

Igor I Smolyaninov

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

166
papers

6,276
citations

33
h-index

77
g-index

188
ext. papers

7,086
ext. citations

3.5
avg, IF

6.06
L-index

#	Paper	IF	Citations
166	Analogue Quantum Gravity in Hyperbolic Metamaterials. <i>Universe</i> , 2022 , 8, 242	2.5	0
165	Effect of Fast Scale Factor Fluctuations on Cosmological Evolution. <i>Universe</i> , 2021 , 7, 164	2.5	0
164	Normal state specific heat of a core-shell aluminum-alumina metamaterial composite with enhanced T _c . <i>Physical Review B</i> , 2021 , 103,	3.3	1
163	Enhancement of Unruh effect near hyperbolic metamaterials. <i>Europhysics Letters</i> , 2021 , 133, 18001	1.6	1
162	Effect of metamaterial engineering on the superconductive properties of ultrathin layers of NbTiN. <i>Journal of Applied Physics</i> , 2021 , 130, 073901	2.5	0
161	Gradient-index nanophotonics. <i>Journal of Optics (United Kingdom)</i> , 2021 , 23, 095002	1.7	1
160	Oscillating Cosmological Force Modifies Newtonian Dynamics. <i>Galaxies</i> , 2020 , 8, 45	2	1
159	Development of Broadband Underwater Radio Communication for Application in Unmanned Underwater Vehicles. <i>Journal of Marine Science and Engineering</i> , 2020 , 8, 370	2.4	2
158	Experimental observation of effective gravity and two-time physics in ferrofluid-based hyperbolic metamaterials. <i>Advanced Photonics</i> , 2020 , 2,	8.1	1
157	Hybrid acousto-electromagnetic metamaterial superconductors. <i>Physica C: Superconductivity and Its Applications</i> , 2020 , 577, 1353730	1.3	2
156	Superconducting properties of tin-based ENZ and hyperbolic metamaterials. <i>Physica C: Superconductivity and Its Applications</i> , 2019 , 565, 1353511	1.3	1
155	Observation of plasmon-phonons in a metamaterial superconductor using inelastic neutron scattering. <i>Physical Review B</i> , 2019 , 100,	3.3	2
154	Nonlinear optics of photonic hyper-crystals: optical limiting and hyper-computing. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2019 , 36, 1629	1.7	7
153	Giant Unruh effect in hyperbolic metamaterial waveguides. <i>Optics Letters</i> , 2019 , 44, 2224-2227	3	10
152	Super-Resolution Microscopy Techniques Based on Plasmonics and Transformation Optics 2019 , 313-343		
151	Enhancement of Coulomb blockade in epsilon near zero and hyperbolic metamaterials. <i>Physica C: Superconductivity and Its Applications</i> , 2019 , 556, 14-18	1.3	
150	Galactic optical cloaking of visible baryonic matter. <i>Physical Review D</i> , 2018 , 97,	4.9	1

