

Albert A Friesem

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159
papers

4,737
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34
h-index

64
g-index

192
ext. papers

5,665
ext. citations

3.5
avg, IF

5.19
L-index

#	Paper	IF	Citations
159	Molecular surface recognition: determination of geometric fit between proteins and their ligands by correlation techniques. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1992 , 89, 2195-9	11.5	844
158	The formation of laser beams with pure azimuthal or radial polarization. <i>Applied Physics Letters</i> , 2000 , 77, 3322-3324	3.4	302
157	Holographic axicons: high resolution and long focal depth. <i>Optics Letters</i> , 1991 , 16, 523-5	3	161
156	Two photon absorption and coherent control with broadband down-converted light. <i>Physical Review Letters</i> , 2004 , 93, 023005	7.4	155
155	Temporal shaping of entangled photons. <i>Physical Review Letters</i> , 2005 , 94, 073601	7.4	145
154	Nonlinear interactions with an ultrahigh flux of broadband entangled photons. <i>Physical Review Letters</i> , 2005 , 94, 043602	7.4	132
153	Observing geometric frustration with thousands of coupled lasers. <i>Physical Review Letters</i> , 2013 , 110, 184102	7.4	120
152	Structure and mechanical properties of the soft zone separating bulk dentin and enamel in crowns of human teeth: insight into tooth function. <i>Journal of Structural Biology</i> , 2006 , 153, 188-99	3.4	117
151	Resonant grating-waveguide structures for visible and near-infrared radiation. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 1997 , 14, 2985	1.8	112
150	Light modulation with resonant grating-waveguide structures. <i>Optics Letters</i> , 1996 , 21, 1564-6	3	95
149	Narrow spectral bandwidths with grating waveguide structures. <i>Applied Physics Letters</i> , 1996 , 69, 4154-4156	3.56	82
148	Anisotropic Poisson's ratio and compression modulus of cortical bone determined by speckle interferometry. <i>Journal of Biomechanics</i> , 2007 , 40, 252-64	2.9	80
147	Real-time wavefront shaping through scattering media by all-optical feedback. <i>Nature Photonics</i> , 2013 , 7, 919-924	33.9	72
146	Controlling synchronization in large laser networks. <i>Physical Review Letters</i> , 2012 , 108, 214101	7.4	63
145	Efficient method for controlling the spatial coherence of a laser. <i>Optics Letters</i> , 2013 , 38, 3858-61	3	55
144	Quantum lithography by coherent control of classical light pulses. <i>Optics Express</i> , 2004 , 12, 6600-5	3.3	55
143	Synchronized cluster formation in coupled laser networks. <i>Physical Review Letters</i> , 2011 , 106, 223901	7.4	52

142	Metal-based resonant grating waveguide structures. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 1997 , 14, 588	1.8	52
141	Continuous-phase elements can improve laser beam quality. <i>Optics Letters</i> , 2000 , 25, 939-41	3	52
140	Very narrow spectral filters with multilayered grating-waveguide structures. <i>Applied Physics Letters</i> , 2000 , 77, 1596-1598	3.4	52
139	Fiber lasers generating radially and azimuthally polarized light. <i>Applied Physics Letters</i> , 2008 , 93, 191104	3.4	49
138	Holographic recording and all-optical modulation in photochromic polymers. <i>Optics Letters</i> , 1993 , 18, 1089	3	49
137	Light modulation with electro-optic polymer-based resonant grating waveguide structures. <i>Optics Express</i> , 2005 , 13, 4645-50	3.3	47
136	Planar configuration for image projection. <i>Applied Optics</i> , 2006 , 45, 4005-11	1.7	47
135	Efficient formation of pure helical laser beams. <i>Optics Communications</i> , 2000 , 182, 205-208	2	46
134	Visor-display design based on planar holographic optics. <i>Applied Optics</i> , 1995 , 34, 1352-6	1.7	46
133	Very high-order pure Laguerre-Gaussian mode selection in a passive Q-switched Nd:YAG laser. <i>Optics Express</i> , 2005 , 13, 4952-62	3.3	44
132	Modeling supra-molecular helices: extension of the molecular surface recognition algorithm and application to the protein coat of the tobacco mosaic virus. <i>Journal of Molecular Biology</i> , 1997 , 266, 135-43	6.5	41
131	Complex lasers with controllable coherence. <i>Nature Reviews Physics</i> , 2019 , 1, 156-168	23.6	40
130	Effective grating theory for resonance domain surface-relief diffraction gratings. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2005 , 22, 1115-26	1.8	40
129	Discontinuous phase elements for transverse mode selection in laser resonators. <i>Applied Physics Letters</i> , 1999 , 74, 1373-1375	3.4	40
128	Efficient coherent addition of fiber lasers in free space. <i>Optics Letters</i> , 2007 , 32, 790-2	3	39
127	Efficient conversion of a Gaussian beam to a high purity helical beam. <i>Optics Communications</i> , 2002 , 209, 265-271	2	34
126	Phase shifting speckle interferometry for determination of strain and Young's modulus of mineralized biological materials: a study of tooth dentin compression in water. <i>Journal of Biomedical Optics</i> , 2005 , 10, 024020	3.5	34
125	Compact beam expander with linear gratings. <i>Applied Optics</i> , 2002 , 41, 1236-40	1.7	34

