

Oren Cohen

List of Publications by Year in descending order

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166
papers

8,256
citations

61857

43
h-index

45213

90
g-index

168
all docs

168
docs citations

168
times ranked

4493
citing authors

#	ARTICLE	IF	CITATIONS
1	Phase Retrieval with Application to Optical Imaging: A contemporary overview. IEEE Signal Processing Magazine, 2015, 32, 87-109.	4.6	735
2	Solitons in Nonlinear Media with an Infinite Range of Nonlocality: First Observation of Coherent Elliptic Solitons and of Vortex-Ring Solitons. Physical Review Letters, 2005, 95, 213904.	2.9	562
3	Spin angular momentum and tunable polarization in high-harmonic generation. Nature Photonics, 2014, 8, 543-549.	15.6	477
4	Generation of bright phase-matched circularly-polarized extreme ultraviolet high harmonics. Nature Photonics, 2015, 9, 99-105.	15.6	403
5	Observation of Vortex-Ring "Discrete" Solitons in 2D Photonic Lattices. Physical Review Letters, 2004, 92, 123904.	2.9	347
6	Long-range interactions between optical solitons. Nature Physics, 2006, 2, 769-774.	6.5	340
7	Phase matching of high harmonic generation in the soft and hard X-ray regions of the spectrum. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 10516-10521.	3.3	334
8	Lensless Diffractive Imaging Using Tabletop Coherent High-Harmonic Soft-X-Ray Beams. Physical Review Letters, 2007, 99, 098103.	2.9	267
9	Two-dimensional multipole solitons in nonlocal nonlinear media. Optics Letters, 2006, 31, 3312.	1.7	235
10	Bright circularly polarized soft X-ray high harmonics for X-ray magnetic circular dichroism. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 14206-14211.	3.3	235
11	Two-Dimensional Optical Lattice Solitons. Physical Review Letters, 2003, 91, 213906.	2.9	222
12	Quasi-phase-matching and quantum-path control of high-harmonic generation using counterpropagating light. Nature Physics, 2007, 3, 270-275.	6.5	211
13	Spatial photonics in nonlinear waveguide arrays. Optics Express, 2005, 13, 1780.	1.7	193
14	Sparsity-based single-shot subwavelength coherent diffractive imaging. Nature Materials, 2012, 11, 455-459.	13.3	175
15	Extended phase matching of high harmonics driven by mid-infrared light. Optics Letters, 2008, 33, 2128.	1.7	156
16	Harnessing Attosecond Science in the Quest for Coherent X-rays. Science, 2007, 317, 775-778.	6.0	141
17	Floquet group theory and its application to selection rules in harmonic generation. Nature Communications, 2019, 10, 405.	5.8	135
18	Synthetic chiral light for efficient control of chiral light-matter interaction. Nature Photonics, 2019, 13, 866-871.	15.6	132

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19	Strong-field ionization with two-color circularly polarized laser fields. <i>Physical Review A</i> , 2015, 91, .	1.0	124
20	Deep learning reconstruction of ultrashort pulses. <i>Optica</i> , 2018, 5, 666.	4.8	124
21	Single-shot ptychography. <i>Optica</i> , 2016, 3, 9.	4.8	115
22	Tomographic reconstruction of circularly polarized high-harmonic fields: 3D attosecond metrology. <i>Science Advances</i> , 2016, 2, e1501333.	4.7	103
23	Brillouin Zone Spectroscopy of Nonlinear Photonic Lattices. <i>Physical Review Letters</i> , 2005, 94, 163902.	2.9	102
24	Observation of random-phase lattice solitons. <i>Nature</i> , 2005, 433, 500-503.	13.7	96
25	Observation of Second-Band Vortex Solitons in 2D Photonic Lattices. <i>Physical Review Letters</i> , 2005, 95, 053904.	2.9	91
26	Multiband Vector Lattice Solitons. <i>Physical Review Letters</i> , 2003, 91, 113901.	2.9	87
27	Ptychographic reconstruction algorithm for frequency-resolved optical gating: super-resolution and supreme robustness. <i>Optica</i> , 2016, 3, 1320.	4.8	86
28	Nanoscale magnetic imaging using circularly polarized high-harmonic radiation. <i>Science Advances</i> , 2017, 3, eaao4641.	4.7	85
29	Holographic solitons. <i>Optics Letters</i> , 2002, 27, 2031.	1.7	81
30	Ultrafast extreme ultraviolet holography: dynamic monitoring of surface deformation. <i>Optics Letters</i> , 2007, 32, 286.	1.7	80
31	Sparse Phase Retrieval from Short-Time Fourier Measurements. <i>IEEE Signal Processing Letters</i> , 2015, 22, 638-642.	2.1	79
32	Incoherent spatial solitons in effectively instantaneous nonlinear media. <i>Nature Photonics</i> , 2008, 2, 371-376.	15.6	73
33	Collisions between Optical Spatial Solitons Propagating in Opposite Directions. <i>Physical Review Letters</i> , 2002, 89, 133901.	2.9	71
34	High-Order Harmonic Generation from Ions in a Capillary Discharge. <i>Physical Review Letters</i> , 2006, 96, 203001.	2.9	65
35	Incoherent solitons in instantaneous nonlocal nonlinear media. <i>Physical Review E</i> , 2006, 73, 015601.	0.8	64
36	Optical Chirality in Nonlinear Optics: Application to High Harmonic Generation. <i>Physical Review Letters</i> , 2018, 120, 133206.	2.9	57

