

Alexander K Popov

List of Publications by Year in descending order

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128
papers

1,286
citations

643344

15
h-index

466096

32
g-index

133
all docs

133
docs citations

133
times ranked

702
citing authors

#	ARTICLE	IF	CITATIONS
1	Shaping Light in Backward-Wave Nonlinear Hyperbolic Metamaterials. <i>Photonics</i> , 2018, 5, 8.	0.9	5
2	Hyperbolic Carbon Nanoforest for Phase Matching of Ordinary and Backward Electromagnetic Waves: Second Harmonic Generation. <i>ACS Photonics</i> , 2017, 4, 1240-1244.	3.2	7
3	Effects of losses and phase mismatch on transient processes in optical parametric amplification through three-wave mixing of ordinary and backward electromagnetic waves. , 2017, , .		0
4	Generation, amplification, frequency conversion, and reversal of propagation of THz photons in nonlinear hyperbolic metamaterial. <i>Optics Letters</i> , 2017, 42, 4151.	1.7	3
5	Three-wave mixing of ordinary and backward electromagnetic waves: extraordinary transients in the nonlinear reflectivity and parametric amplification. <i>Optics Letters</i> , 2016, 41, 3976.	1.7	7
6	Nonlinear-optical frequency-doubling metareflector: pulsed regime. <i>Applied Physics A: Materials Science and Processing</i> , 2016, 122, 1.	1.1	2
7	Second harmonic generation and pulse shaping in positively and negatively spatially dispersive nanowaveguides: comparative analysis. <i>Optical and Quantum Electronics</i> , 2016, 48, 1.	1.5	1
8	Nonlinear Optics with Backward Waves. <i>Springer Series in Materials Science</i> , 2015, , 193-215.	0.4	1
9	Transient processes in the parametric interaction of counter-propagating waves. <i>Quantum Electronics</i> , 2015, 45, 1151-1152.	0.3	5
10	Frequency Conversion of Short Optical Pulses in Negatively Spatially Dispersive Metamaterials. , 2015, , .		0
11	Remote sensing with nonlinear negative-index metamaterials. <i>Proceedings of SPIE</i> , 2014, , .	0.8	0
12	Unidirectional amplification and shaping of optical pulses by three-wave mixing with negative phonons. <i>Applied Physics A: Materials Science and Processing</i> , 2014, 115, 523-529.	1.1	5
13	Nonlinear photonics in negative-index metamaterials. , 2013, , .		0
14	Nonlinear-optical up and down frequency-converting backward-wave metasensors and metamirrors. , 2013, , .		3
15	Generation of short contrapropagating pulses of second harmonic on frequency double-domain positive/negative index metamaterials. , 2012, , .		0
16	Nonlinear Backward-Wave Photonic Metamaterials. <i>Advances in Science and Technology</i> , 2012, 77, 246-252.	0.2	4
17	Enhancing coherent nonlinear-optical processes in nonmagnetic backward-wave materials. <i>Applied Physics A: Materials Science and Processing</i> , 2012, 109, 835-840.	1.1	15
18	Nonlinear Optics With Backward Waves. , 2012, , .		0

