Gennady Shvets

List of Publications by Year in Descending Order

113 papers	6,269 citations	31 h-index	78 g-index
140 ext. papers	7,622 ext. citations	6.9 avg, IF	6.22 L-index

#	Paper	IF	Citations
113	Spin-Polarized Fractional Corner Charges and Their Photonic Realization.. *Physical Review Letters*, **2022**, 128, 026801	7.4	2
112	Electron energization dynamics in interaction of self-generated magnetic vortices in upstream of collisionless electron/ion shocks.. *Scientific Reports*, **2022**, 12, 7327	4.9	0
111	Probing the Drug Dynamics of Chemotherapeutics Using Metasurface-Enhanced Infrared Reflection Spectroscopy of Live Cells. *Cells*, **2022**, 11, 1600	7.9	0
110	Mode-selective single-dipole excitation and controlled routing of guided waves in a multi-mode topological waveguide. *Applied Physics Letters*, **2022**, 120, 221702	3.4	0
109	Subfemtosecond Wakefield Injector and Accelerator Based on an Undulating Plasma Bubble Controlled by a Laser Phase. *Physical Review Letters*, **2021**, 127, 164801	7.4	0
108	Exciton-Trion Polaritons in Doped Two-Dimensional Semiconductors. *Physical Review Letters*, **2021**, 126, 127402	7.4	1
107	Electrically Actuated Varifocal Lens Based on Liquid-Crystal-Embedded Dielectric Metasurfaces. *Nano Letters*, **2021**, 21, 3849-3856	11.5	17
106	Programmable Bloch polaritons in graphene. *Science Advances*, **2021**, 7,	14.3	1
105	Deep Optical Switching on Subpicosecond Timescales in an Amorphous Ge Metamaterial. *Advanced Optical Materials*, **2021**, 9, 2100240	8.1	2
104	Generation of even and odd high harmonics in resonant metasurfaces using single and multiple ultra-intense laser pulses. *Nature Communications*, **2021**, 12, 4185	17.4	8
103	Structure and dispersion of exciton-trion-polaritons in two-dimensional materials: Experiments and theory. *Physical Review Research*, **2021**, 3,	3.9	1
102	Laser-Ion Lens and Accelerator. *Physical Review Letters*, **2021**, 126, 024801	7.4	2
101	Many-body theory of radiative lifetimes of exciton-trion superposition states in doped two-dimensional materials. *Physical Review B*, **2021**, 103,	3.3	5
100	Zero-energy corner states in a non-Hermitian quadrupole insulator. *Physical Review B*, **2021**, 103,	3.3	4
99	Monitoring the effects of chemical stimuli on live cells with metasurface-enhanced infrared reflection spectroscopy. *Lab on A Chip*, **2021**, 21, 3991-4004	7.2	4
98	Infrared spectroscopy of live cells from a flowing solution using electrically-biased plasmonic metasurfaces. *Lab on A Chip*, **2020**, 20, 2136-2153	7.2	10
97	One-Way Leaky-Cladding Meta-Waveguides Based on Accidental Dirac Cones. *IEEE Transactions on Antennas and Propagation*, **2020**, 68, 1733-1738	4.9	

