

Jan Danckaert

List of Publications by Year in descending order

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120
papers

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172207

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122
all docs

122
docs citations

122
times ranked

1525
citing authors

#	ARTICLE	IF	CITATIONS
1	Delay-Based Reservoir Computing: Noise Effects in a Combined Analog and Digital Implementation. IEEE Transactions on Neural Networks and Learning Systems, 2015, 26, 388-393.	7.2	117
2	Fast photonic information processing using semiconductor lasers with delayed optical feedback: Role of phase dynamics. Optics Express, 2014, 22, 8672.	1.7	110
3	Simultaneous Computation of Two Independent Tasks Using Reservoir Computing Based on a Single Photonic Nonlinear Node With Optical Feedback. IEEE Transactions on Neural Networks and Learning Systems, 2015, 26, 3301-3307.	7.2	91
4	Fast random bits generation based on a single chaotic semiconductor ring laser. Optics Express, 2012, 20, 28603.	1.7	90
5	Constructing optimized binary masks for reservoir computing with delay systems. Scientific Reports, 2014, 4, 3629.	1.6	85
6	Loss of time-delay signature in chaotic semiconductor ring lasers. Optics Letters, 2012, 37, 2541.	1.7	78
7	Dispersive optical bistability in stratified structures. Physical Review B, 1991, 44, 8214-8225.	1.1	68
8	Controlling Cherenkov Radiation with Transformation-Optical Metamaterials. Physical Review Letters, 2014, 113, 167402.	2.9	64
9	Integrated culturing, modeling and transcriptomics uncovers complex interactions and emergent behavior in a three-species synthetic gut community. ELife, 2018, 7, .	2.8	62
10	Dissipative chaos, Shilnikov chaos and bursting oscillations in a three-dimensional autonomous system: theory and electronic implementation. Nonlinear Dynamics, 2013, 73, 1111-1123.	2.7	55
11	A General Model for Toxin-Antitoxin Module Dynamics Can Explain Persister Cell Formation in E. coli. PLoS Computational Biology, 2013, 9, e1003190.	1.5	54
12	Excitability in optical systems close to π -symmetry. Physics Letters, Section A: General, Atomic and Solid State Physics, 2010, 374, 739-743.	0.9	49
13	Impact of nonlocal interactions in dissipative systems: Towards minimal-sized localized structures. Physical Review A, 2007, 75, .	1.0	48
14	Polarization-mode hopping in single-mode vertical-cavity surface-emitting lasers: Theory and experiment. Physical Review A, 2003, 68, .	1.0	44
15	Square-wave oscillations in semiconductor ring lasers with delayed optical feedback. Optics Express, 2012, 20, 22503.	1.7	43
16	Designing an efficient rectifying cut-wire metasurface for electromagnetic energy harvesting. Applied Physics Letters, 2017, 110, .	1.5	43
17	Reducing the phase sensitivity of laser-based optical reservoir computing systems. Optics Express, 2016, 24, 1238.	1.7	42
18	Polarization Message Encoding through Vectorial Chaos Synchronization in Vertical-Cavity Surface-Emitting Lasers. Physical Review Letters, 2003, 90, 113901.	2.9	40

