Thorsten Ackemann

List of Publications by Citations

150 papers	2,653 citations	25 h-index	44 g-index
214 ext. papers	3,085 ext. citations	3.6 avg, IF	4.79 L-index

#	Paper	IF	Citations
150	Interaction of localized structures in an optical pattern-forming system. *Physical Review Letters*, **2000**, 85, 748-51	7.4	165
149	Chapter 6 Fundamentals and Applications of Spatial Dissipative Solitons in Photonic Devices. *Advances in Atomic, Molecular and Optical Physics*, **2009**, 323-421	1.7	137
148	Realization of a semiconductor-based cavity soliton laser. *Physical Review Letters*, **2008**, 100, 013907	7.4	118
147	All-optical delay line using semiconductor cavity solitons. *Applied Physics Letters*, **2008**, 92, 011101	3.4	89
146	Characteristics of polarization switching from the low to the high frequency mode in vertical-cavity surface-emitting lasers. *Applied Physics Letters*, **2001**, 78, 3574-3576	3.4	80
145	Transition between positive and negative hexagons in optical pattern formation. *Physical Review Letters*, **1995**, 75, 3450-3453	7.4	69
144	Polarization dynamics in vertical-cavity surface-emitting lasers with optical feedback: experiment and model. *Journal of the Optical Society of America B: Optical Physics*, **1999**, 16, 2114	1.7	68
143	Ultrafast spin-induced polarization oscillations with tunable lifetime in vertical-cavity surface-emitting lasers. *Applied Physics Letters*, **2011**, 99, 151107	3.4	64
142	Optomechanical self-structuring in a cold atomic gas. *Nature Photonics*, **2014**, 8, 321-325	33.9	59
141	Optical pattern formation in alkali metal vapors: Mechanisms, phenomena and use. *Applied Physics B: Lasers and Optics*, **2001**, 72, 21-34	1.9	59
140	Optical spin manipulation of electrically pumped vertical-cavity surface-emitting lasers. *Applied Physics Letters*, **2008**, 92, 041118	3.4	55
139	Two-frequency emission and polarization dynamics at lasing threshold in vertical-cavity surface-emitting lasers. *Physical Review A*, **2003**, 68,	2.6	48
138	Non- and nearly hexagonal patterns in sodium vapor generated by single-mirror feedback. *Physical Review A*, **1994**, 50, R4468-R4471	2.6	45
137	Self-localized structures in vertical-cavity surface-emitting lasers with external feedback. *Physical Review E*, **2008**, 78, 016212	2.4	41
136	Twelvefold Quasiperiodic Patterns in a Nonlinear Optical System with Continuous Rotational Symmetry. *Physical Review Letters*, **1999**, 82, 4627-4630	7.4	40
135	Light-shift-induced level crossing and resonatorless optical bistability in sodium vapor. *Physical Review A*, **1997**, 56, 2321-2326	2.6	36
134	Low-frequency fluctuations and polarization dynamics in vertical-cavity surface-emitting lasers with isotropic feedback. *Physical Review A*, **2003**, 67,	2.6	36

