Optically injected quantum dot lasers: impact of nonlinear carrier lifetimes on frequency-locking dynamics. New Journal of Physics, 2012, 14, 053018.	2.9	53
11	Feedback and injection locking instabilities in quantum-dot lasers: a microscopically based bifurcation analysis. New Journal of Physics, 2013, 15, 093031.	2.9	53
12	Dynamics of a passively mode-locked semiconductor laser subject to dual-cavity optical feedback. Physical Review E, 2016, 93, 022205.	2.1	48
13	COMPLEX DYNAMICS OF SEMICONDUCTOR QUANTUM DOT LASERS SUBJECT TO DELAYED OPTICAL FEEDBACK. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2012, 22, 1250246.	1.7	47
14	Mode-switching induced super-thermal bunching in quantum-dot microlasers. New Journal of Physics, 2016, 18, 063011.	2.9	45
15	Impact of carrier-carrier scattering and carrier heating on pulse train dynamics of quantum dot semiconductor optical amplifiers. Applied Physics Letters, 2011, 99, .	3.3	44
16	Amplitude-phase coupling and chirp in quantum-dot lasers: influence of charge carrier scattering dynamics. Optics Express, 2014, 22, 4867.	3.4	40
17	ErAs interlayers for limiting interfacial reactions in Fe/GaAs(100) heterostructures. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2002, 20, 1600.	1.6	38
18	Enhanced Dynamic Performance of Quantum Dot Semiconductor Lasers Operating on the Excited State. IEEE Journal of Quantum Electronics, 2014, 50, 1-9.	1.9	38

#	Article	IF	Citations
19	Experimental demonstration of change of dynamical properties of a passively mode-locked semiconductor laser subject to dual optical feedback by dual full delay-range tuning. Optics Express, 2016, 24, 14301.	3.4	38
20	Large-Signal Response of Semiconductor Quantum-Dot Lasers. IEEE Journal of Quantum Electronics, 2010, 46, 1755-1762.	1.9	37
21	Timing jitter of passively-mode-locked semiconductor lasers subject to optical feedback: A semi-analytic approach. Physical Review A, 2015, 92, .	2.5	36
22	Optical anisotropy and magneto-optical properties of Ni on preoxidizedCu(110). Physical Review B, 2006, 73, .	3.2	34
23	Analytical approach to modulation properties of quantum dot lasers. Journal of Applied Physics, 2011, 109, 103112.	2.5	34
24	Performance boost of time-delay reservoir computing by non-resonant clock cycle. Neural Networks, 2020, 124, 158-169.	5.9	34
25	Role of delay-times in delay-based photonic reservoir computing [Invited]. Optical Materials Express, 2022, 12, 1214.	3.0	34
26	Nonlinear dynamics of doped semiconductor quantum dot lasers. European Physical Journal D, 2010, 58, 167-174.	1.3	31
27	Dynamics of Quantum Dot Lasers. Springer Theses, 2014, , .	0.1	31
28	Clarification of theGaP(001)(2Ã—4)Ga-rich reconstruction by scanning tunneling microscopy andab initiotheory. Physical Review B, 2000, 62, 11046-11049.	3.2	30
29	Small chimera states without multistability in a globally delay-coupled network of four lasers. Physical Review E, 2016, 94, 042204.	2.1	30
30	Influencing modulation properties of quantum-dot semiconductor lasers by carrier lifetime engineering. Applied Physics Letters, 2012, 101, 131107.	3.3	29
31	Deep time-delay reservoir computing: Dynamics and memory capacity. Chaos, 2020, 30, 093124.	2.5	29
32	Influence of carrier lifetimes on the dynamical behavior of quantum-dot lasers subject to optical feedback. Physical Review E, 2012, 86, 046201.	2.1	26
33	Ultra-Short Pulse Generation in a Three Section Tapered Passively Mode-Locked Quantum-Dot Semiconductor Laser. Scientific Reports, 2019, 9, 1783.	3.3	26
34	Feedback-induced steady-state light bunching above the lasing threshold. Physical Review A, 2014, 89, .	2.5	25
35	Mutual coupling and synchronization of optically coupled quantum-dot micropillar lasers at ultra-low light levels. Nature Communications, 2019, 10, 1539.	12.8	25
36	Structure and interface composition of Co layers grown on As-rich GaAs(001) c(4Ã—4) surfaces. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2002, 20, 1591.	1.6	24