149	Metamaterial superconductors. <i>Nanophotonics</i> , 2018 , 7, 795-818	6.3	5
148	Surface Wave Based Underwater Radio Communication. <i>IEEE Antennas and Wireless Propagation Letters</i> , 2018 , 17, 2503-2507	3.8	12
147	Roadmap on transformation optics. <i>Journal of Optics (United Kingdom)</i> , 2018 , 20, 063001	1.7	40
146	Enhancement of critical temperature in fractal metamaterial superconductors. <i>Physica C: Superconductivity and Its Applications</i> , 2017 , 535, 20-23	1.3	1
145	Fine tuning and MOND in a metamaterial "multiverse". <i>Scientific Reports</i> , 2017 , 7, 8023	4.9	3
144	Hyperbolic Metamaterials. <i>World Scientific Series in Nanoscience and Nanotechnology</i> , 2017 , 87-138	0.1	
143	Hyperbolic metamaterials: Novel physics and applications. <i>Solid-State Electronics</i> , 2017 , 136, 102-112	1.7	21
142	Thermally Induced Effective Spacetimes in Self-Assembled Hyperbolic Metamaterials. <i>Universe</i> , 2017 , 3, 23	2.5	
141	Extra-Dimensional Metamaterials—A Model of Inflation Due to a Metric Signature Transition. <i>Universe</i> , 2017 , 3, 66	2.5	
140	Experimental Observation of Melting of the Effective Minkowski Spacetime in Cobalt-Based Ferrofluids. <i>International Journal of Behavioral and Consultation Therapy</i> , 2017 , 137-158	0.6	1
139	Optical Super-Resolution Imaging Using Surface Plasmon Polaritons 2017 , 165-189		
138	The flexibility of optical metrics. <i>Classical and Quantum Gravity</i> , 2016 , 33, 165008	3.3	0
137	Theoretical modeling of critical temperature increase in metamaterial superconductors. <i>Physical Review B</i> , 2016 , 93,	3.3	14
136	Enhanced superconductivity in aluminum-based hyperbolic metamaterials. <i>Scientific Reports</i> , 2016 , 6, 34140	4.9	19
135	Magnetic liquids under high electric fields as broadband optical diodes. <i>Physical Review A</i> , 2016 , 94,	2.6	1
134	Fractional Effective Charges and Misner-Wheeler Charge without Charge Effect in Metamaterials. <i>Photonics</i> , 2016 , 3, 43	2.2	
133	Lithographically Fabricated Magnifying Maxwell Fisheye Lenses. <i>Photonics</i> , 2016 , 3, 8	2.2	1
132	Roadmap on optical metamaterials. <i>Journal of Optics (United Kingdom)</i> , 2016 , 18, 093005	1.7	89

131	Experimental model of topological defects in Minkowski space-time based on disordered ferrofluid: magnetic monopoles, cosmic strings and the space-time cloak. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2015 , 373,	3	4
130	Black hole in a waveguide: Hawking radiation or self-phase modulation?. <i>Journal of Optics (United Kingdom)</i> , 2015 , 17, 075504	1.7	
129	Experimental Demonstration of Luneburg Waveguides. <i>Photonics</i> , 2015 , 2, 440-448	2.2	8
128	Using metamaterial nanoengineering to triple the superconducting critical temperature of bulk aluminum. <i>Scientific Reports</i> , 2015 , 5, 15777	4.9	23
127	Metamaterial superconductors. <i>Physical Review B</i> , 2015 , 91,	3.3	17
126	Self-assembled tunable photonic hyper-crystals. <i>Scientific Reports</i> , 2014 , 4, 5706	4.9	34
125	Quantum mechanics of hyperbolic metamaterials: Modeling of quantum time and Everett's "Universal wavefunction" <i>Physica B: Condensed Matter</i> , 2014 , 453, 131-135	2.8	1
124	Quantum topological transition in hyperbolic metamaterials based on high T _c superconductors. <i>Journal of Physics Condensed Matter</i> , 2014 , 26, 305701	1.8	17
123	Holographic duality in nonlinear hyperbolic metamaterials. <i>Journal of Optics (United Kingdom)</i> , 2014 , 16, 075101	1.7	8
122	Experimental demonstration of superconducting critical temperature increase in electromagnetic metamaterials. <i>Scientific Reports</i> , 2014 , 4, 7321	4.9	25
121	Is There a Metamaterial Route to High Temperature Superconductivity?. <i>Advances in Condensed Matter Physics</i> , 2014 , 2014, 1-6	1	12
120	Metamaterial Model of Tachyonic Dark Energy. <i>Galaxies</i> , 2014 , 2, 72-80	2	2
119	Big Crunch-based omnidirectional light concentrators. <i>Journal of Optics (United Kingdom)</i> , 2014 , 16, 125103	1.7	1
118	Minkowski domain walls in hyperbolic metamaterials. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2013 , 377, 353-356	2.3	12
117	Analog of gravitational force in hyperbolic metamaterials. <i>Physical Review A</i> , 2013 , 88,	2.6	27
116	Experimental demonstration of birefringent transformation optics devices. <i>Physical Review B</i> , 2013 , 87,	3.3	7
115	Quantum electromagnetic Black holes in a strong magnetic field. <i>Journal of Physics G: Nuclear and Particle Physics</i> , 2013 , 40, 015005	2.9	6
114	Light propagation through random hyperbolic media. <i>Optics Letters</i> , 2013 , 38, 971-3	3	6