133	Polarization switching to the gain disfavored mode in vertical-cavity surface-emitting lasers. *IEEE Journal of Quantum Electronics*, **2004**, 40, 97-104	2	36
132	Birefringence controlled room-temperature picosecond spin dynamics close to the threshold of vertical-cavity surface-emitting laser devices. *Applied Physics Letters*, **2010**, 97, 191114	3.4	35
131	Vortex solitons in lasers with feedback. *Optics Express*, **2010**, 18, 8859-66	3.3	35
130	Investigations of pattern forming mechanisms by Fourier filtering: properties of hexagons and the transition to stripes in an anisotropic system. *Journal of Optics B: Quantum and Semiclassical Optics*, **1999**, 1, 70-76		34
129	. *IEEE Journal of Quantum Electronics*, **2009**, 45, 1388-1395	2	32
128	Spatial mode structure of bottom-emitting broad-area vertical-cavity surface-emitting lasers. *Journal of Optics B: Quantum and Semiclassical Optics*, **2000**, 2, 406-412		31
127	Spatial structure of broad-area vertical-cavity regenerative amplifiers. *Optics Letters*, **2000**, 25, 814-6	3	28
126	Phase singularities via nonlinear beam propagation in sodium vapor. *Optics Communications*, **1995**, 115, 339-346	2	27
125	Polarized patterns in sodium vapor with single mirror feedback. *Physical Review A*, **1997**, 56, R1709-R1712	2.6	25
124	Characteristics of cavity solitons and drifting excitations in broad-area vertical-cavity surface-emitting lasers with frequency-selective feedback. *Physical Review A*, **2008**, 78,	2.6	25
123	Description and analysis of low-frequency fluctuations in vertical-cavity surface-emitting lasers with isotropic optical feedback by a distant reflector. *Physical Review A*, **2003**, 68,	2.6	25
122	Spontaneous optical patterns in an atomic vapor: observation and simulation. *Physica D: Nonlinear Phenomena*, **1996**, 96, 230-241	3.3	25
121	Quantum threshold for optomechanical self-structuring in a Bose-Einstein condensate. *Physical Review Letters*, **2015**, 114, 173903	7.4	23
120	Arrest of Domain Coarsening via Antiperiodic Regimes in Delay Systems. *Physical Review Letters*, **2015**, 115, 203901	7.4	22
119	Localized traveling waves in vertical-cavity surface-emitting lasers with frequency-selective optical feedback. *Physical Review E*, **2007**, 75, 056208	2.4	22
118	Coupling of polarization and spatial degrees of freedom of highly divergent emission in broad-area square vertical-cavity surface-emitting lasers. *Physical Review Letters*, **2008**, 100, 213901	7.4	21
117	Drift instability and locking behavior of optical patterns. *Physical Review A*, **1997**, 56, R4401-R4404	2.6	20
116	Transverse patterns and length-scale selection in vertical-cavity surface-emitting lasers with a large square aperture. *Applied Physics B: Lasers and Optics*, **2005**, 81, 945-953	1.9	20

115	The Gouy phase shift, the average phase lag of Fourier components of Hermite□Gaussian modes and their application to resonance conditions in optical cavities. *Optics Communications*, **2001**, 189, 5-14	2	20
114	Spontaneous optomechanical pattern formation in cold atoms. *Physical Review A*, **2012**, 86,	2.6	19
113	Winking hexagons. *Europhysics Letters*, **1997**, 38, 583-588	1.6	19
112	Characteristics of bistable localized emission states in broad-area vertical-cavity surface-emitting lasers with frequency-selective feedback. *Physical Review A*, **2006**, 74,	2.6	19
111	Experimental and theoretical investigations on elliptically polarized dynamical transition states in the polarization switching of vertical-cavity surface-emitting lasers. *Optics Communications*, **2004**, 235, 421-434	2	19
110	Polarization dynamics and low-frequency fluctuations in vertical-cavity surface-emitting lasers subjected to optical feedback. *Applied Physics B: Lasers and Optics*, **2003**, 77, 739-746	1.9	19
109	Observation of Mode-Locked Spatial Laser Solitons. *Physical Review Letters*, **2017**, 118, 044102	7.4	18
108	Spontaneous Formation of Vector Vortex Beams in Vertical-Cavity Surface-Emitting Lasers with Feedback. *Physical Review Letters*, **2017**, 119, 113902	7.4	18
107	Kinetic theory for transverse optomechanical instabilities. *Physical Review Letters*, **2014**, 112, 043901	7.4	18
106	Observation of laser vortex solitons in a self-focusing semiconductor laser. *Journal of Optics (United Kingdom)*, **2013**, 15, 044011	1.7	18
105	Abrupt turn-on and hysteresis in a VCSEL with frequency-selective optical feedback. *Optics Communications*, **2006**, 259, 823-833	2	18
104	Observation of a discrete family of dissipative solitons in a nonlinear optical system. *Physical Review Letters*, **2005**, 95, 143906	7.4	18
103	Pattern formation in the presence of an intrinsic polarization instability. *Journal of Optics B: Quantum and Semiclassical Optics*, **2000**, 2, 386-392		18
102	Robust control of switching of localized structures and its dynamics in a single-mirror feedback scheme. *Journal of the Optical Society of America B: Optical Physics*, **2002**, 19, 707	1.7	17
101	Experimental observation of localized structures in medium size VCSELs. *Optics Express*, **2014**, 22, 762-72	3.3	16
100	Subhexagons and ultrahexagons as a result of a secondary instability. *Physical Review A*, **1997**, 55, 4538-4544	2.6	16
99	Theoretical-Experimental Study of the Vectorial Modal Properties of Polarization-Stable Multimode Grating VCSELs. *IEEE Journal of Selected Topics in Quantum Electronics*, **2007**, 13, 1340-1348	3.8	16
98	Correlation properties and drift phenomena in the dynamics of vertical-cavity surface-emitting lasers with optical feedback. *Optics Express*, **2005**, 13, 2707-15	3.3	16

