Ortwin Hess

List of Publications by Citations

223 papers	6,981 citations	41 h-index	77 g-index
291 ext. papers	8,211 ext. citations	6.3 avg, IF	6.09 L-index

#	Paper	IF	Citations
223	Single-molecule strong coupling at room temperature in plasmonic nanocavities. *Nature*, **2016**, 535, 127-30	50.4	1009
222	Trapped rainbow storage of light in metamaterials. *Nature*, **2007**, 450, 397-401	50.4	587
221	Active nanoplasmonic metamaterials. *Nature Materials*, **2012**, 11, 573-84	27	425
220	Rheological and small angle neutron scattering investigation of shear-induced particle structures of concentrated polymer dispersions submitted to plane Poiseuille and Couette flowa). *Journal of Rheology*, **1992**, 36, 743-787	4.1	250
219	Ultrafast plasmonic nanowire lasers near the surface plasmon frequency. *Nature Physics*, **2014**, 10, 870-876	19.2	217
218	Overcoming losses with gain in a negative refractive index metamaterial. *Physical Review Letters*, **2010**, 105, 127401	7.4	217
217	Cavity-free plasmonic nanolasing enabled by dispersionless stopped light. *Nature Communications*, **2014**, 5, 4972	17.4	129
216	Near-field strong coupling of single quantum dots. *Science Advances*, **2018**, 4, eaar4906	14.3	117
215	Dirac-like plasmons in honeycomb lattices of metallic nanoparticles. *Physical Review Letters*, **2013**, 110, 106801	7.4	103
214	Suppressed Quenching and Strong-Coupling of Purcell-Enhanced Single-Molecule Emission in Plasmonic Nanocavities. *ACS Photonics*, **2018**, 5, 186-191	6.3	99
213	Mapping Nanoscale Hotspots with Single-Molecule Emitters Assembled into Plasmonic Nanocavities Using DNA Origami. *Nano Letters*, **2018**, 18, 405-411	11.5	97
212	Maxwell-Bloch equations for spatially inhomogeneous semiconductor lasers. I. Theoretical formulation. *Physical Review A*, **1996**, 54, 3347-3359	2.6	92
211	High-dimensional chaotic dynamics of an external cavity semiconductor laser. *Physical Review Letters*, **1994**, 73, 2188-2191	7.4	89
210	Complex spatio-temporal dynamics in the near-field of a broad-area semiconductor laser. *Europhysics Letters*, **1996**, 35, 579-584	1.6	84
209	Chiral metamaterials: enhancement and control of optical activity and circular dichroism. *Nano Convergence*, **2015**, 2, 24	9.2	83
208	Ultraslow waves on the nanoscale. *Science*, **2017**, 358,	33.3	81
207	Electrical access to critical coupling of circularly polarized waves in graphene chiral metamaterials. *Science Advances*, **2017**, 3, e1701377	14.3	80

