Hui Cao

List of Publications by Year
in descending order

176 papers	9,129 citations	57719 44 h-index	40954 93 g-index
180 all docs	180 docs citations	180 times ranked	6093 citing authors

#	Article	IF	Citations
1	Coherent Perfect Absorbers: Time-Reversed Lasers. Physical Review Letters, 2010, 105, 053901.	2.9	912
2	Speckle-free laser imaging using random laser illumination. Nature Photonics, 2012, 6, 355-359.	15.6	793
3	Time-Reversed Lasing and Interferometric Control of Absorption. Science, 2011, 331, 889-892.	6.0	673
4	Dielectric microcavities: Model systems for wave chaos and non-Hermitian physics. Reviews of Modern Physics, 2015, 87, 61-111.	16.4	520
5	Lasing in random media. Waves in Random and Complex Media, 2003, 13, R1-R39.	1.5	483
6	Compact spectrometer based on a disordered photonic chip. Nature Photonics, 2013, 7, 746-751.	15.6	424
7	Review on latest developments in random lasers with coherent feedback. Journal of Physics A, 2005, 38, 10497-10535.	1.6	332
8	All-fiber spectrometer based on speckle pattern reconstruction. Optics Express, 2013, 21, 6584.	1.7	214
9	Using a multimode fiber as a high-resolution, low-loss spectrometer. Optics Letters, 2012, 37, 3384.	1.7	157
10	Perfect coupling of light to surface plasmons by coherent absorption. Physical Review Letters, 2012, 108, 186805.	2.9	152
11	Random lasing in closely packed resonant scatterers. Journal of the Optical Society of America B: Optical Physics, 2004, 21, 159.	0.9	146
12	High-resolution and broadband all-fiber spectrometers. Optica, 2014, 1, 175.	4.8	135
13	Mesoporous GaN for Photonic Engineeringâ€"Highly Reflective GaN Mirrors as an Example. ACS Photonics, 2015, 2, 980-986.	3.2	129
14	Plasmonic Enhancement of Dye-Sensitized Solar Cells Using Coreâ€“Shellâ€“Shell Nanostructures. Journal of Physical Chemistry C, 2013, 117, 927-934.	1.5	117
15	Low spatial coherence electrically pumped semiconductor laser for speckle-free full-field imaging. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 1304-1309.	3.3	117
16	Spatial coherence of random laser emission. Optics Letters, 2011, 36, 3404.	1.7	114
17	Coherent Control of Total Transmission of Light through Disordered Media. Physical Review Letters, 2014, 112, 133903.	2.9	104
18	Complex lasers with controllable coherence. Nature Reviews Physics, 2019, 1, 156-168.	11.9	97

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19	Evanescently coupled multimode spiral spectrometer. Optica, 2016, 3, 956.	4.8	96
20	Chaotic microcavity laser with high quality factor and unidirectional output. Physical Review A, 2009, 80, .	1.0	89
21	Channeling Chaotic Rays into Waveguides for Efficient Collection of Microcavity Emission. Physical Review Letters, 2012, 108, 243902.	2.9	85
22	Customizing speckle intensity statistics. Optica, 2018, 5, 595.	4.8	85
23	A conductivity-based selective etching for next generation GaN devices. Physica Status Solidi (B): Basic Research, 2010, 247, 1713-1716.	0.7	84
24	Control of Lasing in Biomimetic Structures with Short-Range Order. Physical Review Letters, 2011, 106, 183901.	2.9	77
25	Spatiotemporal Control of Light Transmission through a Multimode Fiber with Strong Mode Coupling. Physical Review Letters, 2016, 117, 053901.	2.9	77
26	Correlation-enhanced control of wave focusing in disordered media. Nature Physics, 2017, 13, 497-502.	6.5	77
27	Suppressing spatiotemporal lasing instabilities with wave-chaotic microcavities. Science, 2018, 361, 1225-1231.	6.0	77
28	Active control of emission directionality of semiconductor microdisk lasers. Applied Physics Letters, 2014, 104, 231108.	1.5	75
29	Generating Non-Rayleigh Speckles with Tailored Intensity Statistics. Physical Review Letters, 2014, 112, .	2.9	73
30	Differential Expression of Ecdysone Receptor Leads to Variation in Phenotypic Plasticity across Serial Homologs. PLoS Genetics, 2015, 11, e1005529.	1.5	69
31	Complete polarization control in multimode fibers with polarization and mode coupling. Light: Science and Applications, 2018, 7, 54.	7.7	68
32	Controlling Random Lasing with Three-Dimensional Plasmonic Nanorod Metamaterials. Nano Letters, 2016, 16, 2471-2477.	4.5	66
33	Massively parallel ultrafast random bit generation with a chip-scale laser. Science, 2021, 371, 948-952.	6.0	64
34	Artificial selection for structural color on butterfly wings and comparison with natural evolution. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 12109-12114.	3.3	61
35	Photonic band gaps in three-dimensional network structures with short-range order. Physical Review A, 2011, 84, .	1.0	57
36	Broadband multimode fiber spectrometer. Optics Letters, 2016, 41, 2029.	1.7	57