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19	Nonlinear electromagnetics in multi-domain negative-index metamaterials. , 2011, , .		0
20	Negative group velocity and three-wave mixing in dielectric crystals. Optics Letters, 2011, 36, 3861.	1.7	20
21	Computational Studies of Tailored Negative-Index Metamaterials and Microdevices. , 2011, , 331-377.		6
22	Nonlinear-optical metamirror. Applied Physics A: Materials Science and Processing, 2011, 103, 725-729.	1.1	11
23	Nonlinear and active metamaterials. Proceedings of SPIE, 2011, , .	0.8	3
24	Numerical Simulations of Metamaterial-based Infrared Sensor for Remote Environmental Monitoring. , 2011, , .		0
25	Nonlinear photonics of backward waves. , 2011, , .		0
26	Frequency-tunable nonlinear-optical negative-index metamirror for sensing applications. , 2011, , .		4
27	Engineering localized nonlinear-optical transport with optical phonons. , 2011, , .		1
28	TOWARDS BACKWARD-WAVE NEGATIVE-INDEX NONLINEAR-OPTICAL MICRODEVICES. , 2011, , .		0
29	Nonlinear optics of backward waves and extraordinary features of plasmonic nonlinear-optical microdevices. European Physical Journal D, 2010, 58, 263-274.	0.6	24
30	Coherent nonlinear-optical energy transfer and backward-wave optical parametric generation in negative-index metamaterials. Physica B: Condensed Matter, 2010, 405, 2999-3002.	1.3	9
31	Backward-wave nonlinear-optical microchip. , 2010, , .		0
32	Coherent nonlinear optics and quantum control in negative-index metamaterials. Journal of Optics, 2009, 11, 114028.	1.5	13
33	Resonant nonlinear optics of backward waves in negative-index metamaterials. Applied Physics B: Lasers and Optics, 2009, 96, 315-323.	1.1	12
34	Microscopic mirrorless negative-index optical parametric oscillator. Optics Letters, 2009, 34, 1165.	1.7	28
35	Plasmonics: nonlinear optics, negative phase, and transformable transparency. , 2009, , .		5
36	Transformable broad-band transparency and amplification in negative-index films. Applied Physics Letters, 2008, 93, 191117.	1.5	29

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37	Mirrorless optical parametric oscillations in negative-index microstructures. , 2008, , .		0
38	Four-wave mixing, quantum control, and compensating losses in doped negative-index photonic metamaterials. Optics Letters, 2007, 32, 3044.	1.7	47
39	Compensating losses in positive- and negative-index metamaterials through nonlinear-optical quantum switching. , 2007, , .		2
40	Nonlinear optical switching from lossy to amplifying negative-index metamaterials. , 2007, , .		1
41	Compensating Losses in Doped Negative-Index Metamaterials via Four-Wave Mixing and Quantum Control. , 2007, , .		0
42	Laser-stimulated synthesis of large fractal silver nanoaggregates. Nanotechnology, 2006, 17, 1901-1905.	1.3	12
43	Compensating losses in negative-index metamaterials by optical parametric amplification. Optics Letters, 2006, 31, 2169.	1.7	218
44	Negative-index metamaterials: second-harmonic generation, Manley-Rowe relations and parametric amplification. Applied Physics B: Lasers and Optics, 2006, 84, 131-137.	1.1	143
45	Second harmonic generation in left-handed metamaterials. Laser Physics Letters, 2006, 3, 293-297.	0.6	75
46	Synthesis of isolated silver nanoparticles and their aggregates manipulated by light. Laser Physics Letters, 2006, 3, 546-552.	0.6	23
47	Optical Negative-Index Metamaterials: from low to no-loss and from linear to nonlinear optics. , 2006, , .		0
48	Photonic Metamaterials: From Linear to Nonlinear Optics. , 2006, , .		1
49	Optical switching and inversionless amplification controlled by state-dependent alignment of molecules. Journal of Physics B: Atomic, Molecular and Optical Physics, 2005, 38, 1787-1796.	0.6	3
50	Nonlinear interference effects and all-optical switching in optically dense inhomogeneously broadened media. Physical Review A, 2005, 71, .	1.0	18
51	Inversionless amplification by anisotropic molecules. Optics Letters, 2005, 30, 1719.	1.7	3
52	Large enhancement of fully resonant sum-frequency generation through quantum control via continuum states. Physical Review A, 2004, 69, .	1.0	8
53	Coherence-controlled optical switching and amplification without inversion in a strongly-absorbing inhomogeneously-broadened medium. , 2004, , .		0
54	Photochromic reactions in silver nanocomposites with a fractal structure and their comparative characteristics. Technical Physics, 2003, 48, 749-756.	0.2	13