97	Properties of feedback solitons in a single-mirror experiment. *IEEE Journal of Quantum Electronics*, **2003**, 39, 227-237	2	16
96	Optical pattern formation with a two-level nonlinearity. *Physical Review A*, **2015**, 92,	2.6	15
95	Complexity in pulsed nonlinear laser systems interrogated by permutation entropy. *Optics Express*, **2014**, 22, 17840-53	3.3	15
94	Switching spatial dissipative solitons in a VCSEL with frequency selective feedback. *European Physical Journal D*, **2010**, 59, 121-131	1.3	15
93	Stationary and drifting localized structures near a multiple bifurcation point. *Physical Review E*, **2000**, 61, 4622-5	2.4	15
92	Externally-Triggered Activation and Inhibition of Optical Pulsating Regimes in Quantum-Dot Mode-locked Lasers. *Scientific Reports*, **2018**, 8, 12515	4.9	15
91	Vector cavity solitons in broad area Vertical-Cavity Surface-Emitting Lasers. *Scientific Reports*, **2016**, 6, 20428	4.9	14
90	Control of broad-area vertical-cavity surface emitting laser emission by optically induced photonic crystals. *Applied Physics Letters*, **2008**, 93, 151114	3.4	14
89	Two-dimensional front dynamics and spatial solitons in a nonlinear optical system. *Physical Review Letters*, **2007**, 99, 153902	7.4	14
88	Characteristics of switching dynamics in a semiconductor-based cavity-soliton laser. *Optics Express*, **2007**, 15, 16773-80	3.3	14
87	Eigenmodes and symmetry selection mechanisms in circular large-aperture vertical-cavity surface-emitting lasers. *Physical Review E*, **2004**, 69, 066205	2.4	14
86	Interaction between Hopf and static instabilities in a pattern-forming optical system. *Physical Review E*, **1998**, 58, 1654-1661	2.4	14
85	Interplay of linear and nonlinear effects in the formation of optical vortices in a nonlinear resonator. *Physical Review A*, **1993**, 48, 4043-4046	2.6	14
84	Low-frequency self-pulsing in single-section quantum-dot laser diodes and its relation to optothermal pulsations. *Physical Review A*, **2011**, 84,	2.6	13
83	Self-lensing in sodium vapor: influence of saturation, atomic diffusion and radiation trapping. *Optics Communications*, **1998**, 147, 411-428	2	13
82	Tunable, narrow-band light source in the 1.25 Ìm region based on broad-area quantum dot lasers with feedback. *Applied Physics B: Lasers and Optics*, **2007**, 89, 585-588	1.9	13
81	Polarization degrees of freedom in optical pattern forming systems: alkali metal vapour in a single-mirror arrangement. *Journal of Optics B: Quantum and Semiclassical Optics*, **2001**, 3, S124-S132		13
80	Operation of an optical in-well-pumped vertical-external-cavity surface-emitting laser. *Applied Optics*, **2006**, 45, 7729-35	1.7	12