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19	Strongly asymmetric square waves in a time-delayed system. <i>Physical Review E</i> , 2012, 86, 055201.	0.8	40
20	Semiconductor Ring Laser With On-Chip Filtered Optical Feedback for Discrete Wavelength Tuning. <i>IEEE Journal of Quantum Electronics</i> , 2012, 48, 129-136.	1.0	39
21	Slow-fast dynamics of a time-delayed electro-optic oscillator. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2013, 371, 20120459.	1.6	39
22	Storing 2 Bits of Information in a Novel Single Semiconductor Microring Laser Memory Cell. <i>IEEE Photonics Technology Letters</i> , 2008, 20, 1228-1230.	1.3	38
23	Dissipative structures in left-handed material cavity optics. <i>Chaos</i> , 2007, 17, 037116.	1.0	35
24	Semiconductor ring laser subject to delayed optical feedback: Bifurcations and stability. <i>Communications in Nonlinear Science and Numerical Simulation</i> , 2012, 17, 4767-4779.	1.7	33
25	Discretely Tunable Laser Based on Filtered Feedback for Telecommunication Applications. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2010, 16, 1405-1412.	1.9	32
26	Dynamical instabilities of dissipative solitons in nonlinear optical cavities with nonlocal materials. <i>Physical Review A</i> , 2008, 77, .	1.0	31
27	Chaotic semiconductor ring lasers subject to optical feedback: Applications to chaos-based communications. <i>Optics Communications</i> , 2013, 286, 265-272.	1.0	31
28	Frequency response of current-driven polarization modulation in vertical-cavity surface-emitting lasers. <i>Applied Physics Letters</i> , 2002, 80, 2248-2250.	1.5	30
29	Controlled multiwavelength emission using semiconductor ring lasers with on-chip filtered optical feedback. <i>Optics Letters</i> , 2013, 38, 2608.	1.7	30
30	Rate equations for vertical-cavity surface-emitting lasers. <i>Physical Review A</i> , 2003, 67, .	1.0	29
31	Ghost stochastic resonance in vertical-cavity surface-emitting lasers: Experiment and theory. <i>Physical Review E</i> , 2005, 72, 016113.	0.8	29
32	Integrated Small-Sized Semiconductor Ring Laser With Novel Retro-Reflector Cavity. <i>IEEE Photonics Technology Letters</i> , 2008, 20, 99-101.	1.3	27
33	Simple Two-Transistor Single-Supply Resistor-Capacitor Chaotic Oscillator. <i>IEEE Transactions on Circuits and Systems II: Express Briefs</i> , 2015, 62, 891-895.	2.2	27
34	Bistability in a system of two species interacting through mutualism as well as competition: Chemostat vs. Lotka-Volterra equations. <i>PLoS ONE</i> , 2018, 13, e0197462.	1.1	27
35	Real-time Audio Processing with a Cascade of Discrete-Time Delay Line-Based Reservoir Computers. <i>Cognitive Computation</i> , 2017, 9, 315-326.	3.6	24
36	Wavelength Switching Speed in Semiconductor Ring Lasers With On-Chip Filtered Optical Feedback. <i>IEEE Photonics Technology Letters</i> , 2014, 26, 520-523.	1.3	23

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37	Digitally tunable dual wavelength emission from semiconductor ring lasers with filtered optical feedback. <i>Laser Physics Letters</i> , 2013, 10, 075804.	0.6	21
38	Low-Frequency Fluctuations in Semiconductor Ring Lasers With Optical Feedback. <i>IEEE Journal of Quantum Electronics</i> , 2013, 49, 790-797.	1.0	20
39	Self-consistent stationary description of a nonlinear fabry-perot. <i>Optics Communications</i> , 1989, 71, 317-322.	1.0	19
40	The effects of nonlinear gain on the stability of semi-degenerate two-mode semiconductor lasers: a case study on VCSELs. <i>Optics Communications</i> , 2005, 248, 527-534.	1.0	19
41	Direct modulation of semiconductor ring lasers: numerical and asymptotic analysis. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2012, 29, 1983.	0.9	18
42	All-optical controlled switching between time-periodic square waves in diode lasers with delayed feedback. <i>Optics Letters</i> , 2014, 39, 6098.	1.7	18
43	Relaxation and square-wave oscillations in a semiconductor laser with polarization rotated optical feedback. <i>Optics Express</i> , 2014, 22, 6905.	1.7	18
44	Optical injection in semiconductor ring lasers: backfire dynamics. <i>Optics Express</i> , 2008, 16, 10968.	1.7	17
45	Transforming two-dimensional guided light using nonmagnetic metamaterial waveguides. <i>Physical Review B</i> , 2016, 93, .	1.1	16
46	Effect of External Optical Feedback on Tunable Micro-Ring Lasers Using On-Chip Filtered Feedback. <i>IEEE Photonics Technology Letters</i> , 2016, 28, 959-962.	1.3	15
47	Fast phase response and chaos bandwidth enhancement in semiconductor lasers subject to optical feedback and injection. <i>Optics Letters</i> , 2014, 39, 5945.	1.7	13
48	Analytical and experimental study of two delay-coupled excitable units. <i>Physical Review E</i> , 2014, 89, 012908.	0.8	13
49	Injection Locking and Switching Operations of a Novel Retro-Reflector-Cavity-Based Semiconductor Micro-Ring Laser. <i>IEEE Photonics Technology Letters</i> , 2008, 20, 1673-1675.	1.3	12
50	Theoretical analysis of semiconductor ring lasers with short and long time-delayed optoelectronic and incoherent feedback. <i>Optics Communications</i> , 2015, 341, 147-154.	1.0	12
51	<title>Polarization switching and modulation dynamics in gain- and index-guided VCSELs</title>. , 2000, , .		11
52	Stochastic resonance in vertical-cavity surface-emitting lasers based on a multiple time-scale analysis. <i>Physical Review E</i> , 2003, 67, 056112.	0.8	11
53	Interplay of Current Noise and Delayed Optical Feedback on the Dynamics of Semiconductor Lasers. <i>IEEE Journal of Quantum Electronics</i> , 2011, 47, 368-374.	1.0	11
54	Transformation optics for surface phenomena: Engineering the Goos-HÄnchen effect. <i>Physical Review B</i> , 2017, 95, .	1.1	11