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55	Influence of electrodynamic interactions of particles on absorption spectra of silver sols during their aggregation. <i>Optics and Spectroscopy (English Translation of Optika i Spektroskopiya)</i> , 2003, 95, 230-240.	0.2	6
56	Specific features of absorption spectra of fractal-structured silver sols. <i>Optics and Spectroscopy (English Translation of Optika i Spektroskopiya)</i> , 2003, 95, 241-247.	0.2	5
57	Adiabatic passage and dissociation controlled by interference of two laser-induced continuum structures. <i>Physical Review A</i> , 2003, 68, .	1.0	2
58	Nonlinear-optical vacuum ultraviolet generation at maximum atomic coherence controlled by a laser-induced Stark chirp of two-photon resonance. <i>Optics Communications</i> , 2002, 209, 335-347.	1.0	15
59	Sub-Doppler resolution controlled by two coherent driving fields. <i>Optics Communications</i> , 2001, 188, 99-109.	1.0	14
60	Optical Spectra of Silver Colloids Within the Framework of Fractal Physics. <i>Colloid Journal</i> , 2000, 62, 699-713.	0.5	16
61	Four-wave mixing at maximum coherence and eliminated Doppler broadening controlled with the driving fields. <i>EPJ Direct</i> , 2000, 2, 1-12.	0.1	6
62	Inversionless gain in a three-level system driven by a strong field and collisions. <i>Chinese Physics B</i> , 2000, 9, 124-130.	1.3	4
63	Enhanced four-wave mixing via elimination of inhomogeneous broadening by coherent driving of quantum transitions with control fields. <i>Physical Review A</i> , 2000, 62, .	1.0	13
64	Inversionless gain in an optically-dense resonant Doppler-broadened medium. <i>Optics Express</i> , 2000, 7, 148.	1.7	5
65	Coherence-controlled transparency and far-from-degenerate parametric gain in a strongly absorbing Doppler-broadened medium. <i>Optics Letters</i> , 2000, 25, 1364.	1.7	5
66	Elimination of Doppler broadening at coherently driven quantum transitions. <i>Physical Review A</i> , 1999, 59, R946-R949.	1.0	8
67	Quantum interference and Manley-Rowe relations in resonant four-wave frequency mixing in an optically thick Doppler-broadened medium. <i>JETP Letters</i> , 1999, 69, 912-916.	0.4	9
68	Four-wave mixing under conditions of Doppler-free resonance induced by strong radiation. <i>JETP Letters</i> , 1999, 69, 110-116.	0.4	7
69	<title>Efficient nonlinear frequency mixing in a cw regime using coherent population trapping</title>. , 1999, , .		0
70	<title>Strong-field effects in coherently coupled multiple resonant level schemes: theory and experiment</title>. , 1999, 3736, 221.		0
71	<title>Sub-Doppler resonances of absorption and transparency induced by strong radiations in ladder systems</title>. , 1999, , .		1
72	Interference phenomena in Doppler broadened quantum transitions: Amplification of intense radiation without population inversion. <i>Journal of Experimental and Theoretical Physics</i> , 1998, 86, 244-258.	0.2	3