206	Tunable 3D extended self-assembled gold metamaterials with enhanced light transmission. *Advanced Materials*, **2013**, 25, 2713-6	24	76
205	. *IEEE Journal of Quantum Electronics*, **1995**, 31, 35-43	2	70
204	Existence of temperature on the nanoscale. *Physical Review Letters*, **2004**, 93, 080402	7.4	67
203	On the origin of chirality in nanoplasmonic gyroid metamaterials. *Advanced Materials*, **2013**, 25, 612-7	24	66
202	Scattering of core-shell nanowires with the interference of electric and magnetic resonances. *Optics Letters*, **2013**, 38, 2621-4	3	64
201	Ordering in stretch-tunable polymeric opal fibers. *Optics Express*, **2011**, 19, 3144-54	3.3	61
200	Coherent amplification and noise in gain-enhanced nanoplasmonic metamaterials: a Maxwell-Bloch Langevin approach. *ACS Nano*, **2012**, 6, 2420-31	16.7	60
199	Surface plasmon polaritons in generalized slab heterostructures with negative permittivity and permeability. *Physical Review B*, **2006**, 73,	3.3	60
198	Subwavelength localization and toroidal dipole moment of spoof surface plasmon polaritons. *Physical Review B*, **2015**, 91,	3.3	58
197	Physics. Two two-dimensional materials are better than one. *Science*, **2013**, 340, 1298-9	33.3	58
196	Gain and plasmon dynamics in active negative-index metamaterials. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2011**, 369, 3525-50	3	58
195	Transport in open spin chains: A Monte Carlo wave-function approach. *Physical Review B*, **2008**, 77,	3.3	57
194	Ultrafast gain dynamics in quantum-dot amplifiers: theoretical analysis and experimental investigations. *IEEE Journal of Quantum Electronics*, **2005**, 41, 1115-1123	2	55
193	Spoof plasmon polaritons in slanted geometries. *Physical Review B*, **2012**, 85,	3.3	48
192	Theory of light amplification in active fishnet metamaterials. *Physical Review Letters*, **2011**, 107, 167405	7.4	48
191	Maxwell-Bloch equations for spatially inhomogeneous semiconductor lasers. II. Spatiotemporal dynamics. *Physical Review A*, **1996**, 54, 3360-3368	2.6	48
190	Controlling delay-induced chaotic behavior of a semiconductor laser with optical feedback. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1996**, 216, 97-105	2.3	48
189	Suppressing spatiotemporal lasing instabilities with wave-chaotic microcavities. *Science*, **2018**, 361, 1225-1231	33.3	46

188	Quantum control of atomic systems by homodyne detection and feedback. *Physical Review A*, **1998**, 57, 4877-4888	2.6	46
187	Applied physics. Metamaterials with quantum gain. *Science*, **2013**, 339, 654-5	33.3	45
186	Tunable surface waves at the interface separating different graphene-dielectric composite hyperbolic metamaterials. *Optics Express*, **2017**, 25, 11466-11476	3.3	45
185	Modified spontaneous-emission rate in an inverted-opal structure with complete photonic bandgap. *Journal of the Optical Society of America B: Optical Physics*, **2002**, 19, 3013	1.7	43
184	Two-dimensional TiO inverse opal with a closed top surface structure for enhanced light extraction from polymer light-emitting diodes. *Advanced Materials*, **2011**, 23, 1846-50	24	42
183	Single-mode operation in the slow-light regime using oscillatory waves in generalized left-handed heterostructures. *Applied Physics Letters*, **2006**, 89, 201103	3.4	42
182	Spatio-temporal dynamics of semiconductor lasers: Theory, modelling and analysis. *Progress in Quantum Electronics*, **1996**, 20, 85-179	9.1	39
181	Completely stopped and dispersionless light in plasmonic waveguides. *Physical Review Letters*, **2014**, 112, 167401	7.4	38
180	Double-Inverse-Opal Photonic Crystals: The Route to Photonic Bandgap Switching. *Advanced Functional Materials*, **2006**, 16, 885-890	15.6	36
179	Stabilization of chaotic spatiotemporal filamentation in large broad area lasers by spatially structured optical feedback. *Optics Express*, **1999**, 5, 48-54	3.3	35
178	Negative-permeability electromagnetically induced transparent and magnetically active metamaterials. *Physical Review B*, **2010**, 81,	3.3	33
177	Mesoscopic spatiotemporal theory for quantum-dot lasers. *Physical Review A*, **2002**, 65,	2.6	31
176	A full-time-domain approach to spatio-temporal dynamics of semiconductor lasers. I. Theoretical formulation. *Progress in Quantum Electronics*, **2008**, 32, 159-246	9.1	30
175	A tri-helical model for nanoplasmonic gyroid metamaterials. *New Journal of Physics*, **2012**, 14, 083032	2.9	29
174	Stabilization of spatiotemporally chaotic semiconductor laser arrays by means of delayed optical feedback. *Physical Review E*, **1997**, 56, 3868-3875	2.4	29
173	Nonequilibrium plasmons with gain in graphene. *Physical Review B*, **2015**, 91,	3.3	28
172	Dynamic filamentation and beam quality of quantum-dot lasers. *Applied Physics Letters*, **2004**, 84, 1650-1652	3.4	28
171	Ultrafast Nonlinear Response of Gold Gyroid Three-Dimensional Metamaterials. *Physical Review Applied*, **2014**, 2,	4.3	27