79	Nonlinear beam shaping by a cloud of cold Rb atoms. *European Physical Journal D*, **2003**, 22, 473-483	1.3	12
78	Optical target and spiral patterns in a single-mirror feedback scheme. *Applied Physics B: Lasers and Optics*, **2003**, 76, 191-197	1.9	12
77	Characteristics and possible applications of localized structures in an optical pattern forming system **2001**,		12
76	Eightfold quasipatterns in an optical pattern-forming system. *Physical Review E*, **2002**, 66, 046220	2.4	12
75	Disorder mapping in VCSELs using frequency-selective feedback. *Optics Letters*, **2012**, 37, 1079-81	3	11
74	Dissipative Solitons in Pattern-Forming Nonlinear Optical Systems: Cavity Solitons and Feedback Solitons 55-100		11
73	Self-organized superlattice patterns with two slightly differing wave numbers. *Physical Review E*, **2003**, 67, 025203	2.4	11
72	Spontaneous light-mediated magnetism in cold atoms. *Communications Physics*, **2018**, 1,	5.4	10
71	Fabry-Pérot and ring cavity configurations and transverse optical patterns. *Journal of Modern Optics* , **1998**, 45, 1913-1926	1.1	10
70	Polarization patterns in alkaline vapours. *Quantum and Semiclassical Optics: Journal of the European Optical Society Part B*, **1998**, 10, R23-R36		10
69	Control of the spatial emission structure of broad-area vertical-cavity surface-emitting lasers by feedback. *Journal Physics D: Applied Physics*, **2009**, 42, 055101	3	9
68	Direct measurement of multiple instability regions via a Fourier filtering method in an optical pattern forming system. *Physical Review E*, **2003**, 68, 016209	2.4	9
67	Interplay of dispersion and absorption in a new optical pattern-forming system. *Journal of Optics B: Quantum and Semiclassical Optics*, **1999**, 1, 166-170		9
66	Transverse structures in a sodium-filled Fabry-Pérot resonator. Experimental results: Symmetries and the role of the incoupling conditions. *Chaos, Solitons and Fractals*, **1994**, 4, 1409-1431	9.3	9
65	Thick-medium model of transverse pattern formation in optically excited cold two-level atoms with a feedback mirror. *Physical Review A*, **2017**, 96,	2.6	8
64	Dissipative solitons in the coupled dynamics of light and cold atoms. *Optics Express*, **2013**, 21, 26144-9	3.3	8
63	Femtosecond synchronously in-well pumped vertical-external-cavity surface-emitting laser. *Optics Express*, **2010**, 18, 187-92	3.3	8
62	Secondary bifurcations of hexagonal patterns in a nonlinear optical system: alkali metal vapor in a single-mirror arrangement. *Physical Review E*, **2004**, 69, 036205	2.4	8