96	Laser-pulse and electron-bunch plasma wakefield accelerator. *Physical Review Accelerators and Beams*, **2020**, 23,	1.8	3
95	Imaging the local biochemical content of native and injured intervertebral disc using Fourier transform infrared microscopy. *JOR Spine*, **2020**, 3, e1121	3.7	0
94	Topology-Controlled Photonic Cavity Based on the Near-Conservation of the Valley Degree of Freedom. *Physical Review Letters*, **2020**, 125, 213902	7.4	8
93	Frequency Conversion in a Time-Variant Dielectric Metasurface. *Nano Letters*, **2020**, 20, 7052-7058	11.5	14
92	Enhanced Nonlinear Light Generation in Oligomers of Silicon Nanoparticles under Vector Beam Illumination. *Nano Letters*, **2020**, 20, 3471-3477	11.5	21
91	Direct laser acceleration of electrons in the plasma bubble by tightly focused laser pulses. *Physics of Plasmas*, **2019**, 26, 083101	2.1	9
90	Application of metasurface-enhanced infra-red spectroscopy to distinguish between normal and cancerous cell types. *Analyst, The*, **2019**, 144, 1115-1127	5	12
89	Photon acceleration and tunable broadband harmonics generation in nonlinear time-dependent metasurfaces. *Nature Communications*, **2019**, 10, 1345	17.4	41
88	Topologically protected photonic modes in composite quantum Hall/quantum spin Hall waveguides. *Physical Review B*, **2019**, 100,	3.3	5
87	Electrically defined topological interface states of graphene surface plasmons based on a gate-tunable quantum Bragg grating. *Nanophotonics*, **2019**, 8, 1417-1431	6.3	5
86	Polarization states synthesizer based on a thermo-optic dielectric metasurface. *Journal of Applied Physics*, **2019**, 126, 073102	2.5	5
85	Transition Radiation in Photonic Topological Crystals: Quasiresonant Excitation of Robust Edge States by a Moving Charge. *Physical Review Letters*, **2019**, 123, 057402	7.4	2
84	Tailored Nonlinear Anisotropy in Mie-Resonant Dielectric Oligomers. *Advanced Optical Materials*, **2019**, 7, 1900447	8.1	14
83	Photonic crystal for graphene plasmons. *Nature Communications*, **2019**, 10, 4780	17.4	30
82	Time-variant metasurfaces enable tunable spectral bands of negative extinction. *Optica*, **2019**, 6, 1441	8.6	12
81	Photonic emulation of two-dimensional materials with antiferromagnetic order. *Physical Review B*, **2019**, 100,	3.3	2
80	Overcoming the efficiency-bandwidth tradeoff for optical harmonics generation using nonlinear time-variant resonators. *Physical Review A*, **2019**, 100,	2.6	6
79	Light, the universe and everything 12 Herculean tasks for quantum cowboys and black diamond skiers. *Journal of Modern Optics*, **2018**, 65, 1261-1308	1.1	5

78	Growth and propagation of self-generated magnetic dipole vortices in collisionless shocks produced by interpenetrating plasmas. *Physics of Plasmas*, **2018**, 25, 012118	2.1	11
77	Rare-Earth Monopnictide Alloys for Tunable, Epitaxial, Designer Plasmonics. *ACS Photonics*, **2018**, 5, 3051-3056	6.3	4
76	Midinfrared Plasmonic Valleytronics in Metagate-Tuned Graphene. *Physical Review Letters*, **2018**, 121, 086807	7.4	30
75	Topologically protected refraction of robust kink states in valley photonic crystals. *Nature Physics*, **2018**, 14, 140-144	16.2	213
74	Far-field constant-gradient laser accelerator of electrons in an ion channel. *Physics of Plasmas*, **2018** , 25, 083101	2.1	7
73	Effects of laser polarization and wavelength on hybrid laser wakefield and direct acceleration. *Plasma Physics and Controlled Fusion*, **2018**, 60, 105002	2	4
72	Perfect Diffraction with Multiresonant Bianisotropic Metagratings. *ACS Photonics*, **2018**, 5, 4303-4311	6.3	46
71	Polarimetry Using Graphene-Integrated Anisotropic Metasurfaces. *ACS Photonics*, **2018**, 5, 4283-4288	6.3	18
70	Electrical tuning of the polarization state of light using graphene-integrated anisotropic metasurfaces. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2017**, 375,	3	14
69	Nonlinear plasma waves driven by short ultrarelativistic electron bunches. *Physics of Plasmas*, **2017**, 24, 103117	2.1	3
68	Scattering-free edge states between heterogeneous photonic topological insulators. *Physical Review B*, **2017**, 95,	3.3	56
67	Two-dimensional topological photonics. *Nature Photonics*, **2017**, 11, 763-773	33.9	405
66	Exciting reflectionless unidirectional edge modes in a reciprocal photonic topological insulator medium. *Physical Review B*, **2016**, 94,	3.3	17
65	Experimental demonstration of the microscopic origin of circular dichroism in two-dimensional metamaterials. *Nature Communications*, **2016**, 7, 12045	17.4	123
64	Single-shot visualization of evolving plasma wakefields **2016**,		5
63	Experimental Realization of a Reflections-Free Compact Delay Line Based on a Photonic Topological Insulator. *Scientific Reports*, **2016**, 6, 28453	4.9	47
62	Interplay Between Optical Bianisotropy and Magnetism in Plasmonic Metamolecules. *Nano Letters*, **2016**, 16, 4322-8	11.5	27
61	Laser wakefield and direct acceleration with ionization injection. *Plasma Physics and Controlled Fusion*, **2016**, 58, 034011	2	15