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37	Two-dimensional higher-band vortex lattice solitons. Optics Letters, 2004, 29, 2049.	1.7	55
38	In-line production of a bi-circular field for generation of helically polarized high-order harmonics. Applied Physics Letters, 2016, 108, .	1.5	55
39	Ultrasensitive Chiral Spectroscopy by Dynamical Symmetry Breaking in High Harmonic Generation. Physical Review X, 2019, 9, .	2.8	55
40	Grating-Assisted Phase Matching in Extreme Nonlinear Optics. Physical Review Letters, 2007, 99, 053902.	2.9	51
41	Spatial Thirring-type solitons via electromagnetically induced transparency. Optics Letters, 2005, 30, 3374.	1.7	49
42	The quantum-optical nature of high harmonic generation. Nature Communications, 2020, 11, 4598.	5.8	49
43	Random-Phase Solitons in Nonlinear Periodic Lattices. Physical Review Letters, 2004, 92, 223901.	2.9	45
44	Finite element simulation of a perturbed axial-symmetric whispering-gallery mode and its use for intensity enhancement with a nanoparticle coupled to a microtoroid. Optics Express, 2013, 21, 14169.	1.7	43
45	Long-lived waveguides and sound-wave generation by laser filamentation. Physical Review A, 2014, 90, .	1.0	42
46	Enhanced High Harmonic Generation from Multiply Ionized Argon above 500ÅeV through Laser Pulse Self-Compression. Physical Review Letters, 2009, 103, 143901.	2.9	41
47	Helicity-selective phase-matching and quasi-phase matching of circularly polarized high-order harmonics: towards chiral attosecond pulses. Journal of Physics B: Atomic, Molecular and Optical Physics, 2016, 49, 123501.	0.6	41
48	Spatial vector solitons consisting of counterpropagating fields. Optics Letters, 2002, 27, 2013.	1.7	38
49	Probe of High-Order Harmonic Generation in a Hollow Waveguide Geometry using Counterpropagating Light. Physical Review Letters, 2007, 98, 123904.	2.9	37
50	Interferometric attosecond lock-in measurement of extreme-ultraviolet circular dichroism. Nature Photonics, 2019, 13, 198-204.	15.6	37
51	Interactions between spatial screening solitons propagating in opposite directions. Journal of the Optical Society of America B: Optical Physics, 2004, 21, 1354.	0.9	36
52	Background-Free Measurement of Ring Currents by Symmetry-Breaking High-Harmonic Spectroscopy. Physical Review Letters, 2019, 123, 103202.	2.9	36
53	Quasi-phase matching and characterization of high-order harmonic generation in hollow waveguides using counterpropagating light. Optics Express, 2008, 16, 6544.	1.7	35
54	Ptychographic ultrahigh-speed imaging. Optics Express, 2017, 25, 10997.	1.7	33

