Viktor A Podolskiy

List of Publications by Year in descending order

Source: https://exaly.com/author-pdf/7136982/publications.pdf

Version: 2024-02-01

187 papers 8,779 citations

42 h-index

66234

93 g-index

189

189 docs citations

189 times ranked 7636 citing authors

#	Article	IF	CITATIONS
1	Plasmonic nanorod metamaterials for biosensing. Nature Materials, 2009, 8, 867-871.	13.3	1,529
2	Negative refraction in semiconductor metamaterials. Nature Materials, 2007, 6, 946-950.	13.3	763
3	Designed ultrafast optical nonlinearity in a plasmonic nanorod metamaterial enhanced by nonlocality. Nature Nanotechnology, 2011, 6, 107-111.	15.6	432
4	Strongly anisotropic waveguide as a nonmagnetic left-handed system. Physical Review B, 2005, 71, .	1.1	289
5	Hyperbolic metamaterials: new physics behind a classical problem. Optics Express, 2013, 21, 15048.	1.7	270
6	Stimulated Emission of Surface Plasmon Polaritons. Physical Review Letters, 2008, 101, 226806.	2.9	269
7	Near-sighted superlens. Optics Letters, 2005, 30, 75.	1.7	255
8	Compensation of loss in propagating surface plasmon polariton by gain in adjacent dielectric medium. Optics Express, 2008, 16, 1385.	1.7	253
9	Plasmon modes and negative refraction in metal nanowire composites. Optics Express, 2003, 11, 735.	1.7	251
10	Optical Nonlocalities and Additional Waves in Epsilon-Near-Zero Metamaterials. Physical Review Letters, 2009, 102, 127405.	2.9	249
11	Nanowire metamaterials with extreme optical anisotropy. Applied Physics Letters, 2006, 89, 261102.	1.5	221
12	Nonlocal effects in effective-medium response of nanolayered metamaterials. Applied Physics Letters, 2007, 90, 191109.	1.5	214
13	PLASMON MODES IN METAL NANOWIRES AND LEFT-HANDED MATERIALS. Journal of Nonlinear Optical Physics and Materials, 2002, 11, 65-74.	1.1	211
14	Highly confined optical modes in nanoscale metal-dielectric multilayers. Physical Review B, 2007, 75, .	1.1	194
15	Transparent conductive oxides: Plasmonic materials for telecom wavelengths. Applied Physics Letters, 2011, 99, .	1.5	179
16	Towards nano-scale photonics with micro-scale photons: the opportunities and challenges of mid-infrared plasmonics. Nanophotonics, 2013, 2, 103-130.	2.9	173
17	Nonmagnetic nanocomposites for optical and infrared negative-refractive-index media. Journal of the Optical Society of America B: Optical Physics, 2006, 23, 498.	0.9	159
18	Funneling Light through a Subwavelength Aperture with Epsilon-Near-Zero Materials. Physical Review Letters, 2011, 107, 133901.	2.9	144