60	Real-Space Mapping of the Chiral Near-Field Distributions in Spiral Antennas and Planar Metasurfaces. *Nano Letters*, **2016**, 16, 663-70	11.5	43
59	Beyond the ponderomotive limit: Direct laser acceleration of relativistic electrons in sub-critical plasmas. *Physics of Plasmas*, **2016**, 23, 056704	2.1	70
58	Spontaneous emergence of non-planar electron orbits during direct laser acceleration by a linearly polarized laser pulse. *Physics of Plasmas*, **2016**, 23, 023111	2.1	16
57	Betatron x-rays from GeV laser-plasma-accelerated electrons **2016**,		1
56	Universal scalings for laser acceleration of electrons in ion channels. *Physics of Plasmas*, **2016**, 23, 103108	2.1	32
55	All-Si valley-Hall photonic topological insulator. *New Journal of Physics*, **2016**, 18, 025012	2.9	283
54	Dual-band moir metasurface patches for multifunctional biomedical applications. *Nanoscale*, **2016**, 8, 18461-18468	7.7	24
53	Guiding electromagnetic waves around sharp corners: topologically protected photonic transport in metawaveguides. *Physical Review Letters*, **2015**, 114, 127401	7.4	225
52	Synergistic laser-wakefield and direct-laser acceleration in the plasma-bubble regime. *Physical Review Letters*, **2015**, 114, 184801	7.4	55
51	Single quantum dot controls a plasmonic cavity's scattering and anisotropy. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 12288-92	11.5	40
50	Optical Realization of Double-Continuum Fano Interference and Coherent Control in Plasmonic Metasurfaces. *Physical Review Letters*, **2015**, 114, 237403	7.4	36
49	Spectrally selective chiral silicon metasurfaces based on infrared Fano resonances. *Nature Communications*, **2014**, 5, 3892	17.4	313
48	The analytic model of a laser-accelerated plasma target and its stability. *Physics of Plasmas*, **2014**, 21, 013110	2.1	20
47	Single-shot visualization of evolving laser wakefields using an all-optical streak camera. *Physical Review Letters*, **2014**, 113, 085001	7.4	14
46	Gyromagnetically induced transparency of metasurfaces. *Physical Review Letters*, **2014**, 112, 117402	7.4	57
45	Transmission-Line Model and Propagation in a Negative-Index, Parallel-Plate Metamaterial to Boost Electron-Beam Interaction. *IEEE Transactions on Antennas and Propagation*, **2014**, 62, 3212-3221	4.9	6
44	Fano-resonant metamaterials and their applications. *Nanophotonics*, **2013**, 2, 247-264	6.3	107
43	Photonic topological insulators. *Nature Materials*, **2013**, 12, 233-9	27	1045

42	Plasmonic nano-protractor based on polarization spectro-tomography. *Nature Photonics*, **2013**, 7, 367-372	33.9	30
41	Bright betatronlike x rays from radiation pressure acceleration of a mass-limited foil target. *Physical Review Letters*, **2013**, 110, 045001	7.4	60
40	Quasi-monoenergetic laser-plasma acceleration of electrons to 2 GeV. *Nature Communications*, **2013**, 4, 1988	17.4	419
39	Dynamic inductive tuning of Fano-resonant meta-surfaces using plasmonic response of graphene in mid-infrared **2013**,		1
38	Laser-seeded modulation instability in a proton driver plasma wakefield accelerator. *Physics of Plasmas*, **2013**, 20, 103111	2.1	8
37	Efficient infrared thermal emitters based on low-albedo polaritonic meta-surfaces. *Applied Physics Letters*, **2013**, 102, 211111	3.4	28
36	Plasmonic scaling of superconducting metamaterials. *Physical Review B*, **2013**, 88,	3.3	14
35	Prism-coupled surface wave accelerator based on silicon carbide. *Physical Review Special Topics: Accelerators and Beams*, **2012**, 15,		6
34	Halo formation and self-pinching of an electron beam undergoing the Weibel instability. *Physics of Plasmas*, **2012**, 19, 103106	2.1	2
33	Growth and characterization of single crystal rocksalt LaAs using LuAs barrier layers. *Applied Physics Letters*, **2012**, 101, 221908	3.4	10
32	Active negative-index metamaterial powered by an electron beam. *Physical Review B*, **2012**, 86,	3.3	58
31	Fano-resonant asymmetric metamaterials for ultrasensitive spectroscopy and identification of molecular monolayers. *Nature Materials*, **2011**, 11, 69-75	27	771
30	The influence of impurities and planar defects on the infrared properties of silicon carbide films. *Applied Physics Letters*, **2011**, 98, 191904	3.4	10
29	Ultrasensitive plasmonic fano sensor enables seeing protein monolayers with naked eye **2011**,		1
28	Simulations of stable compact proton beam acceleration from a two-ion-species ultrathin foil. *Physics of Plasmas*, **2011**, 18, 043110	2.1	30
27	Analytic model of electron beam thermalization during the resistive Weibel instability. *Physics of Plasmas*, **2011**, 18, 103109	2.1	3
26	Midinfrared Index Sensing of pL-Scale Analytes Based on Surface Phonon Polaritons in Silicon Carbide *Journal of Physical Chemistry C*, **2010**, 114, 7489-7491	3.8	39
25	Preparation For Laser Wakefield Experiments Driven by the Texas Petawatt Laser System **2009**,		2