170	Temporal solitons in magnetooptic and metamaterial waveguides. *Photonics and Nanostructures - Fundamentals and Applications*, **2010**, 8, 228-243	2.6	27
169	Quantum noise and polarization fluctuations in vertical-cavity surface-emitting lasers. *Physical Review A*, **1997**, 56, 868-876	2.6	27
168	Nonlinear fluid behavior: from shear thinning to shear thickening. *Physica A: Statistical Mechanics and Its Applications*, **1994**, 207, 517-540	3.3	27
167	Spatio-temporal dynamics in twin-stripe semiconductor lasers. *Physica D: Nonlinear Phenomena*, **1994**, 70, 165-177	3.3	27
166	Optical activity enhanced by strong inter-molecular coupling in planar chiral metamaterials. *Scientific Reports*, **2014**, 4, 5864	4.9	26
165	Local versus global thermal states: correlations and the existence of local temperatures. *Physical Review E*, **2004**, 70, 066148	2.4	26
164	Plasmonic Nanocavity Modes: From Near-Field to Far-Field Radiation. *ACS Photonics*, **2020**, 7, 463-471	6.3	26
163	Orbital angular momentum dichroism in nanoantennas. *Communications Physics*, **2018**, 1,	5.4	26
162	Reading the Orbital Angular Momentum of Light Using Plasmonic Nanoantennas. *ACS Photonics*, **2017**, 4, 891-896	6.3	25
161	Quantum Plasmonic Immunoassay Sensing. *Nano Letters*, **2019**, 19, 5853-5861	11.5	25
160	A highly efficient CMOS nanoplasmonic crystal enhanced slow-wave thermal emitter improves infrared gas-sensing devices. *Scientific Reports*, **2015**, 5, 17451	4.9	25
159	Gaussian Quantum Fluctuations in Interacting Many Particle Systems. *Letters in Mathematical Physics*, **2004**, 68, 103-112	1.2	25
158	Dynamic cross-waveguide optical switching with a nonlinear photonic band-gap structure. *Optics Express*, **1998**, 3, 28-34	3.3	25
157	Quantum Maxwell-Bloch equations for spatially inhomogeneous semiconductor lasers. *Physical Review A*, **1999**, 59, 2342-2358	2.6	25
156	Tsakmakidis et al. reply. *Nature*, **2008**, 455, E11-E12	50.4	24
155	Injection-induced bifurcations of transverse spatiotemporal patterns in semiconductor laser arrays. *Physical Review E*, **1995**, 52, 1571-1578	2.4	24
154	Spatiotemporal Dynamics and Control of Strong Coupling in Plasmonic Nanocavities. *ACS Photonics*, **2017**, 4, 2410-2418	6.3	23
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150	Control and dynamic competition of bright and dark lasing states in active nanoplasmonic metamaterials. *Physical Review B*, **2012**, 85,	3.3	21
149	Nonequilibrium plasmon emission drives ultrafast carrier relaxation dynamics in photoexcited graphene. *Physical Review B*, **2016**, 93,	3.3	20
148	FDTD analysis of slow light propagation in negative-refractive-index metamaterial waveguides. *Journal of Optics*, **2009**, 11, 114027		20
147	A full time-domain approach to spatio-temporal dynamics of semiconductor lasers. II. Spatio-temporal dynamics. *Progress in Quantum Electronics*, **2008**, 32, 247-307	9.1	20
146	Modeling of the performance of high-power diode amplifier systems with an optothermal microscopic spatio-temporal theory. *IEEE Journal of Quantum Electronics*, **1999**, 35, 320-331	2	20
145	Chiral Metafoils for Terahertz Broadband High-Contrast Flexible Circular Polarizers. *Physical Review Applied*, **2014**, 2,	4.3	19
144	Spatio-temporal dynamics of multi-stripe semiconductor lasers with delayed optical feedback. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1996**, 222, 67-75	2.3	19
143	Gapless unidirectional photonic transport using all-dielectric kagome lattices. *Physical Review Research*, **2020**, 2,	3.9	19
142	Nature of topological protection in photonic spin and valley Hall insulators. *Physical Review B*, **2020**, 101,	3.3	18
141	Polarization fluctuations in vertical-cavity surface-emitting lasers: a key to the mechanism behind polarization stability. *Quantum and Semiclassical Optics: Journal of the European Optical Society Part B*, **1998**, 10, 87-96		18
140	Massively parallel ultrafast random bit generation with a chip-scale laser. *Science*, **2021**, 371, 948-952	33.3	18
139	Plasmonic leaky-mode lasing in active semiconductor nanowires. *Laser and Photonics Reviews*, **2015**, 9, 256-262	8.3	17
138	Group Theoretical Route to Deterministic Weyl Points in Chiral Photonic Lattices. *Physical Review Letters*, **2017**, 119, 227401	7.4	17
137	Extreme control of light in metamaterials: Complete and loss-free stopping of light. *Physica B: Condensed Matter*, **2012**, 407, 4066-4069	2.8	17
136	Evanescent gain for slow and stopped light in negative refractive index heterostructures. *Physical Review B*, **2011**, 84,	3.3	17
135	Metasurfaces Atop Metamaterials: Surface Morphology Induces Linear Dichroism in Gyroid Optical Metamaterials. *Advanced Materials*, **2019**, 31, e1803478	24	17