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37	Ultrafast gain recovery and large nonlinear optical response in submonolayer quantum dots. Physical Review B, 2016, 94, .	3.2	24
38	Multiplexed networks: reservoir computing with virtual and real nodes. Journal of Physics Communications, 2018, 2, 085007.	1.2	24
39	Surface structure of ordered InGaP(001): The(2Ã—4)reconstruction. Physical Review B, 2000, 62, 12601-12604.	3.2	23
40	Optimization of Timing Jitter Reduction by Optical Feedback for a Passively Mode-Locked Laser. IEEE Photonics Journal, 2014, 6, 1-14.	2.0	22
41	How carrier memory enters the Haus master equation of mode-locking. Optics Letters, 2020, 45, 6210.	3.3	22
42	Growth phases and optical anisotropy of Co on preoxidized Cu(110). Physical Review B, 2001, 64, .	3.2	21
43	Nonlinear gain dynamics of quantum dot optical amplifiers. Semiconductor Science and Technology, 2011, 26, 014008.	2.0	21
44	Optical injection enables coherence resonance in quantum-dot lasers. Europhysics Letters, 2013, 103, 14002.	2.0	21
45	Influence of Noise on the Signal Quality of Quantum-Dot Semiconductor Optical Amplifiers. IEEE Journal of Selected Topics in Quantum Electronics, 2013, 19, 1900106-1900106.	2.9	20
46	Mode-locking Instabilities for High-Gain Semiconductor Disk Lasers Based on Active Submonolayer Quantum Dots. Physical Review Applied, 2018, 10, .	3.8	19
47	Bistability in two simple symmetrically coupled oscillators with symmetry-broken amplitude- and phase-locking. Chaos, 2018, 28, 063114.	2.5	19
48	Reservoir Computing Using Laser Networks. IEEE Journal of Selected Topics in Quantum Electronics, 2020, 26, 1-8.	2.9	19
49	Strong amplitude-phase coupling in submonolayer quantum dots. Applied Physics Letters, 2016, 109, 201102.	3.3	18
50	Injection Locking of Quantum-Dot Microlasers Operating in the Few-Photon Regime. Physical Review Applied, 2016, 6, .	3.8	18
51	Multipulse dynamics of a passively mode-locked semiconductor laser with delayed optical feedback. Chaos, 2017, 27, 114301.	2.5	18
52	Pulse Cluster Dynamics in Passively Mode-Locked Semiconductor Vertical-External-Cavity Surface-Emitting Lasers. Physical Review Applied, 2019, 11, .	3.8	18
53	Tailoring the mode-switching dynamics in quantum-dot micropillar lasers via time-delayed optical feedback. Optics Express, 2018, 26, 22457.	3.4	17
54	Four-Wave Mixing in Quantum-Dot Semiconductor Optical Amplifiers: A Detailed Analysis of the Nonlinear Effects. IEEE Journal of Selected Topics in Quantum Electronics, 2017, 23, 1-12.	2.9	16

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55	On-chip optoelectronic feedback in a micropillar laser-detector assembly. Optica, 2017, 4, 303.	9.3	16
56	Reservoir Computing with Delayed Input for Fast and Easy Optimisation. Entropy, 2021, 23, 1560.	2.2	16
57	Analytic Characterization of the Dynamic Regimes of Quantum-Dot Lasers. Photonics, 2015, 2, 402-413.	2.0	15
58	Stability of Optically Injected Twoâ€State Quantumâ€Dot Lasers. Annalen Der Physik, 2017, 529, 1600279.	2.4	15
59	Insight into delay based reservoir computing via eigenvalue analysis. JPhys Photonics, 2021, 3, 024011.	4.6	15
60	Multipulse instabilities of a femtosecond SESAM-modelocked VECSEL. Optics Express, 2018, 26, 21872.	3.4	15
61	Connecting reservoir computing with statistical forecasting and deep neural networks. Nature Communications, 2022, 13, 227.	12.8	15
62	Ground-state modulation-enhancement by two-state lasing in quantum-dot laser devices. Applied Physics Letters, 2015, 106, .	3.3	14
63	Suppression of Noise-Induced Modulations in Multidelay Systems. Physical Review Letters, 2016, 117, 154101.	7.8	14
64	Long-term mutual phase locking of picosecond pulse pairs generated by a semiconductor nanowire laser. Nature Communications, 2017, 8, 15521.	12.8	14
65	Limitations of the Recall Capabilities in Delay-Based Reservoir Computing Systems. Cognitive Computation, 2023, 15, 1419-1426.	5.2	14