113	Experimental demonstration of metamaterial "multiverse" in a ferrofluid. <i>Optics Express</i> , 2013 , 21, 14918-25	3.5	28
112	Modeling of causality with metamaterials. <i>Journal of Optics (United Kingdom)</i> , 2013 , 15, 025101	1.7	14
111	Metamaterial model of fractal time. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2012 , 376, 1315-1317	2.3	2
110	Hyperbolic metamaterial interfaces: Hawking radiation from Rindler horizons and spacetime signature transitions. <i>Physical Review B</i> , 2012 , 85,	3.3	47
109	Experimental modeling of cosmological inflation with metamaterials. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2012 , 376, 2575-2579	2.3	30
108	Planck-scale physics of vacuum in a strong magnetic field. <i>Physical Review D</i> , 2012 , 85,	4.9	12
107	Broadband Purcell effect: Radiative decay engineering with metamaterials. <i>Applied Physics Letters</i> , 2012 , 100, 181105	3.4	306
106	Low-diffraction beaming in plasmonic crystals. <i>Optics Letters</i> , 2012 , 37, 2976-8	3	5
105	Vacuum in a strong magnetic field as a hyperbolic metamaterial. <i>Physical Review Letters</i> , 2011 , 107, 253903	4.3	34
104	Metamaterial-based model of the Alcubierre warp drive. <i>Physical Review B</i> , 2011 , 84,	3.3	7
103	Metamaterial "multiverse" <i>Journal of Optics (United Kingdom)</i> , 2011 , 13, 024004	1.7	20
102	Modeling of time with metamaterials. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2011 , 28, 1591	1.7	49
101	Lattice models of nontrivial "optical spaces" based on metamaterial waveguides. <i>Optics Letters</i> , 2011 , 36, 2420-2	3	2
100	Critical opalescence in hyperbolic metamaterials. <i>Journal of Optics (United Kingdom)</i> , 2011 , 13, 125101	1.7	9
99	Maxwell fisheye and Eaton lenses emulated by a microdroplet 2010 ,		1
98	Broadband Transformation Optics Devices. <i>Materials</i> , 2010 , 3, 4793-4810	3.5	6
97	Surface plasmon polariton enhanced fluorescence from quantum dots on nanostructured metal surfaces. <i>Nano Letters</i> , 2010 , 10, 813-20	11.5	71
96	Maxwell fish-eye and Eaton lenses emulated by microdroplets. <i>Optics Letters</i> , 2010 , 35, 3396-8	3	43

95	Experimental observation of the trapped rainbow. <i>Applied Physics Letters</i> , 2010 , 96, 211121	3-4	46
94	Metric signature transitions in optical metamaterials. <i>Physical Review Letters</i> , 2010 , 105, 067402	7-4	145
93	Experimental observation of speckle instability in a two-dimensional disordered medium. <i>Metamaterials</i> , 2010 , 4, 207-213		1
92	Magnifying superlenses and other applications of plasmonic metamaterials in microscopy and sensing. <i>ChemPhysChem</i> , 2009 , 10, 625-8	3-2	5
91	Light emission from a tunneling junction as a physical clock for tunneling time. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2009 , 373, 2021-2024	2-3	0
90	Anisotropic metamaterials emulated by tapered waveguides: application to optical cloaking. <i>Physical Review Letters</i> , 2009 , 102, 213901	7-4	155
89	Level of holographic noise in interferometry. <i>Physical Review D</i> , 2009 , 79,	4-9	1
88	Surface plasmon polariton enhanced fluorescence from quantum dots on nanostructured metal surfaces 2009 ,		1
87	Surface Plasmon Polariton Enhanced Fluorescence from Quantum Dots on Nanostructured Metal Surfaces 2009 ,		1
86	Transformational optics of plasmonic metamaterials. <i>New Journal of Physics</i> , 2008 , 10, 115033	2-9	14
85	Two-dimensional metamaterial structure exhibiting reduced visibility at 500 nm. <i>Optics Letters</i> , 2008 , 33, 1342-4	3	72
84	Controlling optical transmission through magneto-plasmonic crystals with an external magnetic field. <i>New Journal of Physics</i> , 2008 , 10, 105012	2-9	81
83	Coherent control of surface plasmon polariton mediated optical transmission. <i>Journal Physics D: Applied Physics</i> , 2008 , 41, 195102	3	17
82	Optical microscopy beyond the diffraction limit. <i>HFSP Journal</i> , 2008 , 2, 129-31		8
81	Nanophotonic devices based on plasmonic metamaterials. <i>Journal of Modern Optics</i> , 2008 , 55, 3187-3192	1	2
80	Unruh effect in a waveguide. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2008 , 372, 5861-5864	2-3	6
79	Photoluminescence from a gold nanotip in an accelerated reference frame. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2008 , 372, 7043-7045	2-3	8
78	Super-resolution microscopy using surface plasmon polaritons 2007 , 63-107		1