#	Article	IF	Citations
19	A proof of superlensing in the quasistatic regime, and limitations of superlenses in this regime due to anomalous localized resonance. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2005, 461, 3999-4034.	1.0	118
20	Metamaterial photonic funnels for subdiffraction light compression and propagation. Physical Review B, 2006, 73, .	1.1	112
21	Resonant light interaction with plasmonic nanowire systems. Journal of Optics, 2005, 7, S32-S37.	1.5	97
22	Refractive index sensing with hyperbolic metamaterials: strategies for biosensing and nonlinearity enhancement. Optics Express, 2015, 23, 14329.	1.7	82
23	Near-field optical studies of semicontinuous metal films. Physical Review B, 2001, 64, .	1.1	78
24	Scattering-Free Plasmonic Optics with Anisotropic Metamaterials. Physical Review Letters, 2008, 100, 066402.	2.9	77
25	Spontaneous emission in non-local materials. Light: Science and Applications, 2017, 6, e16273-e16273.	7.7	75
26	Nonlocal optics of plasmonic nanowire metamaterials. Physical Review B, 2014, 89, .	1.1	74
27	Hypergratings: nanophotonics in planar anisotropic metamaterials. Optics Letters, 2009, 34, 890.	1.7	73
28	Active metamaterials: Sign of refractive index and gain-assisted dispersion management. Applied Physics Letters, 2007, 91 , .	1.5	71
29	Optimizing the superlens: Manipulating geometry to enhance the resolution. Applied Physics Letters, 2005, 87, 231113.	1.5	64
30	Strong Coupling of Molecular and Mid-Infrared Perfect Absorber Resonances. IEEE Photonics Technology Letters, 2012, 24, 31-33.	1.3	64
31	Purcell effect in hyperbolic metamaterial resonators. Physical Review B, 2015, 92, .	1.1	62
32	Focus issue: hyperbolic metamaterials. Optics Express, 2013, 21, 14895.	1.7	59
33	Semiclassical Description of Chaos-Assisted Tunneling. Physical Review Letters, 2003, 91, 263601.	2.9	58
34	Looking into Meta-Atoms of Plasmonic Nanowire Metamaterial. Nano Letters, 2014, 14, 4971-4976.	4.5	57
35	Experimental observation of percolation-enhanced nonlinear light scattering from semicontinuous metal films. Physical Review B, 2001, 64, .	1.1	54
36	Midinfrared semiconductor optical metamaterials. Journal of Applied Physics, 2009, 105, .	1.1	54

#	Article	IF	CITATIONS
37	Ultrasensitive Nonâ€Resonant Detection of Ultrasound with Plasmonic Metamaterials. Advanced Materials, 2013, 25, 2351-2356.	11.1	54
38	Large local optical activity in fractal aggregates of nanoparticles. Journal of the Optical Society of America B: Optical Physics, 2001, 18, 1896.	0.9	53
39	Chaos-assisted tunneling in dielectric microcavities. Optics Letters, 2005, 30, 474.	1.7	53
40	Homogeneous Hyperbolic Systems for Terahertz and Far-Infrared Frequencies. Advances in OptoElectronics, 2012, 2012, 1-6.	0.6	50
41	Strongly anisotropic media: the THz perspectives of left-handed materials. Journal of Modern Optics, 2005, 52, 2343-2349.	0.6	45
42	Stimulated Emission of Surface Plasmon Polaritons in a Microcylinder Cavity. Physical Review Letters, 2011, 106, 183903.	2.9	42
43	Engineering absorption and blackbody radiation in the far-infrared with surface phonon polaritons on gallium phosphide. Applied Physics Letters, 2014, 104, .	1.5	41
44	Gain-Assisted Slow to Superluminal Group Velocity Manipulation in Nanowaveguides. Physical Review Letters, 2006, 97, 223902.	2.9	38
45	Magnetoâ€Optical Metamaterials: Nonreciprocal Transmission and Faraday Effect Enhancement. Advanced Optical Materials, 2019, 7, 1801420.	3.6	38
46	Nonlocal Effects in Transition Hyperbolic Metamaterials. ACS Photonics, 2017, 4, 2470-2478.	3.2	37
47	Mid-infrared epsilon-near-zero modes in ultra-thin phononic films. Applied Physics Letters, 2017, 111, .	1.5	37
48	Chaotic microlasers based on dynamical localization. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 10498-10500.	3.3	36
49	Hyperbolic and plasmonic properties of Silicon/Ag aligned nanowire arrays. Optics Express, 2013, 21, 14962.	1.7	36
50	Resonance transmittance through a metal film with subwavelength holes. IEEE Journal of Quantum Electronics, 2002, 38, 956-963.	1.0	35
51	Control of reflectance and transmittance in scattering and curvilinear hyperbolic metamaterials. Applied Physics Letters, 2012, 101, 091105.	1.5	35
52	PERCOLATION AND FRACTAL COMPOSITES: OPTICAL STUDIES. Journal of Nonlinear Optical Physics and Materials, 2000, 09, 105-116.	1.1	27
53	Near-field infrared absorption of plasmonic semiconductor microparticles studied using atomic force microscope infrared spectroscopy. Applied Physics Letters, 2013, 102, .	1.5	27
54	Diffractive interface theory: nonlocal susceptibility approach to the optics of metasurfaces. Optics Express, 2015, 23, 2764.	1.7	26