66	First-principles study of InP and GaP(001) surfaces. Computational Materials Science, 2001, 22, 32-37.	3.0	13
67	Stability of quantum-dot excited-state laser emission under simultaneous ground-state perturbation. Applied Physics Letters, 2014, 105, 191105.	3.3	13
68	Manipulating coherence resonance in a quantum dot semiconductor laser via electrical pumping. Optics Express, 2014, 22, 13288.	3.4	13
69	First-principles study of (2Ã—1) and (2Ã—2) phosphorus-rich InP(001) surfaces. Surface Science, 2000, 464, 272-282.	1.9	12
70	Many-body and nonequilibrium effects on relaxation oscillations in a quantum-dot microcavity laser. Applied Physics Letters, 2010, 97, 111102.	3.3	12
71	Linewidth Rebroadening in Quantum Dot Semiconductor Lasers. IEEE Journal of Selected Topics in Quantum Electronics, 2017, 23, 1-10.	2.9	11
72	Stochastic polarization switching induced by optical injection in bimodal quantum-dot micropillar lasers. Optics Express, 2019, 27, 28816.	3.4	11

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73	Many-body effects and self-contained phase dynamics in an optically injected quantum-dot laser. , 2012, , .		10
74	Modulation response of nanolasers: what rate equation approaches miss. Optical and Quantum Electronics, 2016, 48, 1.	3.3	10
75	Metallic nanostructures on Co/GaAs(001)(4Ã—2) surfaces. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2004, 22, 2008.	1.6	8
76	Pump-probe quantum state tomography in a semiconductor optical amplifier. Optics Express, 2014, 22, 32520.	3.4	8
77	Dynamic phase response and amplitude-phase coupling of self-assembled semiconductor quantum dots. Applied Physics Letters, 2017, 110, 241102.	3.3	8
78	Rabi-oscillation-enhanced frequency conversion in quantum-dot semiconductor optical amplifiers. Optical and Quantum Electronics, 2018, 50, 1.	3.3	8
79	Atomic structure and composition of the (2Ã—4) reconstruction of InGaP(001). Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2000, 18, 2210.	1.6	7
80	Ultra-Broadband Bidirectional Dual-Band Quantum-Dot Semiconductor Optical Amplifier. , 2015, , .		7
81	Class-C semiconductor lasers with time-delayed optical feedback. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20180124.	3.4	7
82	Temperature dependent two-state lasing in quantum dot lasers. , 2011, , .		6
83	Integrated quantum-dot laser devices: modulation stability with electro-optic modulator. Optical and Quantum Electronics, 2014, 46, 1337-1344.	3.3	6
84	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Q</mml:mi></mml:mrow></mml:math> -switched pulsing lasers subject to delayed feedback: A model comparison. Physical Review A, 2018, 98, .	2.5	6
85	Anticipation-induced social tipping: can the environment be stabilised by social dynamics?. European Physical Journal: Special Topics, 2021, 230, 3189-3199.	2.6	6
86	Optical feedback induced oscillation bursts in two-state quantum-dot lasers. Optics Express, 2020, 28, 3361.	3.4	6
87	Theory of single quantum dot lasers: Pauli-blocking-enhanced anti-bunching. Semiconductor Science and Technology, 2011, 26, 014015.	2.0	5
88	Phase-Incoherent Photonic Molecules in V-Shaped Mode-Locked Vertical-External-Cavity Surface-Emitting Semiconductor Lasers. Physical Review Applied, 2020, 14, .	3.8	5
89	Feedback-induced locking in semiconductor lasers with strong amplitude-phase coupling. Physical Review A, 2021, 103, .	2.5	5
90	Time-domain model of quantum-dot semiconductor optical amplifiers for wideband optical signals. Optics Express, 2012, 20, 27265.	3.4	4

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91	Passively mode-locked laser coupled to two external feedback cavities. Proceedings of SPIE, 2015, , .	0.8	4
92	Self-assembled CoAs nanostructures. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2003, 21, 1760.	1.6	3
93	Dynamic many-body and nonequilibrium effects in a quantum dot microcavity laser. , 2010, , .		3