77	Enhanced transmission of light through a gold film due to excitation of standing surface-plasmon Bloch waves. <i>Physical Review B</i> , 2007 , 75,	3.3	6
76	Two-dimensional plasmonic metamaterials 2007 ,		2
75	Magnifying superlens in the visible frequency range. <i>Science</i> , 2007 , 315, 1699-701	33.3	591
74	Imaging and focusing properties of plasmonic metamaterial devices. <i>Physical Review B</i> , 2007 , 76,	3.3	32
73	Magnifying Superlens in the Visible Frequency Range 2007 ,		1
72	Fluorescence enhancement by surface gratings. <i>Optics Express</i> , 2006 , 14, 10825-30	3.3	76
71	Fluorescence enhancement by surface gratings 2006 ,		1
70	NONLINEAR NANO-OPTICS OF SURFACE PLASMONS AT THE "PLANCK SCALE". <i>Modern Physics Letters B</i> , 2006 , 20, 321-342	1.6	5
69	Digital resolution enhancement in surface plasmon microscopy. <i>Applied Physics B: Lasers and Optics</i> , 2006 , 84, 253-256	1.9	10
68	Chapter 3 Super-resolution microscopy using surface plasmon polaritons. <i>Advances in Nano-optics and Nano-photonics</i> , 2006 , 63-107		1
67	Resolution enhancement of a surface immersion microscope near the plasmon resonance. <i>Optics Letters</i> , 2005 , 30, 382-4	3	36
66	Imaging with short-wavelength surface plasmon polaritons. <i>Applied Physics Letters</i> , 2005 , 86, 151114	3.4	15
65	Far-field optical microscopy with a nanometer-scale resolution based on the in-plane image magnification by surface plasmon polaritons. <i>Physical Review Letters</i> , 2005 , 94, 057401	7.4	139
64	Plasmon-induced magnetization of metallic nanostructures. <i>Physical Review B</i> , 2005 , 71,	3.3	20
63	Light-induced resonant transmittance through a gold film. <i>Applied Physics Letters</i> , 2005 , 87, 041101	3.4	3
62	Characterization of time delayed diversity to mitigate fading in atmospheric turbulence channels 2005 ,		9
61	Image formation in surface plasmon polariton mirrors: applications in high-resolution optical microscopy. <i>New Journal of Physics</i> , 2005 , 7, 175-175	2.9	13
60	Nano-optics of surface plasmon polaritons. <i>Physics Reports</i> , 2005 , 408, 131-314	27.7	1666