#	Article	IF	CITATIONS
55	Epsilon-Near-Zero Photonics Wires. ACS Photonics, 2016, 3, 1045-1052.	3.2	26
56	Geometry Defines Ultrafast Hotâ€Carrier Dynamics and Kerr Nonlinearity in Plasmonic Metamaterial Waveguides and Cavities. Advanced Optical Materials, 2017, 5, 1700299.	3.6	25
57	The limitedness problem on distance automata: Hashiguchi's method revisited. Theoretical Computer Science, 2004, 310, 147-158.	0.5	23
58	Control of the Stokes Shift with Strong Coupling. Advanced Optical Materials, 2017, 5, 1600941.	3.6	23
59	Electrically Injected Parity Time–Symmetric Single Transverse–Mode Lasers. Laser and Photonics Reviews, 2019, 13, 1800154.	4.4	23
60	Low-threshold lasing and broad-band multiphoton-excited light emission from Ag aggregate-adsorbate complexes in microcavity. Journal of Modern Optics, 2002, 49, 645-662.	0.6	22
61	Light emission in nonlocal plasmonic metamaterials. Faraday Discussions, 2015, 178, 61-70.	1.6	22
62	Plasmonic Nanolayer Composites: Coupled Plasmon Polaritons, Effective-Medium Response, and Subdiffraction Light Manipulation. Journal of Nanomaterials, 2007, 2007, 1-8.	1.5	21
63	Enhanced Optical Transmission through MacEtchâ€Fabricated Buried Metal Gratings. Advanced Materials, 2016, 28, 1441-1448.	11.1	21
64	Structural second-order nonlinearity in plasmonic metamaterials. Optica, 2018, 5, 1502.	4.8	21
65	Quasi-planar optics: computing light propagation and scattering in planar waveguide arrays. Journal of the Optical Society of America B: Optical Physics, 2009, 26, B102.	0.9	19
66	Collective phenomena in photonic, plasmonic and hybrid structures. Optics Express, 2011, 19, 22024.	1.7	19
67	<mml:math< p=""> xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>ε</mml:mi>-near-zero enhanced light transmission through a subwavelength slit. Physical Review B, 2014, 89, .</mml:math<>	1.1	19
68	Plasmon-enhanced absorption by optical phonons in metal-dielectric composites. Europhysics Letters, 2001, 53, 364-370.	0.7	18
69	Plasmonic mid-infrared beam steering. Applied Physics Letters, 2010, 96, .	1.5	17
70	Applications of plasmonics: general discussion. Faraday Discussions, 2015, 178, 435-466.	1.6	17
71	Enhanced emission from ultra-thin long wavelength infrared superlattices on epitaxial plasmonic materials. Applied Physics Letters, 2020, 116 , .	1.5	17
72	Machine Learning-Based Diffractive Image Analysis with Subwavelength Resolution. ACS Photonics, 2021, 8, 1448-1456.	3.2	17