94	Maxwell-Bloch approach to four-wave mixing in quantum dot semiconductor optical amplifiers. , 2011, , .		3
95	Broadband Semiconductor Light Sources Operating at 1060 nm Based on InAs:Sb/GaAs Submonolayer Quantum Dots. IEEE Journal of Selected Topics in Quantum Electronics, 2019, 25, 1-10.	2.9	3
96	Efficient timing jitter simulation for passively mode-locked semiconductor lasers. Applied Physics Letters, 2021, 118, 011104.	3.3	3
97	Chalcogenide negative curvature hollow-core photonic crystal fibers with low loss and low power ratio in the glass. , 2014, , .		3
98	Cobalt growth on InGaP(001)(2Ã—4): Interface formation. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2003, 21, 1749.	1.6	2
99	Microscopic versus α-factor descriptions of dynamics in quantum-dot lasers. , 2013, , .		2
100	Timing jitter and repetition rate control of a passively mode-locked semiconductor laser by dual optical feedback. , 2016, , .		2
101	Computing with a camera. Nature Machine Intelligence, 2019, 1, 551-552.	16.0	2
102	Temperature dependent linewidth rebroadening in quantum dot semiconductor lasers. Journal Physics D: Applied Physics, 2020, 53, 235106.	2.8	2
103	Dynamic signatures of mode competition in optically injected high-Î² lasers. New Journal of Physics, 2020, 22, 073052.	2.9	2
104	Laser Dynamics and Delayed Feedback. , 2020, , 1-18.		2
105	Current instabilities in resonant tunneling quantum dot structures. AIP Conference Proceedings, 2007, , .	0.4	1
106	Decoupled electron and hole dynamics in the turn-on behavior of quantum-dot lasers. , 2008, , .		1
107	Publisher's Note: Turn-on dynamics and modulation response in semiconductor quantum dot lasers [Phys. Rev. B78, 035316 (2008)]. Physical Review B, 2009, 79, .	3.2	1
108	Nonlinear Dynamics of Quantum Dot Lasers. , 2009, , .		1

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109	Impact of nonlinear carrier-carrier scattering on gain dynamics and nonlinear optical properties of quantum dot semiconductor optical amplifiers. , 2011, , .		1
110	Evidence of macroscopic coherence at room temperature: Rabi oscillation induced pulse break-up in a quantum dot amplifier. , 2013, , .		1
111	Ground and excited-state performance of an quantum-dot semiconductor amplifier. , 2014, , .		1
112	Laserlicht auf den Punkt gebracht. Physik in Unserer Zeit, 2014, 45, 140-146.	0.0	1
113	Corrections to â€œEnhanced Dynamic Performance of Quantum Dot Semiconductor Lasers Operating on the Excited Stateâ€•[Sep 14 723-731]. IEEE Journal of Quantum Electronics, 2014, 50, 1072-1072.	1.9	1
114	Increasing stability by two-state lasing in quantum-dot lasers with optical injection. , 2017, , .		1
115	Submonolayer quantum-dot lasers. Proceedings of SPIE, 2017, , .	0.8	1
116	Phase sensitivity of mode-locking with optical feedback. , 2017, , .		1
117	492 fs Short Optical Pulse Generation with 9.2 W Peak Power by a Monolithic Edge-Emitting Quantum Dot Laser. , 2018, , .		1
118	Semiconductor mode-locked laser with external feedback: emergence of multi-frequency pulse trains with an increasing number of modes. European Physical Journal B, 2019, 92, 1.	1.5	1
119	Stabilizing nanolasers via polarization lifetime tuning. Scientific Reports, 2021, 11, 18558.	3.3	1
120	Collective Coherence Resonance in Networks of Optical Neurons. Physica Status Solidi (B): Basic Research, 0, , 2100345.	1.5	1
121	Deterministic and stochastic effects in spreading dynamics: A case study of bovine viral diarrhea. Chaos, 2021, 31, 093129.	2.5	1
122	Quantum-Dot Semiconductor Optical Amplifiers. , 2017, , 715-746.		1
123	Laser Dynamics and Delayed Feedback. , 2020, , 31-47.		1
124	MBE growth and interfacial reaction control of ferromagnetic metal/GaAs heterostructures. , 0, , .		0
125	Nonlinear dynamics of quantum dot lasers and amplifiers. , 2008, , .		0
126	Analytical dissection of a model for quantum-dot lasers. , 2009, , .		0