59	A far-field optical microscope with nanometre-scale resolution based on in-plane surface plasmon imaging. <i>Journal of Optics</i> , 2005 , 7, S165-S175		14
58	Surface plasmon dielectric waveguides. <i>Applied Physics Letters</i> , 2005 , 87, 241106	3-4	37
57	Plasmon-polaritons on the surface of a pseudosphere. <i>Physical Review B</i> , 2005 , 72,	3-3	7
56	Super-resolution optical microscopy based on photonic crystal materials. <i>Physical Review B</i> , 2005 , 72,	3-3	33
55	Quantum fluctuations of the refractive index near the interface between a metal and a nonlinear dielectric. <i>Physical Review Letters</i> , 2005 , 94, 057403	7-4	31
54	Strong optical coupling effects through a continuous metal film with a surface dielectric grating 2005 ,		3
53	Near-field second-harmonic generation. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2004 , 362, 843-60	3	18
52	Wavelength dependent birefringence of surface plasmon polaritonic crystals. <i>Physical Review B</i> , 2004 , 70,	3-3	39
51	Linear and nonlinear optics of surface-plasmon whispering-gallery modes. <i>Physical Review B</i> , 2004 , 69,	3-3	17
50	Studies of pointing, acquisition, and tracking of agile optical wireless transceivers for free-space optical communication networks 2004 ,		10
49	Delayed diversity for fade resistance in optical wireless communications through turbulent media 2004 ,		14
48	Analysis of compound parabolic concentrators and aperture averaging to mitigate fading on free-space optical links 2004 ,		2
47	Polarization control of optical transmission of a periodic array of elliptical nanoholes in a metal film. <i>Optics Letters</i> , 2004 , 29, 1414-6	3	74
46	Studies of free-space optical links through simulated boundary layer and long-path turbulence 2004 , 5237, 127		
45	Polarization dependencies of the enhanced optical transmission through surface polaritonic crystals 2004 , 5554, 197		
44	Surface plasmon toy model of a rotating black hole. <i>New Journal of Physics</i> , 2003 , 5, 147-147	2-9	44
43	Near-field photonics: surface plasmon polaritons and localized surface plasmons. <i>Journal of Optics</i> , 2003 , 5, S16-S50		406
42	Single-photon tunneling in photonic crystals with deep defect states. <i>Optics Letters</i> , 2003 , 28, 93-5	3	

41	Electron-plasmon interaction in a cylindrical mesoscopic system: Important similarities with Kaluza-Klein theories. <i>Physical Review B</i> , 2003 , 67,	3.3	6
40	Polarization superprism effect in surface polaritonic crystals. <i>Applied Physics Letters</i> , 2003 , 82, 4438-4440	3.4	18
39	Near-field optical imaging of periodic plasmon sources. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2002 , 300, 97-100	2.3	
38	Optical second harmonic generation near a black hole horizon as possible source of experimental information on quantum gravitational effects. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2002 , 300, 375-380	2.3	0
37	Light-controlled photon tunneling. <i>Applied Physics Letters</i> , 2002 , 81, 3314-3316	3.4	22
36	Fractal extra dimension in Kaluza-Klein theory. <i>Physical Review D</i> , 2002 , 65,	4.9	11
35	Free-space optical wireless links with topology control 2002 , 4821, 175		5
34	Long-distance 1.2 Gb/s optical wireless communication link at 1550 nm 2002 ,		5
33	Effect of atmospheric turbulence on bit-error rate in an on-off-keyed optical wireless system 2002 ,		26
32	Micromachining of diamond using near-field scanning optical microscope. <i>Materials Letters</i> , 2002 , 52, 408-411	3.3	1
31	ELECTRONS ON SOLID HYDROGEN AND SOLID NEON SURFACES. <i>International Journal of Modern Physics B</i> , 2001 , 15, 2075-2106	1.1	8
30	High resolution study of permanent photoinduced reflectivity changes and charge-order domain switching in Bi(0.3)Ca(0.7)MnO(3). <i>Physical Review Letters</i> , 2001 , 87, 127204	7.4	28
29	Micromachining of diamond with a near-field scanning optical microscope. <i>Optics Letters</i> , 2001 , 26, 1495-1497	3.7	3
28	Local crystal analysis using near-field optical second harmonic microscopy: Application to thin ferroelectric films. <i>Journal of Applied Physics</i> , 2001 , 89, 206-211	2.5	20
27	Supercooling molecular hydrogen down through the superfluid transition. <i>Physical Review Letters</i> , 2000 , 85, 2861-4	7.4	3
26	Giant Enhancement of Surface Second Harmonic Generation in BaTiO3 due to Photorefractive Surface Wave Excitation. <i>Physical Review Letters</i> , 1999 , 83, 2429-2432	7.4	30
25	Observation of localized plasmonic excitations in thin metal films with near-field second-harmonic microscopy. <i>Optics Communications</i> , 1999 , 169, 93-96	2	23
24	Near-field optical microscopy of two-dimensional photonic and plasmonic crystals. <i>Physical Review B</i> , 1999 , 59, 2454-2460	3.3	26