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37	Control of Energy Density inside a Disordered Medium by Coupling to Open or Closed Channels. Physical Review Letters, 2016, 117, 086803.	2.9	57
38	Low-loss high-speed speckle reduction using a colloidal dispersion. Applied Optics, 2013, 52, 1168.	0.9	55
39	Low-spatial-coherence high-radiance broadband fiber source for speckle free imaging. Optics Letters, 2015, 40, 4607.	1.7	54
40	Transmission channels for light in absorbing random media: From diffusive to ballistic-like transport. Physical Review B, 2014, 89, .	1.1	53
41	Position-Dependent Diffusion of Light in Disordered Waveguides. Physical Review Letters, 2014, 112, 023904.	2.9	51
42	Rotating Optical Microcavities with Broken Chiral Symmetry. Physical Review Letters, 2015, 114, 053903.	2.9	51
43	Local Chirality of Optical Resonances in Ultrasmall Resonators. Physical Review Letters, 2012, 108, 253902.	2.9	47
44	Perspective on speckle spectrometers. Journal of Optics (United Kingdom), 2017, 19, 060402.	1.0	46
45	Transverse localization of transmission eigenchannels. Nature Photonics, 2019, 13, 352-358.	15.6	44
46	Photonic-band-gap effects in two-dimensional polycrystalline and amorphous structures. Physical Review A, 2010, 82, .	1.0	43
47	Principal modes in multimode fibers: exploring the crossover from weak to strong mode coupling. Optics Express, 2017, 25, 2709.	1.7	43
48	Broadband Coherent Enhancement of Transmission and Absorption in Disordered Media. Physical Review Letters, 2015, 115, 223901.	2.9	41
49	Coherence switching of a degenerate VECSEL for multimodality imaging. Optica, 2016, 3, 403.	4.8	40
50	Effects of spatially nonuniform gain on lasing modes in weakly scattering random systems. Physical Review A, 2010, 81, .	1.0	39
51	The optical frequency comb fibre spectrometer. Nature Communications, 2016, 7, 12995.	5.8	38
52	Formation of long-lived resonances in hexagonal cavities by strong coupling of superscar modes. Physical Review A, 2013, 88, .	1.0	37
53	Cavity formation and light propagation in partially ordered and completely random one-dimensional systems. IEEE Journal of Quantum Electronics, 2003, 39, 364-374.	1.0	36
54	Effect of local pumping on random laser modes in one dimension. Journal of the Optical Society of America B: Optical Physics, 2007, 24, A26.	0.9	36

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55	Deep learning of ultrafast pulses with a multimode fiber. APL Photonics, 2020, 5, .	3.0	36
56	Lasing in localized modes of a slow light photonic crystal waveguide. Applied Physics Letters, 2011, 98, 241107.	1.5	32
57	Full-field interferometric confocal microscopy using a VCSEL array. Optics Letters, 2014, 39, 4446.	1.7	32
58	Pump-controlled modal interactions in microdisk lasers. Physical Review A, 2015, 91, .	1.0	32
59	Creating and controlling complex light. APL Photonics, 2019, 4, .	3.0	32
60	Photonic bandgap engineering with inverse opal multistacks of different refractive index contrasts. Applied Physics Letters, 2009, 95, 091101.	1.5	31
61	Extreme output sensitivity to subwavelength boundary deformation in microcavities. Physical Review A, 2013, 87, .	1.0	31
62	Noise analysis of spectrometers based on speckle pattern reconstruction. Applied Optics, 2014, 53, 410.	0.9	30
63	Harnessing disorder for photonic device applications. Applied Physics Reviews, 2022, 9, .	5.5	30
64	Broadband subwavelength focusing of light using a passive sink. Optics Express, 2013, 21, 17435.	1.7	28
65	Modification of light transmission channels by inhomogeneous absorption in random media. Optics Express, 2015, 23, 11043.	1.7	28
66	Rotation-induced evolution of far-field emission patterns of deformed microdisk cavities. Optica, 2015, 2, 323.	4.8	28
67	Circumventing the optical diffraction limit with customized speckles. Optica, 2021, 8, 122.	4.8	28
68	Lasing in disordered media. Progress in Optics, 2003, , 317-370.	0.4	26
69	Field and intensity correlations in amplifying random media. Physical Review B, 2005, 71, .	1.1	26
70	PARTIALLY PUMPED RANDOM LASERS. International Journal of Modern Physics B, 2014, 28, 1430001.	1.0	26
71	Coherent Control of Photocurrent in a Strongly Scattering Photoelectrochemical System. ACS Photonics, 2016, 3, 449-455.	3.2	26
72	Long-range spatio-temporal correlations in multimode fibers for pulse delivery. Nature Communications, 2019, 10, 2973.	5.8	26