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73	Sub-Doppler absorption resonances induced by strong radiation. JETP Letters, 1998, 67, 1018-1023.	0.4	2
74	Raman frequency mixing under coherent population trapping conditions. Quantum Electronics, 1998, 28, 637-642.	0.3	6
75	Nonlinear-optical generation of short-wavelength radiation controlled by laser-induced interference structures. Quantum Electronics, 1998, 28, 228-234.	0.3	3
76	Evidence of the double-quantum photo effect observed with photo-stimulated formation of fractal aggregates in silver colloids under low-intensity light. , 1998, 3485, 425.		0
77	Interference at quantum transitions: lasing without inversion and resonant four-wave mixing in strong fields at Doppler-broadened transitions. , 1998, , .		5
78	Resonant Raman-type mixing using coherent population trapping. , 1998, 3485, 525.		0
79	Resonant four-wave frequency mixing in Doppler-broadened transitions. Quantum Electronics, 1997, 27, 1004-1008.	0.3	10
80	Observation of the two-photon photoelectric effect in low-intensity optical fields during photostimulated fractal aggregation of colloidal silver. JETP Letters, 1997, 66, 106-110.	0.4	10
81	<title>Coherence effects in inhomogeneously broadened double-lambda schemes</title>. , 1996, , .		2
82	Laser-induced formation of fractal structures in silver colloids and their spectroscopic appearance. , 1996, , .		1
83	<title>Atomic coherence and interference phenomena in resonant nonlinear optical interactions</title>. , 1996, , .		6
84	Nonlinear optical generation of radiation near the frequency of the third harmonic of an iodine laser. Quantum Electronics, 1996, 26, 150-152.	0.3	0
85	Non-linear optical properties of vapours of unsaturated hydrocarbons and VUV generation. Journal of Physics B: Atomic, Molecular and Optical Physics, 1993, 26, 2965-2975.	0.6	10
86	Photostimulated aggregation of ultradispersoidal silver particles into fractal clusters. Journal of Physics Condensed Matter, 1993, 5, 7231-7238.	0.7	10
87	Photostimulated aggregation of metallic fractal clusters. , 1993, , .		0
88	Dynamic orientation of molecules and nonlinear frequency mixing in dye vapors. , 1993, , .		0
89	Optical chaos in multiple degenerate four-wave mixing. Optical and Quantum Electronics, 1991, 23, 603-611.	1.5	5
90	White-light-induced drift of three-level atoms. Journal of Physics B: Atomic, Molecular and Optical Physics, 1991, 24, 621-631.	0.6	3

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91	Optical chaos in second-harmonic generation of a multimode pump. Journal of the European Optical Society Part B: Quantum Optics, 1991, 3, 323-331.	1.2	1
92	Nonlinear optics of metal fractal clusters. Zeitschrift für Physik D-Atoms Molecules and Clusters, 1990, 17, 283-289.	1.0	64
93	White-light-induced drift in cylindrical and spherical geometries. Physical Review A, 1990, 41, 5225-5228.	1.0	4
94	Separation of two atomic species by white-light-induced drift. Physical Review A, 1989, 40, 867-875.	1.0	12
95	Atom-density distribution in a metal vapor cell studied by third-harmonic generation. Applied Physics B, Photophysics and Laser Chemistry, 1988, 45, 47-52.	1.5	2
96	On two-photon excited gas drift under a train of ultrashort laser pulses. Zeitschrift für Physik D-Atoms Molecules and Clusters, 1988, 8, 367-369.	1.0	1
97	Influence of absorption on resonant four-photon frequency addition. Soviet Journal of Quantum Electronics, 1988, 18, 483-489.	0.1	1
98	Nonlinear optics and transformation of light in gases. Uspekhi Fizicheskikh Nauk, 1987, 30, 952-976.	0.3	13
99	Phase conjugation of CO ₂ -laser radiation by a three-beam interaction. Optical and Quantum Electronics, 1987, 19, 259-264.	1.5	0
100	VUV generation by eighth-order nonlinearity in Hg vapour. Optical and Quantum Electronics, 1987, 19, 319-322.	1.5	0
101	Self-diffraction of CO ₂ -laser radiation in SF ₆ . Optical and Quantum Electronics, 1986, 18, 115-121.	1.5	3
102	Resonant four-wave frequency mixing in the cw regime in sodium vapor. Soviet Journal of Quantum Electronics, 1986, 16, 888-892.	0.1	6
103	Frequency mixing in a gas-filled waveguide for VUV light generation. Applied Physics B, Photophysics and Laser Chemistry, 1985, 37, 93-97.	1.5	8
104	Nonlinear optical frequency-mixing in dye vapors. Applied Physics B, Photophysics and Laser Chemistry, 1985, 38, 143-146.	1.5	14
105	Resonant generation of even-order harmonics in metal vapors. Applied Physics B, Photophysics and Laser Chemistry, 1985, 36, 53-54.	1.5	1
106	Non-linear phase-mismatch compensated by focusing for efficient THG in gases. Optical and Quantum Electronics, 1985, 17, 435-441.	1.5	1
107	Laser induction of nonlinear resonances in continuous spectra. Journal of Soviet Laser Research, 1985, 6, 1-1.	0.2	12
108	Resonant generation of even harmonics in metal vapors. Soviet Journal of Quantum Electronics, 1984, 14, 1645-1646.	0.1	1