#	Article	IF	CITATIONS
73	Dynamical localization in microdisk lasers. Optics Express, 2005, 13, 5641.	1.7	16
74	Analytical technique for subwavelength far field imaging. Applied Physics Letters, 2010, 97, 101103.	1.5	16
75	Plasmonic and new plasmonic materials: general discussion. Faraday Discussions, 2015, 178, 123-149.	1.6	16
76	Low-frequency nonlocal and hyperbolic modes in corrugated wire metamaterials. Optics Express, 2018, 26, 17541.	1.7	15
77	Toward parametric amplification in plasmonic systems: Second harmonic generation enhanced by surface plasmon polaritons. Optics Express, 2014, 22, 7773.	1.7	14
78	Engineering the Berreman mode in mid-infrared polar materials. Optics Express, 2020, 28, 28590.	1.7	14
79	<i>CoPhy</i> -PGNN: Learning Physics-guided Neural Networks with Competing Loss Functions for Solving Eigenvalue Problems. ACM Transactions on Intelligent Systems and Technology, 2022, 13, 1-23.	2.9	14
80	Multiscale beam evolution and shaping in corrugated plasmonic systems. Optics Express, 2011, 19, 9269.	1.7	13
81	Terahertz transmission ellipsometry of vertically aligned multi-walled carbon nanotubes. Applied Physics Letters, 2012, 101, 111107.	1.5	13
82	Chaos-assisted tunneling and dynamical localization in dielectric microdisk resonators. IEEE Journal of Selected Topics in Quantum Electronics, 2006, 12, 40-51.	1.9	11
83	Interscale mixing microscopy: numerically stable imaging of wavelength-scale objects with sub-wavelength resolution and far field measurements. Optics Express, 2015, 23, 2753.	1.7	10
84	Singlet–Triplet Transition Rate Enhancement inside Hyperbolic Metamaterials. Laser and Photonics Reviews, 2019, 13, 1900101.	4.4	10
85	Far-field imaging by a planar lens: Diffraction versus superresolution. Physical Review B, 2007, 76, .	1.1	9
86	Level spacing distribution in systems with partially chaotic classical dynamics. Physics Letters, Section A: General, Atomic and Solid State Physics, 2007, 362, 412-416.	0.9	9
87	Interscale mixing microscopy: far-field imaging beyond the diffraction limit. Optica, 2016, 3, 803.	4.8	9
88	Enhanced room temperature infrared LEDs using monolithically integrated plasmonic materials. Optica, 2020, 7, 1355.	4.8	9
89	Metamaterial coatings for broadband asymmetric mirrors. Optics Letters, 2007, 32, 1770.	1.7	8
90	Rigorous diffraction interface theory. Applied Physics Letters, 2017, 110, .	1.5	8

#	Article	IF	CITATIONS
91	Metamaterials-based Salisbury screens with reduced angular sensitivity. Applied Physics Letters, 2014, 105, .	1.5	7
92	Surface-plasmon quantum cascade microlasers with highly deformed resonators. IEEE Journal of Selected Topics in Quantum Electronics, 2006, 12, 66-70.	1.9	6
93	Sub-diffraction light propagation in fibres with anisotropic dielectric cores. Journal of Modern Optics, 2006, 53, 2315-2324.	0.6	6
94	Sub-diffraction negative and positive index modes in mid-infrared waveguides. Optics Express, 2008, 16, 16404.	1.7	6
95	Low-diffraction beaming in plasmonic crystals. Optics Letters, 2012, 37, 2976.	1.7	6
96	Optical properties of metal nanowires. , 2003, , .		5
97	Enhanced bandwidth and reduced dispersion through stacking multiple optical metamaterials. Optics Express, 2011, 19, 14990.	1.7	5
98	Homogenization of nanowire-based composites with anisotropic unit-cell and layered substructure. MRS Communications, 2016, 6, 23-29.	0.8	5
99	Comment on "All-Angle Broadband Negative Refraction of Metal Waveguide Arrays in the Visible Range: Theoretical Analysis and Numerical Demonstration― Physical Review Letters, 2007, 98, .	2.9	4
100	Diffractive imaging route to sub-wavelength pixels. Applied Physics Letters, 2013, 102, .	1.5	4
101	Angle-insensitive plasmonic nanorod metamaterial-based band-pass optical filters. Optics Express, 2021, 29, 11562.	1.7	4
102	Metasurface-enhanced transparency. Journal of the Optical Society of America B: Optical Physics, 2017, 34, D42.	0.9	4
103	Nonlocal Response of Plasmonic Nanorod Metamaterials. , 2012, , .		3
104	Surface plasmon enhanced spectroscopies and time and space resolved methods: general discussion. Faraday Discussions, 2015, 178, 253-279.	1.6	3
105	Directional emission of rhodamine 6G on top of a silver grating. Optics Letters, 2018, 43, 2668.	1.7	3
106	Theoretical studies of loss compensation in active planar plasmonic structures., 2007,,.		3
107	Discrete spectrum of anti-Stokes emission from metal particle-adsorbate complexes in a microcavity., 2002,,.		2
108	Compensation of loss by optical gain in propagating surface plasmons., 2007,,.		2