124	Laser mode discrimination with intra-cavity spiral phase elements. <i>Optics Communications</i> , 1999 , 169, 115-121	2	34
123	Analytic design of hybrid diffractive-refractive achromats. <i>Applied Optics</i> , 1993 , 32, 4770-4	1.7	32
122	Passive phase locking of 25 fiber lasers. <i>Optics Letters</i> , 2010 , 35, 1434-6	3	31
121	Efficient multilevel phase holograms for CO(2) lasers. <i>Optics Letters</i> , 1991 , 16, 423-5	3	31
120	Loss enhanced phase locking in coupled oscillators. <i>Physical Review Letters</i> , 2008 , 100, 024102	7.4	30
119	Intracavity coherent addition of Gaussian beam distributions using a planar interferometric coupler. <i>Applied Physics Letters</i> , 2004 , 85, 2187-2189	3.4	30
118	Achromatic phase retarder by slanted illumination of a dielectric grating with period comparable with the wavelength. <i>Applied Optics</i> , 2001 , 40, 2076-80	1.7	30
117	Conversion of a high-order mode beam into a nearly Gaussian beam by use of a single interferometric element. <i>Optics Letters</i> , 2003 , 28, 504-6	3	29
116	Observing Dissipative Topological Defects with Coupled Lasers. <i>Physical Review Letters</i> , 2017 , 119, 013904	9.4	28
115	Intracavity coherent addition of 16 laser distributions. <i>Optics Letters</i> , 2006 , 31, 350-2	3	27
114	Coherent addition of spatially incoherent light beams. <i>Optics Express</i> , 2004 , 12, 4929-34	3.3	24
113	Manipulating the spatial coherence of a laser source. <i>Optics Express</i> , 2015 , 23, 12989-97	3.3	23
112	Diffractive elements for annular laser beam transformation. <i>Applied Physics Letters</i> , 1992 , 61, 381-383	3.4	23
111	Topologically Controlled Intracavity Laser Modes Based on Pancharatnam-Berry Phase. <i>ACS Photonics</i> , 2018 , 5, 1817-1821	6.3	22
110	Optical correlation with totally incoherent light. <i>Optics Letters</i> , 1999 , 24, 1469-71	3	22
109	Broadband sum-frequency generation as an efficient two-photon detector for optical tomography. <i>Optics Express</i> , 2007 , 15, 8760-9	3.3	21
108	Measuring maximal eigenvalue distribution of Wishart random matrices with coupled lasers. <i>Physical Review E</i> , 2012 , 85, 020101	2.4	20
107	Passive Laser Beam Combining With Intracavity Interferometric Combiners. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2009 , 15, 301-311	3.8	20