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55	Semiconductor ring laser with filtered optical feedback: traveling wave description and experimental validation. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2018, 35, 380.	0.9	10
56	Analytical approximation for the quantum-well gain and refractive-index spectra of vertical-cavity surface-emitting lasers including the effect of uniaxial planar stress. <i>Physical Review A</i> , 2005, 71, .	1.0	8
57	Propagation of spatially partially coherent emission from a vertical-cavity surface-emitting laser. <i>Optics Letters</i> , 2006, 31, 1178.	1.7	8
58	Linewidth Enhancement Factor of Semiconductor Lasers: Results from Round-Robin Measurements in COST 288. , 2007, , .		8
59	Nonlinear lattice model for spatially guided solitons in nonlinear photonic crystals. <i>Optics Express</i> , 2005, 13, 1544.	1.7	7
60	Polarization behavior of vertical-cavity surface-emitting lasers under the influence of in-plane anisotropic strain. , 2002, 4649, 281.		6
61	Influence of current noise on the relaxation oscillation dynamics of semiconductor lasers. <i>Applied Physics Letters</i> , 2006, 88, 071107.	1.5	6
62	Polarization behavior and mode structure of vertical-cavity surface-emitting lasers with elliptical surface relief. , 2003, , .		5
63	Waveguiding effects in self-pulsing vertical-cavity surface-emitting lasers. <i>Optics Letters</i> , 2004, 29, 53.	1.7	5
64	Mitigating optical singularities in coordinate-based metamaterial waveguides. <i>Physical Review B</i> , 2017, 95, .	1.1	5
65	Polarization switching in Nd:YAG lasers by means of modulating the pump polarization. , 2006, , .		4
66	Synchronization and symmetry breaking of delay-coupled oscillators: on the role of phase and amplitude instabilities. , 2010, , .		4
67	Error-Free 10-Gb/s All-Optical Switching Based on a Bidirectional SRL With Miniaturized Retro-Reflector Cavity. <i>IEEE Photonics Technology Letters</i> , 2010, 22, 1805-1807.	1.3	4
68	Computational Methods to Model Persistence. <i>Methods in Molecular Biology</i> , 2016, 1333, 207-240.	0.4	4
69	Stochastic polarization dynamics in vertical-cavity surface-emitting lasers described by simple rate equations. , 2001, , .		3
70	Polarization switching dynamics in single-mode VCSELs. , 2001, 4286, 34.		3
71	The effect of delayed optical feedback on semiconductor ring lasers. , 2007, , .		3
72	In-plane strain modification of polarization behavior of vertical-cavity surface-emitting lasers. , 2001, 4286, 55.		2

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73	Round-Robin Measurements of Linewidth Enhancement Factor of Semiconductor Lasers in COST 288 Action. , 2007, , .		2
74	Delayed polarization dynamics inNd ³⁺ -doped yttrium-aluminum-garnet lasers. Physical Review A, 2008, 77, .	1.0	2
75	Experimental and numerical study of square wave oscillations due to asymmetric optical feedback in semiconductor ring lasers. , 2012, , .		2
76	Frequency response of current modulation induced polarization switching in VCSELs. , 2002, 4649, 245.		1
77	Modulation frequency response of a bistable system with noise. Physical Review E, 2004, 70, 046214.	0.8	1
78	Time scales of polarization switching in different types of VCSELs. , 2004, 5452, 433.		1
79	Nonmodal emission characteristics of broad-area vertical-cavity surface-emitting lasers. , 2006, 6184, 313.		1
80	A Novel Semiconductor Ring Laser device Aimed for All-optical Signal processing. , 2008, , .		1
81	High-speed integrated semiconductor micro-ring lasers with efficient off-axis parabolic reflectors. , 2008, , .		1
82	Delay signature concealment in chaotic semiconductor ring lasers. , 2014, , .		1
83	Delay-based reservoir computing using semiconductor ring lasers. Proceedings of SPIE, 2014, , .	0.8	1
84	Semiconductor ring lasers subject to both on-chip filtered optical feedback and external conventional optical feedback. Proceedings of SPIE, 2016, , .	0.8	1
85	Dynamics of semiconductor microring lasers subject to on-chip filtered optical feedback. , 2016, , .		1
86	Transformation optics approach for Goos-Hänchen shift enhancement at metamaterial interfaces. , 2016, , .		1
87	Multirhythmicity for a Time-Delayed FitzHugh-Nagumo System with Threshold Nonlinearity. Understanding Complex Systems, 2016, , 337-354.	0.3	1
88	Monostable multivibrators as novel artificial neurons. Neural Networks, 2018, 108, 224-239.	3.3	1
89	Real-time Audio Processing with a Cascade of Discrete-Time Delay Line-Based Reservoir Computers. , 2017, 9, 315.		1
90	<title>Novel polarization sensitive optoelectronic switching device for optical information processing</title>. , 1996, , .		0