61	Secondary bifurcations and transverse standing-wave patterns in anisotropic microcavity lasers close to the first laser threshold. *Physical Review A*, **2003**, 67,	2.6	8
60	Saturation of absorption and gain in a quantum dot diode with continuous-wave driving. *Applied Physics Letters*, **2010**, 97, 231104	3.4	7
59	Length scales and polarization properties of annular standing waves in circular broad-area vertical-cavity surface-emitting lasers. *Applied Physics B: Lasers and Optics*, **2009**, 97, 397-403	1.9	7
58	Quantum modeling of semiconductor gain materials and vertical-external-cavity surface-emitting laser systems. *Physica Status Solidi (B): Basic Research*, **2010**, 247, 789-808	1.3	7
57	Femtosecond synchronously mode-locked vertical-external cavity surface-emitting laser. *Optics Express*, **2006**, 14, 1810-21	3.3	7
56	Characteristics of polarization switching in vertical-cavity surface-emitting lasers **2001**, 4286, 44		7
55	TRANSITION TO SPATIOTEMPORALLY IRREGULAR STATES IN A SINGLE-MIRROR FEEDBACK SYSTEM. *International Journal of Bifurcation and Chaos in Applied Sciences and Engineering*, **2001**, 11, 2789-2807	2	7
54	Magnetic field control over microscopic symmetry properties of an optical pattern-forming system: experiment. *Journal of Optics B: Quantum and Semiclassical Optics*, **2000**, 2, 421-425		7
53	Transverse structures in a sodium-filled Fabry-P□ot resonator□. Interpretation of experimental results. *Chaos, Solitons and Fractals*, **1994**, 4, 1433-1449	9.3	7
52	Magnetic phase diagram of light-mediated spin structuring in cold atoms. *Optica*, **2018**, 5, 1322	8.6	7
51	Complex behaviour in optical systems and applications. *Journal of Optics B: Quantum and Semiclassical Optics*, **2000**, 2,		7
50	Self-organization in cold atomic gases: a synchronization perspective. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2014**, 372,	3	6
49	Diamond heat sinking of terahertz antennas for continuous-wave photomixing. *Journal of Applied Physics*, **2012**, 112, 123109	2.5	6
48	Solitons in semiconductor microcavities. *Nature Photonics*, **2012**, 6, 204-204	33.9	6
47	Analysis of bistability conditions between lasing and nonlasing states for a vertical-cavity surface-emitting laser with frequency-selective optical feedback using an envelope approximation. *Physical Review A*, **2007**, 76,	2.6	6
46	Analysis of spatial emission structures in vertical-cavity surface-emitting lasers with feedback from a volume Bragg grating. *Physical Review A*, **2012**, 85,	2.6	5
45	Polarization properties in the transition from below to above lasing threshold in broad-area vertical-cavity surface-emitting lasers. *Physical Review A*, **2010**, 81,	2.6	5
44	Magnetic field control over microscopic symmetry properties of an optical pattern-forming system: theory. *Journal of Optics B: Quantum and Semiclassical Optics*, **2000**, 2, 426-431		5

43	Fabry-Pérot and ring cavity configurations and transverse optical patterns. *Journal of Modern Optics*, **1998**, 45, 1913-1926	1.1	5
42	Temperature dependence of spontaneous switch-on and switch-off of laser cavity solitons in vertical-cavity surface-emitting lasers with frequency-selective feedback. *Journal Physics D: Applied Physics*, **2016**, 49, 095110	3	4
41	Mapping the dynamical regimes of a SESAM mode-locked VECSEL with a long cavity using time series analysis. *Optics Express*, **2018**, 26, 16624-16638	3.3	4
40	High density InAlAs/GaAlAs quantum dots for non-linear optics in microcavities. *Journal of Applied Physics*, **2012**, 111, 043107	2.5	4
39	Adler synchronization of spatial laser solitons pinned by defects. *Physical Review Letters*, **2012**, 108, 213904	7.4	4
38	Ultrafast circular polarization oscillations in spin-polarized vertical-cavity surface-emitting laser devices **2010**,		4
37	Nonlinear lensing mechanisms in a cloud of cold atoms. *European Physical Journal D*, **2007**, 41, 337-348	1.3	4
36	Patterns in Broad-Area Microcavities. *Physica Status Solidi (B): Basic Research*, **2000**, 221, 133-136	1.3	4
35	Bistability and transients in CO2laser patterns. *Journal of Optics B: Quantum and Semiclassical Optics*, **1999**, 1, 161-165		4
34	Observing Pattern Dynamics in Nonlinear Optical Systems Using the Video-sampling Method. *Chaos, Solitons and Fractals*, **1999**, 10, 675-679	9.3	4
33	Inversion-symmetry breaking in spin patterns by a weak magnetic field. *Physical Review A*, **2019**, 99,	2.6	3
32	Compensation of spatial inhomogeneities in a cavity soliton laser using a spatial light modulator. *Optics Express*, **2010**, 18, 23121-32	3.3	3
31	Saturation and self-lensing in self-assembled quantum dots with constant-wave driving. *Physical Review B*, **2009**, 80,	3.3	3
30	Nonequilateral drifting hexagons in a strongly misaligned single-mirror system. *Journal of Optics B: Quantum and Semiclassical Optics*, **1999**, 1, 58-63		3
29	Modulational instability and beam splitting in the nonlinear light propagation in sodium vapour. *Journal of Optics B: Quantum and Semiclassical Optics*, **1999**, 1, 90-95		3
28	Multiple Self-Organized Phases and Spatial Solitons in Cold Atoms Mediated by Optical Feedback. *Physical Review Letters*, **2021**, 126, 203201	7.4	3
27	On the thermal dependence of the generation of terahertz radiation by photomixing. *Semiconductor Science and Technology*, **2014**, 29, 035006	1.8	2
26	Polarization Properties of Laser Solitons. *Applied Sciences (Switzerland)*, **2017**, 7, 442	2.6	2