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55	Sparsity-based super-resolved coherent diffraction imaging of one-dimensional objects. Nature Communications, 2015, 6, 8209.	5.8	32
56	Spatiotemporal pulse-train solitons. Optics Express, 2009, 17, 7052.	1.7	24
57	Optimizing quasi-phase matching of high harmonic generation using counterpropagating pulse trains. Optics Letters, 2007, 32, 2975.	1.7	23
58	Multiplexed single-shot ptychography. Optics Letters, 2018, 43, 5379.	1.7	22
59	Experimental time-resolved imaging by multiplexed ptychography. Optics Express, 2019, 27, 24568.	1.7	21
60	Deep learning reconstruction of ultrashort pulses from 2D spatial intensity patterns recorded by an all-in-line system in a single-shot. Optics Express, 2020, 28, 7528.	1.7	21
61	Quasi-phase-matching and dispersion characterization of harmonic generation in the perturbative regime using counterpropagating beams. Optics Express, 2008, 16, 15923.	1.7	20
62	Cross-phase-modulation nonlinearities and holographic solitons in periodically poled photovoltaic photorefractives. Optics Letters, 2006, 31, 954.	1.7	19
63	Quasi-phase matching of high-order harmonic generation at high photon energies using counterpropagating pulses. Optics Letters, 2008, 33, 174.	1.7	19
64	Generation of high-order harmonics with controllable elliptical polarization. Optics Letters, 2013, 38, 223.	1.7	18
65	Grating-Mediated Waveguiding. Physical Review Letters, 2004, 93, 103902.	2.9	17
66	Unified Microscopic-Macroscopic Formulation of High-Order Difference-Frequency Mixing in Plasmas. Physical Review Letters, 2007, 98, 043903.	2.9	16
67	Detecting multiple chiral centers in chiral molecules with high harmonic generation. Optics Express, 2022, 30, 3729.	1.7	16
68	Quasi-periodic and random quasi-phase matching of high harmonic generation. Optics Letters, 2008, 33, 1936.	1.7	15
69	Deep neural networks in single-shot ptychography. Optics Express, 2020, 28, 17511.	1.7	15
70	Observation of vortex-ring "discrete" solitons in 2D photonic lattices. , 2004, , .		15
71	Selective suppression of high-order harmonics within phase-matched spectral regions. Optics Letters, 2017, 42, 1349.	1.7	14
72	Gap random-phase lattice solitons. Optics Express, 2005, 13, 5013.	1.7	12

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73	Self-trapped leaky waves and their interactions. <i>Physical Review A</i> , 2009, 80, .	1.0	12
74	Sawtooth grating-assisted phase-matching. <i>Optics Express</i> , 2010, 18, 22686.	1.7	12
75	Efficient coherent diffractive imaging for sparsely varying objects. <i>Optics Express</i> , 2013, 21, 6327.	1.7	12
76	Sparsity-based Ankylography for Recovering 3D molecular structures from single-shot 2D scattered light intensity. <i>Nature Communications</i> , 2015, 6, 7950.	5.8	12
77	Degree of chirality of electromagnetic fields and maximally chiral light. <i>Physical Review A</i> , 2020, 101, .	1.0	12
78	Probing ultrafast electron correlations in high harmonic generation. <i>Physical Review Research</i> , 2020, 2, .	1.3	12
79	Observation of random-phase gap solitons in photonic lattices. <i>Optics Letters</i> , 2006, 31, 483.	1.7	11
80	Quantum-path control in high-order harmonic generation at high photon energies. <i>New Journal of Physics</i> , 2008, 10, 025021.	1.2	11
81	Spectroscopy of atomic orbital sizes using bi-elliptical high-order harmonic generation. <i>Physical Review A</i> , 2019, 100, .	1.0	11
82	Grating-mediated wave guiding and holographic solitons. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2005, 22, 1349.	0.9	10
83	Quasi-phase-matching of only even-order high harmonics. <i>Optics Express</i> , 2014, 22, 7145.	1.7	10
84	Multiplexed FROG. <i>Optics Express</i> , 2017, 25, 33007.	1.7	9
85	Interlocked attosecond pulse trains in slightly bi-elliptical high harmonic generation. <i>JPhys Photonics</i> , 2020, 2, 034005.	2.2	9
86	Self-phase modulation spectral broadening in two-dimensional spatial solitons: toward three-dimensional spatiotemporal pulse-train solitons. <i>Optics Letters</i> , 2012, 37, 5196.	1.7	8
87	Selection rules in symmetry-broken systems by symmetries in synthetic dimensions. <i>Nature Communications</i> , 2022, 13, 1312.	5.8	8
88	Pattern formation in a ring cavity with temporally incoherent feedback. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2004, 21, 2197.	0.9	7
89	High harmonic generation with fully tunable polarization by train of linearly polarized pulses. <i>New Journal of Physics</i> , 2017, 19, 023051.	1.2	7
90	Polarization-fan high-order harmonics. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2017, 50, 034001.	0.6	6