23	Near-field second harmonic imaging of lead zirconate titanate piezoceramic. <i>Applied Physics Letters</i> , 1999 , 74, 1942-1944	3.4	22
22	Near-field microscopy of second-harmonic generation 1999 ,		5
21	Experimental study of probe-surface interaction in near-field optical microscopy. <i>Ultramicroscopy</i> , 1998 , 71, 177-182	3.1	19
20	Apparent superresolution in near-field optical imaging of periodic gratings. <i>Optics Letters</i> , 1998 , 23, 1346-7		18
19	Focused ion-beam fabrication of fiber probes with well-defined apertures for use in near-field scanning optical microscopy. <i>Applied Physics Letters</i> , 1998 , 72, 3133-3135	3.4	50
18	Scanning Probe Microscopy of Surface Plasmons. <i>International Journal of Modern Physics B</i> , 1997 , 11, 2465-2510	1.1	7
17	Experimental study of surface-plasmon scattering by individual surface defects. <i>Physical Review B</i> , 1997 , 56, 1601-1611	3.3	89
16	Near-field second harmonic generation from a rough metal surface. <i>Physical Review B</i> , 1997 , 56, 9290-9293	3.3	95
15	Near-field second-harmonic imaging of ferromagnetic and ferroelectric materials. <i>Optics Letters</i> , 1997 , 22, 1592-4	3	53
14	Fractal surface characterization: implications for plasmon polariton scattering. <i>Surface Science</i> , 1996 , 356, 268-274	1.8	22
13	Photon emission from a layer of copper phthalocyanine molecules on a gold (111) film surface induced by STM. <i>Surface Science</i> , 1996 , 364, 79-88	1.8	26
12	Imaging of Surface Plasmon Scattering by Lithographically Created Individual Surface Defects. <i>Physical Review Letters</i> , 1996 , 77, 3877-3880	7.4	119
11	The effect of the surface enhanced polariton field on the tunneling current of a STM. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1995 , 200, 438-444	2.3	25
10	Scattered light enhancement near a phase conjugating mirror. <i>Optics Communications</i> , 1995 , 115, 115-120		22
9	Direct observation of surface polariton localization caused by surface roughness. <i>Optics Communications</i> , 1995 , 117, 417-423	2	72
8	Near-field direct-write ultraviolet lithography and shear force microscopic studies of the lithographic process. <i>Applied Physics Letters</i> , 1995 , 67, 3859-3861	3.4	86
7	Characterization of phase-conjugated near-field light spots. <i>Journal of the Optical Society of America B: Optical Physics</i> , 1995 , 12, 1617	1.7	6
6	Correlation between optical and topographical images from an external reflection near-field microscope with shear force feedback. <i>Applied Optics</i> , 1995 , 34, 3793-9	1.7	33

5	Near-field microscopy of surface-plasmon polaritons: Localization and internal interface imaging. <i>Physical Review B</i> , 1995 , 51, 17916-17924	3.3	90
4	Phase conjugation of an optical near field. <i>Optics Letters</i> , 1994 , 19, 1601-3	3	46
3	Spectroscopic measurements of light emitted by the scanning tunneling microscope. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1991 , 158, 337-340	2.3	25
2	Light emission from the tunneling junction of the scanning tunneling microscope. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1990 , 149, 410-412	2.3	33
1	Cloaking316-385		