25	Dynamics and Interaction of Laser Cavity Solitonsin Broad-Area Semiconductor Lasers **2015**, 41-76		2
24	Self-Organization in Cold Atoms Mediated by Diffractive Coupling. *Atoms*, **2021**, 9, 35	2.1	2
23	Frequency and Phase Locking of Laser Cavity Solitons. *Progress in Optical Science and Photonics*, **2012**, 49-87	0.3	1
22	Self-pulsing dynamics in a cavity soliton laser **2010**,		1
21	Optical and electrical properties of stacked binary InAs-GaAs quantum dot structures prepared under Surfactant-mediated growth conditions. *Journal of Physics: Conference Series*, **2010**, 245, 012072	0.3	1
20	Self pulsing solitons: A base for optically controllable pulse trains in photonic networks? **2010**,		1
19	Control of cavity solitons and inhomogeneity compensation in VCSELs with frequency selective feedback **2009**,		1
18	Birefringence and spin controlled ultrafast polarization oscillations in vertical-cavity surface-emitting lasers **2011**,		1
17	Analysis of polarization states of broad-area vertical-cavity surface-emitting lasers below and above threshold **2009**,		1
16	Time-resolved spectra of a self-pulsing quantum dot laser **2010**,		1
15	Bistability and opto-thermal-pulsations in a quantum-dot edge-emitting laser diode. *Journal of Physics: Conference Series*, **2010**, 245, 012092	0.3	1
14	Bistability conditions between lasing and non-lasing states for vertical-cavity surface-emitting lasers with frequency-selective optical feedback **2007**,		1
13	Dynamics and polarization effects in small-area vertical-cavity surface-emitting lasers in free-running mode and with time-delayed feedback **2003**, 4942, 92		1
12	Selection between hexagonal, square and stripe patterns in a polarization instability: an experimental investigation. *Annalen Der Physik*, **2004**, 13, 379-390	2.6	1
11	Selection rules for transverse-mode excitation in nonlinear ring and Fabry-Perot resonators. *Physical Review A*, **1998**, 57, 4026-4033	2.6	1
10	Spatial solitons in a single-mirror feedback system **1999**, WC1		1
9	Vectorial solitons and higher-order localized states in a single-mirror feedback system **2004**,		1
8	Influence of inhomogeneities on wavelength selection of flower-like patterns in wide-aperture lasers **2004**,		1

7	Vortex Solitons and Azimuthons in Vertical-Cavity Surface-Emitting Lasers with Feedback **2014**,		1
6	Spontaneous atomic crystallization via diffractive dephasing in optical cavities. *Journal of Physics: Conference Series*, **2021**, 1919, 012014	0.3	1
5	Nonlinear Optics and Saturation Behavior of Quantum Dot Samples Under Continuous Wave Driving **2012**, 251-295		0
4	Analysis and optimization of coupling to external cavities in feedback experiments with vertical-cavity surface-emitting lasers. *Optics Communications*, **2008**, 281, 1396-1400	2	
3	Competition of pattern forming instabilities due to phase front curvature in an optical system. *Physical Review E*, **2006**, 73, 016215	2.4	
2	Vectorial solitons, higher-order localized states and compound states in a single-mirror feedback system **2004**, ITuH4		
1	On the response of an oscillatory medium to defect generation. *Applied Physics B: Lasers and Optics*, **2005**, 81, 969-973	1.9	