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73	Finite-Difference Time-Domain Formulation of Stochastic Noise in Macroscopic Atomic Systems. Journal of Lightwave Technology, 2009, 27, 4530-4535.	2.7	25
74	Numerical study of amplified spontaneous emission and lasing in random media. Physical Review A, 2010, 82, .	1.0	25
75	Wavelength-scale deformed microdisk lasers. Physical Review A, 2011, 84, .	1.0	24
76	Suppressing meta-holographic artifacts by laser coherence tuning. Light: Science and Applications, 2021, 10, 104.	7.7	24
77	Remote key establishment by random mode mixing in multimode fibers and optical reciprocity. Optical Engineering, 2019, 58, 1.	0.5	24
78	Demonstration of laser action in a pseudorandom medium. Applied Physics Letters, 2010, 97, .	1.5	23
79	Morphology-induced plasmonic resonances in silver-aluminum alloy thin films. Applied Physics Letters, 2011, 99, .	1.5	22
80	A narrow-band speckle-free light source via random Raman lasing. Journal of Modern Optics, 2016, 63, 46-49.	0.6	22
81	Transporting the Optical Chirality through the Dynamical Barriers in Optical Microcavities. Laser and Photonics Reviews, 2018, 12, 1800027.	4.4	22
82	Electrically pumped semiconductor laser with low spatial coherence and directional emission. Applied Physics Letters, 2019, 115, .	1.5	22
83	Finite-difference time-domain simulation of thermal noise in open cavities. Physical Review A, 2008, 77, .	1.0	20
84	Lasing in Thueâ€“Morse structures with optimized aperiodicity. Applied Physics Letters, 2011, 98, .	1.5	20
85	Controlling multimode coupling by boundary-wave scattering. Physical Review A, 2013, 88, .	1.0	20
86	Angular Memory Effect of Transmission Eigenchannels. Physical Review Letters, 2019, 123, 203901.	2.9	20
87	Control of mesoscopic transport by modifying transmission channels in opaque media. Physical Review B, 2015, 92, .	1.1	19
88	Wavelength-scale microdisks as optical gyroscopes: a finite-difference time-domain simulation study. Journal of the Optical Society of America B: Optical Physics, 2012, 29, 1648.	0.9	18
89	Depth-targeted energy delivery deep inside scattering media. Nature Physics, 2022, 18, 309-315.	6.5	18
90	Effects of localization and amplification on intensity distribution of light transmitted through random media. Physical Review E, 2004, 70, 037603.	0.8	17