106	Compact holographic beam expander. <i>Optics Letters</i> , 1993 , 18, 1268-70	3	20
105	Efficient formation of a high-quality beam from a pure high-order Hermite-Gaussian mode. <i>Optics Letters</i> , 2002 , 27, 1501-3	3	19
104	On the limits of optical interconnects. <i>Applied Optics</i> , 1992 , 31, 5426-30	1.7	19
103	Rapid laser solver for the phase retrieval problem. <i>Science Advances</i> , 2019 , 5, eaax4530	14.3	17
102	Spin-controlled twisted laser beams: intra-cavity multi-tasking geometric phase metasurfaces. <i>Optics Express</i> , 2018 , 26, 905-916	3.3	17
101	Fourier transformation with a planar holographic doublet. <i>Optics Letters</i> , 1995 , 20, 495-7	3	17
100	Characterization of photodeposited selenium planar structures by scanning force microscopy. <i>Journal of Applied Physics</i> , 1995 , 77, 6208-6213	2.5	17
99	Real-time measurement of unique space-variant polarizations. <i>Optics Express</i> , 2010 , 18, 10805-12	3.3	16
98	Optical coordinate transformations. <i>Applied Optics</i> , 1992 , 31, 1067-73	1.7	16
97	Generating flat-top beams with extended depth of focus. <i>Applied Optics</i> , 2018 , 57, 4583-4589	1.7	15
96	Talbot diffraction and Fourier filtering for phase locking an array of lasers 2017 , 56, A126		15
95	Fiber amplification of radially and azimuthally polarized laser light. <i>Optics Letters</i> , 2010 , 35, 1332-4	3	15
94	Simultaneous coherent and spectral addition of fiber lasers. <i>Optics Letters</i> , 2008 , 33, 648-50	3	15
93	Improving the output beam quality of multimode laser resonators. <i>Optics Express</i> , 2005 , 13, 2722-30	3.3	15
92	Towards ultranarrow bandwidth polymer-based resonant grating waveguide structures. <i>Applied Physics Letters</i> , 2004 , 84, 472-474	3.4	15
91	Enhanced two-photon fluorescence excitation by resonant grating waveguide structures. <i>Optics Letters</i> , 2004 , 29, 1989-91	3	15
90	Laser operation with two orthogonally polarized transverse modes. <i>Applied Optics</i> , 2002 , 41, 3634-7	1.7	15
89	Computer-generated relief gratings as space-variant polarization elements. <i>Optics Letters</i> , 1992 , 17, 1541	3	15

88	All-optical bipolar neural network with polarization-modulating neurons. <i>Optics Letters</i> , 1991 , 16, 1692-4		15
87	Phase locking of two coupled lasers with many longitudinal modes. <i>Optics Letters</i> , 2010 , 35, 526-8	3	14
86	Long-range surface plasmon resonances in grating-waveguide structures. <i>Applied Physics Letters</i> , 1997 , 70, 1210-1212	3.4	14
85	Analytic design and solutions for resonance domain diffractive optical elements. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2007 , 24, 687-95	1.8	14
84	Efficient mode transformations of degenerate Laguerre-Gaussian beams. <i>Applied Optics</i> , 2004 , 43, 2561-7	1.7	14
83	Realization of perfect shuffle and inverse perfect shuffle transforms with holographic elements. <i>Applied Optics</i> , 1992 , 31, 1810-2	1.7	14
82	Phase locking of two fiber lasers with time-delayed coupling. <i>Optics Letters</i> , 2009 , 34, 1864-6	3	13
81	Rapid and efficient formation of propagation invariant shaped laser beams. <i>Optics Express</i> , 2018 , 26, 4431-4439	3.3	12
80	White-light holographic display based on planar optics. <i>Optics Letters</i> , 1993 , 18, 1265-7	3	12
79	Spatiotemporal supermodes: Rapid reduction of spatial coherence in highly multimode lasers. <i>Physical Review A</i> , 2018 , 98,	2.6	11
78	Design and experimental investigation of highly efficient resonance-domain diffraction gratings in the visible spectral region. <i>Applied Optics</i> , 2012 , 51, 8074-80	1.7	11
77	Intracavity coherent addition of single high-order modes. <i>Optics Letters</i> , 2005 , 30, 1770-2	3	11
76	Nonlinear immunofluorescent assay for androgenic hormones based on resonant structures. <i>Optics Express</i> , 2008 , 16, 13315-22	3.3	10
75	Passive intra-cavity phase locking of laser channels. <i>Optics Communications</i> , 2006 , 263, 60-64	2	10
74	Rapid fair sampling of the XY spin Hamiltonian with a laser simulator. <i>Physical Review Research</i> , 2020 , 2,	3.9	10
73	Phase locking of even and odd number of lasers on a ring geometry: effects of topological-charge. <i>Optics Express</i> , 2015 , 23, 13041-50	3.3	9
72	Conversion of out-of-phase to in-phase order in coupled laser arrays with second harmonics. <i>Photonics Research</i> , 2015 , 3, 77	6	9
71	Phase locking of lasers with intracavity polarization elements. <i>Optics Letters</i> , 2008 , 33, 2305-7	3	9