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109	Continuous-wave frequency mixing and UV generation in sodium vapor. Applied Physics B, Photophysics and Laser Chemistry, 1984, 35, 249-252.	1.5	10
110	Ninth-order nonlinear polarization and vuv generation in Hg vapor. Applied Physics B, Photophysics and Laser Chemistry, 1984, 34, 171-173.	1.5	7
111	Amplified phase-conjugate reflection of $\lambda=10.51 \mu\text{m}$ radiation in gaseous SF ₆ . Applied Physics B, Photophysics and Laser Chemistry, 1983, 31, 191-192.	1.5	5
112	Laser-induced nonlinear resonances in the continuum at third-harmonic generation in Na vapor. Applied Physics B, Photophysics and Laser Chemistry, 1983, 30, 35-40.	1.5	42
113	Effective upconversion of CO ₂ -laser radiation in sodium vapors. Applied Physics B, Photophysics and Laser Chemistry, 1983, 30, 53-55.	1.5	3
114	Resonant upconversion of $\lambda=1.06 \mu\text{m}$ radiation in rubidium vapors. Applied Physics B, Photophysics and Laser Chemistry, 1983, 30, 157-159.	1.5	3
115	Induced autoionization-like resonances in nonlinear third- and fifth-order susceptibilities of sodium vapor. Soviet Journal of Quantum Electronics, 1983, 13, 1075-1081.	0.1	4
116	Stimulated emission due to Doppler-free transitions in optically pumped lasers. Soviet Journal of Quantum Electronics, 1982, 12, 289-293.	0.1	2
117	Unidirectional Doppler-free gain and generation in optically pumped lasers. Applied Physics B, Photophysics and Laser Chemistry, 1982, 27, 63-67.	1.5	1
118	Drift of gases induced by nonmonochromatic light. Applied Physics Berlin, 1981, 25, 347-350.	1.4	10
119	Optical second-harmonic generation in atomic calcium vapour. Optical and Quantum Electronics, 1981, 13, 436-438.	1.5	3
120	Phasematching of frequency-conversion processes induced by additional selective pump. Applied Physics Berlin, 1980, 21, 91-92.	1.4	0
121	Doppler-free spectroscopy and wave-front conjugation by four-wave mixing of nonmonochromatic waves. Applied Physics Berlin, 1980, 21, 93-94.	1.4	8
122	Generation of coherent radiation at 89.6 nm through two-photon resonant phase-matched tripling of fourth-harmonic Nd: Glass laser radiation in Hg vapors. Applied Physics Berlin, 1978, 15, 239-241.	1.4	19
123	Upconversion of $\lambda=3.39 \mu\text{m}$ He-Ne laser radiation in two-photon resonantly pumped Na vapor. Applied Physics Berlin, 1978, 16, 209-210.	1.4	1
124	Formation of narrow nonlinear resonances in continuum. Soviet Journal of Quantum Electronics, 1976, 6, 606-607.	0.1	11
125	Four-photon parametric generation in the field of a helium-neon laser. Soviet Journal of Quantum Electronics, 1976, 6, 390-392.	0.1	1
126	Shape of the amplification line corresponding to an adjacent transition in a strong field. Soviet Physics Journal (English Translation of Izvestiia Vysshikh Uchebnykh Zavedenii, Fizika), 1970, 13, 1435-1440.	0.0	8

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127	Effect of resonance radiative processes on the amplification factor. Journal of Applied Spectroscopy, 1970, 12, 734-737.	0.3	12
128	Nonlinear Optics with Backward Waves: Extraordinary Features, Materials and Applications. Solid State Phenomena, 0, 213, 222-225.	0.3	6