7

#	Article	IF	Citations
109	Machine Learning-based Diffractive Imaging with Subwavelength Resolution., 2020,,.		2
110	Multiscale Metasurfaces for Enhanced Light Extraction. , 2016, , .		2
111	Ballistic metamaterials. Optica, 2020, 7, 1773.	4.8	2
112	Chaos-assisted tunneling in whispering-gallery resonators. , 2003, 4969, 167.		1
113	Nonlocal effects in effective medium response of nanolayered metamaterials., 2007,,.		1
114	Enhancement of dispersion modulation in nanoscale waveguides. Journal of the Optical Society of America B: Optical Physics, 2008, 25, C127.	0.9	1
115	ENZ-enhanced transmission through subwavelength slits. , 2011, , .		1
116	Asymmetric reflectance and cluster size effects in silver percolation films. Physical Review B, 2011, 84,	1.1	1
117	Spontaneous Emission in Nonlocal Metamaterials with Spatial Dispersion. Springer Series in Solid-state Sciences, 2017, , 237-277.	0.3	1
118	Subdiffraction Limited Photonic Funneling of Light. Advanced Optical Materials, 2020, 8, 2001321.	3.6	1
119	Photonic Funnels: Subdiffraction Limited Photonic Funneling of Light (Advanced Optical Materials) Tj ETQq $1\ 1\ 0$.	784314 rg	gBŢ /Overloci
120	Efficient radiational outcoupling of electromagnetic energy from hyperbolic metamaterial resonators. Scientific Reports, 2020, 10, 21854.	1.6	1
121	Stimulated emission in vicinity of the critical angle. Applied Physics Letters, 2021, 119, 031102.	1.5	1
122	Optical nonlocalities and additional waves in epsilon-near-zero metamaterials., 2009,,.		1
123	Design of hyper-gratings for far field subwavelength focusing in planar geometry. , 2009, , .		1
124	High-Performance Sensing with Plasmonic Nanorod Metamaterials. , 2010, , .		1
125	Single-transverse-mode broadband InAs quantum dot superluminescent light emitting diodes by parity-time symmetry. Optics Express, 2018, 26, 30588.	1.7	1
126	Extending plasmonic response to the mid-wave infrared with all-epitaxial composites. Optics Letters, 2022, 47, 973.	1.7	1

#	Article	IF	CITATIONS
127	Plasmon-enhanced absorption by optical phonons in cermets. , 2001, , .		O
128	<title>Plasmonic nanophotonics: manipulating light and sensing molecules</title> ., 2002, , .		O
129	<title>Light management at nanoscale</title> ., 2002, , .		O
130	Giant enhancement of spectral emissions from molecules adsorbed on fractal/microcavity composite media., 2002,,.		O
131	Spiral whispering-gallery resonators. , 2005, , .		O
132	Chaotic microlasers based on dynamical localization in whispering-gallery resonators with surface roughness. , 2005, , .		0
133	Non-magnetic materials with negative refractive index. , 2005, , .		O
134	Light in Strongly Anisotropic Media: Towards Left-Handed Materials at Optical Frequencies. , 2005, , FTuX4.		0
135	Composite materials with giant anisotropy and negative index of refraction., 2005,,.		O
136	Chaos-Assisted Tunnelling and Dynamical Localization in Optical Microresonators. , 2006, , .		0
137	Imaging properties of anisotropy-based negative index composites. , 2006, , .		O
138	Subwavelength light guiding in photonic funnels. , 2006, , .		0
139	Optimizing the superlens geometry. , 2006, , .		O
140	CHAOTIC MICROLASERS BASED ON DYNAMICAL LOCALIZATION. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2006, 16, 1835-1839.	0.7	0
141	Gain-assisted dispersion management in negative-index materials. , 2007, , .		O
142	Diffraction and dispersion management in active nanostructured metamaterials., 2007,,.		0
143	Guided Modes Supported by Nanoscale Metal-Dielectric Multilayers. , 2007, , .		0
144	Scattering-free plasmonic optics with anisotropic metamaterials. , 2008, , .		0