134	Semiconductor nanostructure quantum ratchet for high efficiency solar cells. *Communications Physics*, **2018**, 1,	5.4	16
133	Self-focusing of femtosecond surface plasmon polaritons. *Optics Express*, **2013**, 21, 1121-7	3.3	16
132	Ultralow-loss optical diamagnetism in silver nanoforests. *Journal of Optics*, **2009**, 11, 114026		16
131	Dynamic Spatiotemporal Speed Control of Ultrashort Pulses in Quantum-Dot SOAs. *IEEE Journal of Quantum Electronics*, **2006**, 42, 1047-1054	2	16
130	Analysis of the dynamic behavior and short-pulse modulation scheme for laterally coupled diode lasers. *IEEE Journal of Selected Topics in Quantum Electronics*, **2001**, 7, 192-200	3.8	16
129	Single plasmon hot carrier generation in metallic nanoparticles. *Communications Physics*, **2019**, 2,	5.4	15
128	Surface plasmon polaritons at the interface of two nanowire metamaterials. *Journal of Optics (United Kingdom)*, **2017**, 19, 085101	1.7	15
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123	Controlling hybrid-polarization surface plasmon polaritons in dielectric-transparent conducting oxides metamaterials via their effective properties. *Journal of Applied Physics*, **2017**, 122, 193105	2.5	14
122	Micrometer size polarization independent depletion-type photonic modulator in Silicon On Insulator. *Optics Express*, **2007**, 15, 5879-84	3.3	14
121	Cascaded nanooptics to probe microsecond atomic-scale phenomena. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 14819-14826	11.5	13
120	Femtosecond nanometer-sized optical solitons. *Physical Review A*, **2011**, 84,	2.6	13
119	Finite-Difference Time-Domain simulations of photonic crystal defect structures. *Physica Status Solidi A*, **2003**, 197, 605-619		13
118	Dynamical model of coherent circularly polarized optical pulse interactions with two-level quantum systems. *Physical Review A*, **2005**, 72,	2.6	13
117	Thermal photon statistics in laser light above threshold. *Physical Review A*, **2000**, 62,	2.6	13