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91	Rotation-induced mode coupling in open wavelength-scale microcavities. Physical Review A, 2014, 90, .	1.0	17
92	Fluctuations and correlations of emission from random lasers. Physical Review A, 2016, 93, .	1.0	17
93	Cryptic iridescence in a fossil weevil generated by single diamond photonic crystals. Journal of the Royal Society Interface, 2014, 11, 20140736.	1.5	16
94	Multiscale patterning of a metallic glass using sacrificial imprint lithography. Microsystems and Nanoengineering, 2015, 1, .	3.4	16
95	Controlling mode competition by tailoring the spatial pump distribution in a laser: a resonance-based approach. Optics Express, 2016, 24, 26006.	1.7	16
96	Super- and Anti-Principal-Modes in Multimode Waveguides. Physical Review X, 2017, 7, .	2.8	16
97	Relation between transmission and energy stored in random media with gain. Physical Review B, 2010, 82, .	1.1	15
98	Introducing non-local correlations into laser speckles. Optics Express, 2019, 27, 6057.	1.7	15
99	Giant resonances near the split band edges of two-dimensional photonic crystals. Physical Review A, 2010, 82, .	1.0	14
100	Probing long-range intensity correlations inside disordered photonic nanostructures. Physical Review B, 2014, 90, .	1.1	14
101	Fast laser speckle suppression with an intracavity diffuser. Nanophotonics, 2020, 10, 129-136.	2.9	14
102	Spatial structure of lasing modes in wave-chaotic semiconductor microcavities. New Journal of Physics, 2020, 22, 083002.	1.2	13
103	Directional waveguide coupling from a wavelength-scale deformed microdisk laser. Applied Physics Letters, 2012, 100, .	1.5	12
104	Interaction-induced mode switching in steady-state microlasers. Optics Express, 2016, 24, 41.	1.7	12
105	Direct time-domain observation of transition from strong to weak coupling in a semiconductor microcavity. Applied Physics Letters, 1998, 73, 3031-3033.	1.5	11
106	Lasing modes in polycrystalline and amorphous photonic structures. Physical Review A, 2011, 84, .	1.0	11
107	Control of light diffusion in a disordered photonic waveguide. Applied Physics Letters, 2014, 105, 041104.	1.5	10
108	Enhancing light transmission through a disordered waveguide with inhomogeneous scattering and loss. Applied Physics Letters, 2017, 110, 021103.	1.5	10

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109	Enabling time resolved microscopy with random Raman lasing. Scientific Reports, 2017, 7, 44572.	1.6	10
110	Intracavity frequency-doubled degenerate laser. Optics Letters, 2017, 42, 411.	1.7	10
111	Noise properties of coherent perfect absorbers and critically coupled resonators. Physical Review A, 2013, 87, .	1.0	9
112	Topological defect lasers. Journal of Optics (United Kingdom), 2016, 18, 014005.	1.0	9
113	Multimode lasing in wave-chaotic semiconductor microlasers. Physical Review A, 2019, 100, .	1.0	9
114	Effect of amplification on conductance distribution of a disordered waveguide. Physical Review E, 2006, 74, 056609.	0.8	8
115	The illumination characteristics of operative microscopes. American Journal of Otolaryngology - Head and Neck Medicine and Surgery, 2015, 36, 356-360.	0.6	8
116	Optical resonances in rotating dielectric microcavities of deformed shape. Journal of the Optical Society of America B: Optical Physics, 2015, 32, 1736.	0.9	8
117	Enhanced coupling of light into a turbid medium through microscopic interface engineering. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 7941-7946.	3.3	8
118	Fluctuations and Correlations of Transmission Eigenchannels in Diffusive Media. Physical Review Letters, 2020, 125, 165901.	2.9	8
119	Multimode-fiber-based single-shot full-field measurement of optical pulses. Optics Letters, 2020, 45, 2462.	1.7	8
120	Sensitive control of broad-area semiconductor lasers by cavity shape. APL Photonics, 2022, 7, .	3.0	8
121	Manipulation of High-Order Scattering Processes in Ultrasmall Optical Resonators to Control Far-Field Emission. Physical Review Letters, 2014, 112, 163902.	2.9	7
122	Using geometry to manipulate long-range correlation of light inside disordered media. Physical Review B, 2015, 92, .	1.1	7
123	Statistical description of transport in multimode fibers with mode-dependent loss. New Journal of Physics, 2018, 20, 113028.	1.2	7
124	Random-laser dynamics with temporally modulated pump. Physical Review A, 2019, 99, .	1.0	7
125	Lasing in localized mode at optimized photonic amorphous structure. Applied Physics Letters, 2012, 101, 091101.	1.5	6
126	Photonic crystals with topological defects. Physical Review A, 2015, 91, .	1.0	6