70	Design and experiments of planar optical light guides for virtual image displays 2004 ,		9
69	Apochromatic optical correlation. <i>Optics Letters</i> , 2000 , 25, 776-8	3	9
68	Spatial-frequency response of holographic gratings photodeposited from inorganic colloids. <i>Applied Optics</i> , 1994 , 33, 4988-92	1.7	9
67	Heterostructure multilevel binary optics. <i>Optics Letters</i> , 1991 , 16, 1460-2	3	9
66	Improved Phase Locking of Laser Arrays with Nonlinear Coupling. <i>Physical Review Letters</i> , 2020 , 124, 133901	7.4	8
65	Manipulating the Wigner distribution of high order laser modes. <i>Optics Communications</i> , 2001 , 193, 227-232		8
64	Compact red-green-blue beam illuminator and expander. <i>Applied Optics</i> , 2002 , 41, 1229-35	1.7	8
63	Flatland optics: fundamentals. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2000 , 17, 1755-62	1.8	8
62	Anomaly in a high-numerical-aperture diffractive focusing lens. <i>Optics Letters</i> , 2000 , 25, 439-41	3	8
61	Three-dimensional optical metrology with color-coded extended depth of focus. <i>Optics Letters</i> , 1999 , 24, 439-41	3	8
60	Compensation of the wavelength dependence in diffractive star couplers. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 1995 , 12, 1290	1.8	8
59	Storage mechanism of volume phase holograms recorded in silver halide emulsions. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 1994 , 11, 2004	1.8	8
58	Coupling of laser arrays with intracavity elements in the far-field. <i>OSA Continuum</i> , 2019 , 2, 2077	1.4	8
57	Roadmap on multimode light shaping. <i>Journal of Optics (United Kingdom)</i> ,	1.7	8
56	Enhanced coherence of weakly coupled lasers. <i>Optics Letters</i> , 2011 , 36, 1320-2	3	7
55	Fabrication of high-aspect-ratio resonance domain diffraction gratings in fused silica. <i>Optical Engineering</i> , 2012 , 51, 118002	1.1	7
54	Compact optical crossbar switch. <i>Applied Optics</i> , 1997 , 36, 1039-44	1.7	7
53	Compact planar optical correlator. <i>Optics Letters</i> , 1997 , 22, 925-7	3	7

52	Phase locking and coherent combining of high-order-mode fiber lasers. <i>Optics Letters</i> , 2008 , 33, 2134-6	3	7
51	Role of photonic bandgaps in polarization-independent grating waveguide structures. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2008 , 25, 1435-43	1.8	7
50	Upscaling coherent addition of laser distributions. <i>Optics Communications</i> , 2007 , 275, 389-393	2	7
49	Concentration and collimation of diffuse linear light sources. <i>Applied Physics Letters</i> , 1993 , 62, 334-336	3.4	7
48	Blazed holographic gratings for polychromatic and multidirectional incidence light. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 1992 , 9, 1196	1.8	7
47	Diffractive optics: Design, realization, and applications. <i>Fiber and Integrated Optics</i> , 1997 , 16, 1-25	0.8	6
46	Effect of quantum noise on coupled laser oscillators. <i>Physical Review A</i> , 2008 , 77,	2.6	6
45	Coherent addition of two dimensional array of fiber lasers. <i>Optics Communications</i> , 2008 , 281, 6091-6093	3	6
44	Passive intracavity coherent addition of nine laser distributions. <i>Applied Physics Letters</i> , 2006 , 88, 041103	3.4	6
43	Mode-matched phase diffractive optical element for detecting laser modes with spiral phases. <i>Applied Optics</i> , 2007 , 46, 7823-8	1.7	6
42	Recording of mid-infrared radiation in photochromic polymers. <i>Journal of Applied Physics</i> , 1993 , 74, 4248-4250	2.4	6
41	Rotation-invariant correlation with incoherent light. <i>Applied Optics</i> , 1991 , 30, 4175-8	1.7	6
40	High-resolution digital spatial control of a highly multimode laser. <i>Optica</i> , 2021 , 8, 880	8.6	6
39	Phase-locking-level statistics of coupled random fiber lasers. <i>Physical Review E</i> , 2012 , 86, 041142	2.4	5
38	Design of a high-power continuous source of broadband down-converted light. <i>Physical Review A</i> , 2006 , 74,	2.6	5
37	Color correction in planar optics configurations. <i>Optics Letters</i> , 2006 , 31, 1522-4	3	5
36	Compact wavelength division multiplexers and demultiplexers. <i>Applied Optics</i> , 2002 , 41, 1256-61	1.7	5
35	Reflective and refractive systems for general two-dimensional beam transformations. <i>Applied Optics</i> , 1994 , 33, 815-20	1.7	5