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115	Running transverse waves in optical phase conjugation. *Physical Review A*, **1996**, 53, 4519-4527	2.6	13
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113	Modeling and optimization of high-power Nd/sup 3+/-Yb/sup 3+/ codoped fiber lasers. *Journal of Lightwave Technology*, **2006**, 24, 1601-1609	4	11
112	Spectral Densities and Partition Functions of Modular Quantum ystems as Derived from a Central Limit Theorem. *Journal of Statistical Physics*, **2005**, 119, 1139-1151	1.5	11
111	Coexistence of thermal noise and squeezing in the intensity fluctuations of small laser diodes. *Journal of the Optical Society of America B: Optical Physics*, **2000**, 17, 1926	1.7	11
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108	Controllable interaction of counterpropagating solitons in three-level media. *Physical Review A*, **2010**, 82,	2.6	10
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103	Plasmonic nanogap tilings: light-concentrating surfaces for low-loss photonic integration. *ACS Nano* , **2013**, 7, 7093-100	16.7	9
102	Comment on "Spaser action, loss compensation, and stability in plasmonic systems with gain". *Physical Review Letters*, **2011**, 107, 259701; discussion 259702	7.4	9
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100	Saturation behavior and self-phase modulation of picosecond pulses in single-stripe and tapered semiconductor laser amplifiers. *Journal of the Optical Society of America B: Optical Physics*, **2000**, 17, 1452	1.7	9
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94	Scaling behavior of interactions in a modular quantum system and the existence of local temperature. *Europhysics Letters*, **2004**, 65, 613-619	1.6	8
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85	Ultrafast nonlinear dynamics of whispering-gallery mode micro-cavity lasers. *Optics Express*, **2006**, 14, 2744-52	3.3	6
84	Spatio-temporal dynamics of light amplification and amplified spontaneous emission in high-power tapered semiconductor laser amplifiers. *IEEE Journal of Quantum Electronics*, **2001**, 37, 1345-1355	2	6
83	Nonlocal quantum gain facilitates loss compensation and plasmon amplification in graphene hyperbolic metamaterials. *Physical Review B*, **2019**, 99,	3.3	5
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81	Slow light. *Journal of Optics (United Kingdom)*, **2010**, 12, 100301-100301	1.7	5

80	Analysis of nonlinear gain-induced effects on short-pulse amplification in doped fibers by use of an extended power equation. *Optics Letters*, **2007**, 32, 118-20	3	5
79	Femtosecond dynamics of active semiconductor waveguides: microscopic analysis and experimental investigations. *Journal of the Optical Society of America B: Optical Physics*, **2004**, 21, 1638	1.7	5
78	Spatio-spectral dynamics and spontaneous ultrafast optical switching in VCSEL arrays. *Optics Express*, **1998**, 2, 424-30	3.3	5
77	Electron Beam Interrogation and Control of Ultrafast Plexcitonic Dynamics. *ACS Photonics*, **2020**, 7, 401-410	6.5	5
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74	From shear-thickening and periodic flow behavior to rheo-chaos in nonlinear Maxwell-model fluids. *Physica A: Statistical Mechanics and Its Applications*, **2006**, 366, 31-54	3.3	4
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50	Slow and stopped-light lasing in active plasmonic metamaterials **2012**,		2
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47	Flow Properties Inferred from Generalized Maxwell Models. *Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences*, **2009**, 64, 81-95	1.4	2
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40	Ultrafast ZnO nanowire lasers: nanoplasmonic acceleration of gain dynamics at the surface plasmon polariton frequency **2014**,		2
39	**2016**,		2
38	Active Optical Metamaterials **2019**, 187-261		2
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