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127	A cascade laser's random walk. Nature, 2013, 503, 200-201.	13.7	5
128	Enhanced optical coupling and Raman scattering via microscopic interface engineering. Applied Physics Letters, 2017, 111, .	1.5	5
129	High-Speed Random-Channel Cryptography in Multimode Fibers. IEEE Photonics Journal, 2021, 13, 1-9.	1.0	5
130	Customizing the Angular Memory Effect for Scattering Media. Physical Review X, 2021, 11, .	2.8	5
131	Ultrahigh-speed, phase-sensitive full-field interferometric confocal microscopy for quantitative microscale physiology. Biomedical Optics Express, 2016, 7, 4674.	1.5	4
132	Condensation of thresholds in multimode microlasers. Physical Review A, 2017, 95, .	1.0	4
133	Controlling Nonlinear Interaction in a Many-Mode Laser by Tuning Disorder. Physical Review Letters, 2022, 128, 143901.	2.9	4
134	Structural Color: How Noniridescent Colors Are Generated by Quasi-ordered Structures of Bird Feathers (Adv. Mater. 26-27/2010). Advanced Materials, 2010, 22, n/a-n/a.	11.1	3
135	Coherent artifact suppression in line-field reflection confocal microscopy using a low spatial coherence light source. Optics Letters, 2016, 41, 4775.	1.7	3
136	Controlling a microdisk laser by local refractive index perturbation. Applied Physics Letters, 2016, 108, .	1.5	3
137	Collective electronic states in inhomogeneous media at critical and subcritical metal concentrations. Physical Review B, 2007, 75, .	1.1	2
138	Minimum reflection channel in amplifying random media. Physical Review B, 2015, 92, .	1.1	2
139	LASING IN RANDOM MEDIA. Advanced Series in Applied Physics, 2010, , 205-251.	0.0	2
140	Secure Optical Communication Using Random Mode Mixing and Time-Reversal Symmetry in Multimode Fibers. , 2014, , .		2
141	Coherent injection of light into an absorbing scattering medium with a microscopic pore. Optics Letters, 2018, 43, 2189.	1.7	2
142	Physics and applications of random lasers. , 2014, , .		1
143	Customizing Speckle Statistics. , 2017, , .		1
144	Nanoscale Coherent Perfect Absorber of Light. , 2011, , .		1

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145	Bandgap enhanced random laser. , 0, , .		0
146	Four-level two-electron FDTD model of lasing action in a semiconductor. , 0, , .		0
147	Optical study of spatially ordered InAs quantum dots in disk-like structures. AIP Conference Proceedings, 2005, , .	0.3	0
148	Chaotic Microcavity Lasers. , 2006, , .		0
149	Controlling Diffusion of Light inside a Disordered Photonic Waveguide. , 2014, , .		0
150	Broadband multimode fiber spectrometer. , 2016, , .		0
151	Principal modes of a multimode fiber with strong mode coupling. , 2016, , .		0
152	Polarization control of light transmission through a multimode fiber with strong polarization mixing. , 2016, , .		0
153	Light transmission channels in random scattering media (Conference Presentation). , 2016, , .		0
154	Lighting up microscopy with random Raman lasing. , 2016, , .		0
155	Spatio-temporal Correlations in Multimode Fibers for Pulse Delivery. , 2019, , .		0
156	Applications of Multimode Fibers for Spectroscopy and Polarization Control. , 2019, , .		0
157	Multimode Fiber Based Single-shot Full-field Temporal Measurement. , 2019, , .		0
158	Spatio-Temporal Dynamics of Microlasers with Chaotic Ray Dynamics. , 2019, , .		0
159	Engineering Laser Coherence and its Applications. , 2019, , .		0
160	Highly parallel ultra-fast random number generation from a stable-cavity broad-area semiconductor laser. , 2021, , .		0
161	Coherent Perfect Absorbers and Coherent Enhancement of Absorption. , 2015, , .		0
162	Modification of Light Transmission Channels by Inhomogeneous Absorption in Random Media. , 2015, , .		0

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163	Control of Transmission Eigenchannels by Modifying the Geometry of Turbid Media. , 2015, , .		0
164	Reduced Reflection of Light in Random Amplifying Media. , 2015, , .		0
165	Tailoring Spatial Coherence of Lasers for Speckle-Free Imaging. , 2015, , .		0
166	Spatial Coherence Engineering of Lasers. , 2016, , .		0
167	Speckle-Based Spectrometers. , 2016, , .		0
168	Inverse Design of Eigenchannels in Scattering Media. , 2017, , .		0
169	Engineering Laser Coherence for Imaging Applications. , 2018, , .		0
170	Inverse Design of Long-range Intensity Correlations in Scattering Media. , 2018, , .		0
171	Spatio-temporal lasing dynamics in wave-chaotic and disordered microcavities. , 2019, , .		0
172	On-chip low spatially coherent laser with directional emission. , 2019, , .		0
173	Spatio-temporal dynamics of highly multimode semiconductor lasers. , 2020, , .		0
174	Broad-area semiconductor laser for ultrafast parallel random number generation. , 2021, , .		0
175	Parallel Generation of Random Numbers Using a Broad-area Stable-cavity Semiconductor Laser. , 2021, , .		0
176	Ultrafast parallel random number generation with a chip-scale semiconductor laser. , 2021, , .		0