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91	Vectorial chaos synchronization and polarization encoding in self-pulsating VCSELs. , 2002, 4646, 227.		0
92	Comparison of thermal and polarization switching frequency response in VCSELs. , 2003, 4942, 72.		0
93	Nonlinear lattice model for self-localized waveguides in nonlinear photonic crystals. , 2005, , .		0
94	Polarization switching in vertical-cavity surface-emitting lasers: the effects of stress, temperature and spin flips. , 2006, 6184, 620.		0
95	Directional and wavelength multi-stability realized by a novel retro-reflector micro-cavity based semiconductor ring laser. , 2008, , .		0
96	The dynamic behavior of a semiconductor ring laser. , 2008, , .		0
97	Speckle characteristics of a laser projector using nonmodal laser emission of a semiconductor laser. , 2010, , .		0
98	Theoretical and experimental investigation of mode-hopping in semiconductor ring lasers. , 2010, , .		0
99	Study of excitability in semiconductor ring lasers: theory and experiment. Proceedings of SPIE, 2010, , .	0.8	0
100	Dynamical behavior of semiconductor ring lasers. , 2011, , .		0
101	Dynamical properties of two delay-coupled lasers: on spectra, correlations, and synchronisation. Proceedings of SPIE, 2012, , .	0.8	0
102	Characterization of a low-speckle laser line generator. Applied Optics, 2012, 51, 4818.	0.9	0
103	Tuning the emission wavelength of semiconductor ring lasers with on-chip filtered optical feedback. Proceedings of SPIE, 2012, , .	0.8	0
104	Low speckle line generation using a semiconductor laser source. Proceedings of SPIE, 2012, , .	0.8	0
105	Design of nanophotonic elements with transformation optics. , 2012, , .		0
106	Optical pulse frequency conversion inside transformation-optical metamaterials. , 2012, , .		0
107	Beating the diffraction limit with perfect confinement inside a right-handed cavity. , 2012, , .		0
108	Fast random bit generation based on a single chaotic semiconductor ring laser. , 2013, , .		0

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109	Terabit/s physical random bit generation based on optoelectronic phase-chaos systems. , 2013, , .		0
110	Information processing using an electro-optic oscillator subject to multiple delay lines. , 2013, , .		0
111	Semiconductor ring lasers with delayed optical feedback: low-frequency fluctuations. , 2014, , .		0
112	Integrated tunable semiconductor ring laser with fast wavelength switching using filtered optical feedback. , 2014, , .		0
113	Multi-wavelength emission using compact semiconductor ring laser with filtered optical feedback. Proceedings of SPIE, 2014, , .	0.8	0
114	Wavelength tuning speed in semiconductor ring lasers using on-chip filtered optical feedback. Proceedings of SPIE, 2014, , .	0.8	0
115	Parallel generation of fast random bits based on optoelectronic phase-chaos systems. , 2014, , .		0
116	Fast wavelength switching in semiconductor micro-ring lasers using filtered optical feedback. , 2015, , .		0
117	Transforming Cherenkov radiation in metamaterials. Proceedings of SPIE, 2015, , .	0.8	0
118	Subwavelength resonant antennas enhancing electromagnetic energy harvesting. Proceedings of SPIE, 2016, , .	0.8	0
119	Do Optomechanical Metasurfaces Run Out of Time?. Physical Review Letters, 2018, 120, 197402.	2.9	0
120	CW operation of fabricated semiconductor ring lasers based on retro-reflector cavities with parabolic mirrors. , 2008, , .		0