24	Interplay of collisions and temperature on the filamentary structures of a relativistic electron beam in plasmas. *European Physical Journal D*, **2009**, 55, 415-420	1.3	2
23	Nonlinear evolution of the Weibel instability of relativistic electron beamsa). *Physics of Plasmas*, **2009**, 16, 056303	2.1	24
22	Electron self-injection and trapping into an evolving plasma bubble. *Physical Review Letters*, **2009**, 103, 135004	7.4	154
21	Wide-angle infrared absorber based on a negative-index plasmonic metamaterial. *Physical Review B* , **2009**, 79,	3.3	325
20	A subwavelength near-infrared negative index material. *Applied Physics Letters*, **2009**, 94, 131107	3.4	4
19	Simulation of the bulk and surface modes supported by a diamond lattice of metal wires. *Journal of Applied Physics*, **2008**, 104, 103107	2.5	2
18	Three-dimensional filamentary structures of a relativistic electron beam in fast ignition plasmas. *Physics of Plasmas*, **2008**, 15, 120702	2.1	7
17	Studies of laser wakefield structures and electron acceleration in underdense plasmasa). *Physics of Plasmas*, **2008**, 15, 056703	2.1	33
16	Guiding, focusing, and sensing on the subwavelength scale using metallic wire arrays. *Physical Review Letters*, **2007**, 99, 053903	7.4	143
15	Computationally efficient description of relativistic electron beam transport in collisionless plasma. *Physics of Plasmas*, **2007**, 14, 043103	2.1	16
14	Mid-infrared metamaterial based on perforated SiC membrane: engineering optical response using surface phonon polaritons. *Applied Physics A: Materials Science and Processing*, **2007**, 88, 605-609	2.6	27
13	Relativistic dynamical bistability and adiabatic excitation of strong plasma wavesa). *Physics of Plasmas*, **2007**, 14, 055908	2.1	5
12	Snapshots of Laser-Generated Wakefields. *AIP Conference Proceedings*, **2006**,	0	1
11	Adiabatic bistable evolution of dynamical systems governed by a Hamiltonian with separatrix crossing. *Physics of Plasmas*, **2006**, 13, 054502	2.1	5
10	Compression of laser radiation in plasmas via electromagnetic cascadinga). *Physics of Plasmas*, **2006** , 13, 056707	2.1	6
9	Injection, trapping, and acceleration of electrons in a three-dimensional nonlinear laser wakefield. *Physics of Plasmas*, **2006**, 13, 113102	2.1	40
8	Nonlinear control of fast light by slow light. *Journal of Modern Optics*, **2006**, 53, 2507-2518	1.1	4
7	Snapshots of laser wakefields. *Nature Physics*, **2006**, 2, 749-753	16.2	147

6	Beat-wave excitation of plasma waves based on relativistic bistability. *Physical Review Letters*, **2004**, 93, 195004	7.4	13
5	Stimulated Raman backscattering of laser radiation in deep plasma channels. *Physics of Plasmas*, **2004**, 11, 4686-4694	2.1	13
4	Polariton-enhanced near field lithography and imaging with infrared light. *Materials Research Society Symposia Proceedings*, **2004**, 820, 243		7
3	Engineering the electromagnetic properties of periodic nanostructures using electrostatic resonances. *Physical Review Letters*, **2004**, 93, 243902	7.4	96
2	Monitoring the effects of chemical stimuli on live cells with metasurface-enhanced infrared reflection spectroscopy		1
1	Metasurface-Enhanced Infrared Spectroscopy: An Abundance of Materials and Functionalities. *Advanced Materials*,2110163	24	0