#	Article	IF	CITATIONS
145	Surface Plasmon Polaritons in Silver-Gold Sandwich Structure., 2009,,.		O
146	Hypergratings: far-field subwavelength focusing in planar metamaterials. Proceedings of SPIE, 2009, , .	0.8	0
147	Active mid-infrared plasmonic beam steering devices. Proceedings of SPIE, 2010, , .	0.8	0
148	Evolution of Beaming Pattern in Corrugated Mid-IR Plasmonic Structures. , 2010, , .		0
149	Funneling Light Through a Subwavelength Aperture Using Epsilon-Near-Zero Materials. , 2011, , .		0
150	Low-Diffraction Modes in Plasmonic Crystals. , 2012, , .		0
151	Making the mid-infrared nano with designer plasmonic materials. , 2012, , .		0
152	Hyperbolic metamaterials platforms for tuning reflectance, transmittance and absorption. Proceedings of SPIE, 2012, , .	0.8	0
153	Nonlocal Optics of Plasmonic Nanowire Metamaterials. , 2013, , .		0
154	All Semiconductor Negative-Index Plasmonic Absorbers. , 2014, , .		0
155	Mid-IR Plasmonics with Engineered Semiconductor Metals. , 2014, , .		0
156	Additional Waves in Nonlocal Nanowire Metamaterials. , 2014, , .		0
157	Optical Transmission: Enhanced Optical Transmission through MacEtchâ€Fabricated Buried Metal Gratings (Adv. Mater. 7/2016). Advanced Materials, 2016, 28, 1440-1440.	11.1	0
158	Stimulated Emission with Evanescent Gain in the Total Internal Reflection Geometry., 2021, , .		0
159	Diffractive Characterization of Sub-wavelength Objects with Machine Learning. , 2021, , .		0
160	Plasmonic nanowires as left-handed media. , 2003, , .		0
161	Non-magnetic left handed nanostructured material. , 2004, , .		0
162	Light in Microresonators and Chaos Theory. , 2005, , .		0

#	Article	IF	CITATIONS
163	Elongation of the surface plasmon polariton propagation length without gain. , 2007, , .		O
164	Anisotropic metamaterials for purely 2-D optics. , 2008, , .		0
165	Modeling Asymmetric Reflectance in Semicontinuous Metal Films Using Generalized Ohm's Law. , 2009, , .		0
166	Stimulated Emission in Microring Cavity with Gold Core. , 2009, , .		0
167	Hypergratings: Sub-Diffraction Optics with Anisotropic Plasmonic Metamaterials., 2009,,.		0
168	Analytical Technique for Determining the Size of Subwavelength Focal Spots in far Field., 2010, , .		0
169	Terahertz Ellipsometry of Vertically Grown Carbon Nanotubes. , 2012, , .		0
170	Interscale mixing for high-resolution and highly-compact imaging systems. , 2012, , .		0
171	Meta-Gratings for Highly-Compact Holographic Imaging Systems. , 2013, , .		0
172	Numerically Stable Reconstruction of Wavelength-Scale Objects with Sub-Wavelength Resolution. , 2014, , .		0
173	Angle-independent Salisbury screens based on nonlocal nanowire metamaterials. , 2014, , .		0
174	Diffraction Interface Theory: A nonlocal approach to metasurfaces. , 2015, , .		0
175	Light Emission in Nonlocal Plasmonic Nanowire Metamaterials. , 2015, , .		O
176	Homogenization of nanowire-based composites with anisotropic unit cell and layered substructure. , 2016, , .		0
177	Buried Extraordinary Optical Transmission. , 2016, , .		0
178	Interscale mixing microscopy: far-field imaging beyond the diffraction limit., 2017,,.		0
179	Magneto-optical nanowire metamaterials. , 2017, , .		0
180	Rigorous Diffraction Interface Theory. , 2017, , .		0

#	Article	IF	CITATIONS
181	Structural Second Order Nonlinearity in Metamaterials. , 2018, , .		O
182	Directional Spontaneous Emission of Dye on Top of Silver Grating Metasurface. , 2018, , .		0
183	Diffractive optics approach towards subwavelength pixels. , 2018, , .		O
184	Strong Structural Nonlinearity from Plasmonic Metamaterials in the Infrared. , 2019, , .		O
185	Field Enhancement and Ultrafast Plasmonics In Nonlocal Transitional Metamaterials., 2019,,.		O
186	Monolithic Semiconductor Plasmonic Devices. , 2020, , .		O
187	Physicsâ€Informed Machine Learning for Optical Modes in Composites. Advanced Photonics Research, 0, , 2200073.	1.7	0