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91	Three-Dimensional Spatiotemporal Pulse-Train Solitons. <i>Physical Review X</i> , 2017, 7, .	2.8	6
92	High-order harmonic generation of pulses with multiple timescales: selection rules, carrier envelope phase and cutoff energy. <i>Molecular Physics</i> , 2019, 117, 1956-1963.	0.8	6
93	A dynamical symmetry triad in high-harmonic generation revealed by attosecond recollision control. <i>New Journal of Physics</i> , 2020, 22, 053017.	1.2	6
94	Narrow-bandwidth high-order harmonics driven by long-duration hot spots. <i>New Journal of Physics</i> , 2012, 14, 063036.	1.2	5
95	Phase modulation in polarization beating quasi-phase-matching of high-order-harmonic generation. <i>Physical Review A</i> , 2015, 92, .	1.0	5
96	Unambiguous definition of handedness for locally chiral light. <i>Physical Review A</i> , 2022, 105, .	1.0	5
97	High-resolution (diffraction limited) single-shot multiplexed coded-aperture ptychography. <i>Journal of Optics (United Kingdom)</i> , 2020, 22, 075608.	1.0	4
98	Selection rules for breaking selection rules. <i>New Journal of Physics</i> , 2021, 23, 103039.	1.2	4
99	Bright Circularly Polarized Soft X-Ray High Harmonics for X-Ray Magnetic Circular Dichroism. , 2015, , .		3
100	High Harmonics with Controllable Polarization by a Burst of Linearly-Polarized Driver Pulses. <i>Photonics</i> , 2017, 4, 31.	0.9	3
101	Self-trapped leaky waves in lattices: discrete and Bragg soleakons. <i>Optics Express</i> , 2013, 21, 19690.	1.7	2
102	Circularly polarized high harmonic generation through virtual circular birefringence. <i>Applied Physics Letters</i> , 2021, 118, 221106.	1.5	2
103	V-FROG"single-scan vectorial FROG. <i>JPhys Photonics</i> , 2021, 3, 034017.	2.2	2
104	Introduction to Solitons in Photonic Lattices. <i>Springer Series in Optical Sciences</i> , 2010, , 73-99.	0.5	2
105	Attosecond-precision Coherent Control of Electron Recombination in the Polarization Plane. , 2017, , .		2
106	Sparsity-based super-resolution coherent diffractive imaging of (practically) 1D images using extreme UV radiation.. , 2013, , .		2
107	Talbot solitons. <i>Optics Letters</i> , 2008, 33, 830.	1.7	1
108	Attosecond pulses with sophisticated spatio-spectral waveforms: spatio-spectral Airy and auto-focusing beams. <i>Optics Express</i> , 2011, 19, 21730.	1.7	1

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109	Sparsity-based single-shot sub-wavelength coherent diffractive imaging. , 2012, , .		1
110	X-Ray Magnetic Circular Dichroism Probed Using High Harmonics. Springer Proceedings in Physics, 2015, , 60-63.	0.1	1
111	Three-Dimensional Spatiotemporal Pulse-Train Solitons. , 0, .		1
112	High-Order Harmonics of Bichromatic Counter-Rotating Elliptically-Polarized Drivers: Fully Controlled Polarization State and Novel Selection Rules. , 2013, , .		1
113	Reconstruction of an isolated burst of (non-repetitive) pulses from a single FROG trace. , 2017, , .		1
114	Brillouin-zone spectroscopy of nonlinear photonic lattices. , 2005, , .		1
115	Observation of Random phase Gap Solitons in 2D photonic lattices. , 2005, , .		1
116	Nanoscale Imaging of Magnetic Domains using a High-Harmonic Source. , 2017, , .		1
117	Three-Dimensional Spatiotemporal Pulse-Train Solitons. , 2017, , .		1
118	Spatial Thirring-type solitons via electromagnetically induced transparency. , 2006, , .		0
119	High harmonic generation from ions in a capillary discharge. , 2006, , .		0
120	Phase-matching in isotropic and homogeneous materials via Talbot effect. , 2006, , .		0
121	Observation of random phase gap solitons in 2D photonic lattices. , 2006, , .		0
122	Infinite-range interactions between solitons in highly-nonlocal nonlinear media. , 2006, , .		0
123	Transient 1D holographic detection of surface corrugation with extreme ultraviolet radiation. , 2006, , .		0
124	Incoherent solitons in effectively-instantaneous nonlocal nonlinear media. , 2007, , .		0
125	Attosecond Nonlinear Optics in Plasmas for Coherent X-ray Generation. AIP Conference Proceedings, 2007, , .	0.3	0
126	Scalar and vector localized leaky waves through self-defocusing nonlinearity. Physical Review A, 2013, 88, .	1.0	0