34	Coupled lasers: phase versus chaos synchronization. <i>Optics Letters</i> , 2013 , 38, 4174-7	3	4
33	Synchronization of Chaotic Fiber Lasers With Reduced External Coupling. <i>IEEE Journal of Quantum Electronics</i> , 2010 , 46, 1821-1826	2	4
32	General linear optical coordinate transformations. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2000 , 17, 1864-9	1.8	4
31	Flatland optics. II. Basic experiments. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2001 , 18, 1056-61	1.8	4
30	Computer-originated planar holographic optical elements. <i>Applied Optics</i> , 1998 , 37, 3031-7	1.7	4
29	Temporal Holographic Response in Photochromic Polymer Films. <i>Molecular Crystals and Liquid Crystals</i> , 1994 , 246, 367-370		4
28	Holographic focusing elements for far-IR radiation. <i>Measurement Science and Technology</i> , 1990 , 1, 59-64	2	4
27	Curved holographic elements for optical coordinate transformations. <i>Optics Letters</i> , 1991 , 16, 1430-2	3	4
26	Fast laser speckle suppression with an intracavity diffuser. <i>Nanophotonics</i> , 2020 , 10, 129-136	6.3	4
25	Dynamics of dissipative topological defects in coupled phase oscillators. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2019 , 52, 205401	1.3	3
24	Principal modes in fiber amplifiers. <i>Optics Letters</i> , 2011 , 36, 388-90	3	3
23	Real time achromatic measurement of space-variant polarizations. <i>Applied Physics Letters</i> , 2011 , 98, 141107	3.07	3
22	Modal dynamics in multimode fibers. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2012 , 29, 541-4	1.8	3
21	Increasing output energy from a passively Q-switched Er:glass laser. <i>Applied Optics</i> , 2007 , 46, 7426-31	1.7	3
20	Flatland optics. III. Achromatic diffraction. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2001 , 18, 2095-7	1.8	3
19	Recent developments in passive phase locking and coherent combining of lasers 2012 ,		2
18	Fabrication and testing of highly efficient resonance domain diffractive optical elements 2011 ,		2
17	Suppression of thermal lensing effects in intra-cavity coherent combining of lasers. <i>Optics Communications</i> , 2007 , 276, 139-144	2	2

16	Tooth and bone deformation: structure and material properties by ESPI 2006 , 6341, 49		2
15	Improving the Beam Quality Of High-Order Laser Modes. <i>Optics and Photonics News</i> , 2001 , 12, 55	1.9	2
14	Role of rank in matrix representation of optical interconnects. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 1993 , 10, 1725	1.8	2
13	Single frequency lasing using coherent combining. <i>Optics Communications</i> , 2009 , 282, 1861-1866	2	1
12	Passive Beam Combining in Compact Slab Lasers. <i>IEEE Journal of Quantum Electronics</i> , 2010 , 46, 76-79	2	1
11	Novel Resonant Structures for Laser Light Modulation. <i>Optics and Photonics News</i> , 1996 , 7, 31	1.9	1
10	Experimental demonstration of crowd synchrony and first-order transition with lasers. <i>Physical Review Research</i> , 2020 , 2,	3.9	1
9	Phase locking of lasers with Gaussian coupling.. <i>Optics Express</i> , 2022 , 30, 1114-1129	3.3	1
8	Formation of a planar coarse wavelength-division multiplexer and demultiplexer with reflection volume phase gratings. <i>Applied Optics</i> , 2002 , 41, 5851-6	1.7	0
7	Controlling Nonlinear Interaction in a Many-Mode Laser by Tuning Disorder.. <i>Physical Review Letters</i> , 2022 , 128, 143901	7.4	0
6	Coherent Combining and Phase Locking of Fiber Lasers 2013 , 371-400		
5	Phase locking of lasers with self-stabilized minimal coupling. <i>Optics Express</i> , 2012 , 20, 28163-70	3.3	
4	The Role of Geometric Fit Between Protein Molecules and their Ligands in Determining Biological Specificity. <i>Advances in Molecular and Cell Biology</i> , 1996 , 623-637		
3	Intracavity phase element improves laser mode stability 2006 , 6346, 831		
2	Volume Phase Transmission Gratings and Compact Configurations for Coarse Wavelength Division Multiplexing and Demultiplexing. <i>Optical Review</i> , 2003 , 10, 8-12	0.9	
1	Cluster synchronization in large laser networks. <i>IEICE Proceeding Series</i> , 2014 , 1, 61-64		