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127	The Role of Decoupled Electron and Hole Dynamics in the Turn-on Behavior of Semiconductor Quantum-Dot Lasers. , 2010, , .		0
128	Nonlinear dynamics of a quantum-dot laser coupled to an electro-optic modulator. , 2013, , .		0
129	Nonequilibrium laser dynamics of quantum-dot lasers with optical feedback and injection. , 2013, , .		0
130	Amplitude Modulation and Frequency Chirp of an Injection-Locked Quantum Dash Semiconductor Laser. , 2014, , .		0
131	Improved modeling and dynamical analyses for semiconductor quantum-dot based lasers in nanophotonics applications. , 2014, , .		0
132	Phase-amplitude coupling of optically-injected nanostructured semiconductor lasers. , 2014, , .		0
133	Passively mode-locked lasers subject to optical feedback: The role of amplitude-phase coupling. , 2014, , .		0
134	Predicting modes of operation in quantum dot mode-locked lasers using a delay differential equation model. , 2014, , .		0
135	Impact of amplitude-phase coupling on opticalfeedback induced timing jitter reduction in passively mode-locked lasers. , 2014, , .		0
136	Modulation response of nanolasers: What rate equation approaches miss. , 2015, , .		0
137	Advanced control schemes for passively mode-locked lasers: Coupled lasers and dual-feedback approaches. , 2015, , .		0
138	Tracking the Ultrafast Light-Matter Interaction in Population-Inverted Quantum Dots via Quantum State Tomography. , 2015, , .		0
139	Injection Locking of High-Î² Quantum Dot Microlasers. , 2016, , .		0
140	Pulse train stability of multi-gigahertz passively mode-locked semiconductor lasers. , 2016, , .		0
141	Pulse train stability of passively mode-locked semiconductor lasers. Proceedings of SPIE, 2017, , .	0.8	0
142	CW and ultrafast properties of GaAs-AlGaAs core-shell nanowire lasers on silicon (Conference) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 142		0
143	Bistability in optically injected two-state quantum dot lasers. , 2017, , .		0
144	Four-wave mixing and rabi oscillations in quantum-dot semiconductor optical amplifiers. , 2017, , .		0

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145	High-Î² quantum dot-microlasers subject to time-delayed optical feedback. , 2017, , .		0
146	Ultrafast Semiconductor Lasers: Pulse Generation and Stabilization. , 2018, , .		0
147	Photon Statistics of Lasers Under External Perturbations: Impact of Nonlinear Dynamics. , 2019, , .		0
148	Pulse Shaping in Multi-Section Tapered Semiconductor Quantum-Dot Passively Mode-Locked Lasers. , 2019, , .		0
149	Tailoring Localization Features in Passively Mode-Locked Lasers with V-Shaped Cavity Geometry. , 2019, , .		0
150	How carrier memory enters the Haus master equation of mode-locking. , 2021, , .		0
151	Dynamic response of quantum dot lasers - influence of nonlinear electron-electron scattering. , 2008, , .		0
152	Pulse Shaping and Break-Up by Quantum-Coherent Effects in Quantum-Dot Amplifiers at Room Temperature. , 2013, , .		0
153	High Performance Excited-State Nanostructure Lasersâ€"Modulation Response, Frequency Chirp and Linewidth Enhancement Factor. , 2014, , .		0
154	Carrier relaxation pathways in submonolayer quantum dots. , 2016, , .		0
155	Exploiting Multistability to Stabilize Chimera States in All-to-All Coupled Laser Networks. Understanding Complex Systems, 2016, , 355-374.	0.6	0
156	Passive mode-locking in a V-shaped cavity. , 2018, , .		0
157	Reservoir computing with delay in structured networks. , 2018, , .		0
158	Laser networks for reservoir computing: How can we optimize the performance?. , 2019, , .		0
159	Heterodimensionally confined carriers in III-V semiconductor nanostructures in multidimensional spectroscopy. , 2019, , .		0
160	Role of Mixed-dimensional Excitons in the Phase Dynamics of Semiconductor Optical Lasers and Amplifiers. , 2019, , .		0
161	Bifurcation scenario leading to multiple pulse emission in VECSELs. , 2019, , .		0