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127	Bright High Harmonics with Tunable Polarization. , 2015, , .		0
128	Circularly Polarized Soft X-Ray High Harmonics and XMCD on a Tabletop. , 2015, , .		0
129	Spatiotemporal Self-Localization of Pulse-Train Beams: Toward 3D Solitons in Homogeneous Media. , 2016, , .		0
130	Nanoscale magnetic imaging using a compact high-harmonic source. , 2017, , .		0
131	Attosecond-precision coherent control of electron recombination in the polarization plane. , 2017, , .		0
132	Ultra-High Speed Microscopy of Complex (Amplitude and Phase) Samples Using a Single Camera Snapshot. , 2017, , .		0
133	Multi-Scale Symmetries and Selection Rules in High Harmonic Generation. , 2019, , .		0
134	Polarization-Resolved High Harmonic Spectroscopy of Interlocked Attosecond Bursts. , 2019, , .		0
135	Interferometric Attosecond Lock-in Measurement of Extreme Ultraviolet Circular Dichroism. , 2019, , .		0
136	Bi-Elliptical High Harmonic Spectroscopy of Atomic Potentials. , 2019, , .		0
137	All-Optical Background-Free Detection of Ring Currents by Dynamical Symmetry Breaking High Harmonic Spectroscopy. , 2019, , .		0
138	Carrier Envelope Phase Dependence of High Harmonic Generation from Long Duration Multi-Cycle Multi-Timescale Pump Pulses. , 2019, , .		0
139	Electric-Dipole Based Chiral Sensitivity in High Harmonic Generation by Dynamical Symmetry Breaking Spectroscopy. , 2019, , .		0
140	Nonlinear Optics Selection Rules by Dynamical Symmetries in Synthetic Dimensions. , 2021, , .		0
141	Interactions between spatial screening solitons propagating in opposite directions. , 2004, , .		0
142	Grating Mediated Waveguiding and Holographic Solitons. , 2004, , .		0
143	Gap random-phase lattice solitons. , 2005, , .		0
144	Spatial gap solitons in 2D photonic lattices. , 2005, , .		0

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145	Observation of 2nd band vortex-ring soliton in 2D photonic lattices. , 2005, , .		0
146	Random-phase spatial solitons in effectively-instantaneous nonlocal nonlinear media. , 2007, , .		0
147	Optically-induced Quasi-Phase-Matching in high-harmonic generation. , 2008, , .		0
148	Sawtooth grating-assisted-phase-matching. , 2009, , .		0
149	Spatiotemporal Pulse-Train Solitons. , 2009, , .		0
150	Application of Quasiperiodic and Random Quasi-Phase-Matching to High-Harmonic-Generation. , 2009, , .		0
151	Sawtooth grating-assisted phase-matching. Optics Express, 2010, 18, 21583.	1.7	0
152	Direct Observation of Rescattering from Strong Field Ionization by Two-Color Circularly Polarized Laser Fields. , 2015, , .		0
153	Probing Ultrafast Magnetization Dynamics using Bright Circularly Polarized High Harmonics. , 2015, , .		0
154	Single-shot ptychography & sparsity-based subwavelength ptychography. , 2015, , .		0
155	Towards ultrafast subwavelength microscopy. , 2016, , .		0
156	Simple Apparatus for Converting Standard Sources of Linearly-Polarized High Harmonics into Sources of Circularly-Polarized High Harmonics. , 2016, , .		0
157	General Formalism for Dynamical Symmetries and Selection Rules in High Harmonic Generation. , 2017, , .		0
158	General Group Theory Derivation for Selection Rules in Nonlinear Light-Matter Interactions. , 2019, , .		0
159	Universal scaling laws of symmetry breaking in Floquet systems: application to harmonic generation. , 2019, , .		0
160	Experimental Demonstration of Time-Resolved Imaging by Multiplexed Ptychography (TIMP). , 2019, , .		0
161	Ultrafast All-Optical Detection of Chiral Degrees of Freedom by Symmetry Breaking High Harmonic Spectroscopy. , 2019, , .		0
162	Deep Learning Single-Shot Ptychography: Algorithm and Experiment. , 2020, , .		0

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163	Diffraction-limited Quantitative Phase Microscopy at peta-Hertz Rates. , 2021, , .		0
164	Maximizing and Controlling the Degree of Local Chirality of Electromagnetic Fields. , 2020, , .		0
165	Single-Shot Ultrafast Pulse Reconstruction with Deep Learning. , 2020, , .		0
166	Selection rules by multi-scale dynamical symmetries & symmetries in synthetic dimensions. , 2021, , .		0