

# Igor Kostyukov

## List of Publications by Citations

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94  
papers

2,258  
citations

23  
h-index

45  
g-index

108  
ext. papers

2,566  
ext. citations

2.4  
avg, IF

5.02  
L-index

#	Paper	IF	Citations
94	Phenomenological theory of laser-plasma interaction in bubble regime. <i>Physics of Plasmas</i> , <b>2004</b> , 11, 5256-5264	2.1	216
93	Laser field absorption in self-generated electron-positron pair plasma. <i>Physical Review Letters</i> , <b>2011</b> , 106, 035001	7.4	213
92	QED cascades induced by circularly polarized laser fields. <i>Physical Review Special Topics: Accelerators and Beams</i> , <b>2011</b> , 14,		212
91	Radiation-reaction trapping of electrons in extreme laser fields. <i>Physical Review Letters</i> , <b>2014</b> , 112, 145003	7.4	122
90	X-ray generation in an ion channel. <i>Physics of Plasmas</i> , <b>2003</b> , 10, 4818-4828	2.1	117
89	X-ray generation in strongly nonlinear plasma waves. <i>Physical Review Letters</i> , <b>2004</b> , 93, 135004	7.4	114
88	Self-compression of laser pulses in plasma. <i>Physical Review Letters</i> , <b>2003</b> , 91, 265002	7.4	82
87	Electron self-injection in multidimensional relativistic-plasma wake fields. <i>Physical Review Letters</i> , <b>2009</b> , 103, 175003	7.4	80
86	The bubble regime of laser-plasma acceleration: monoenergetic electrons and the scalability. <i>Plasma Physics and Controlled Fusion</i> , <b>2004</b> , 46, B179-B186	2	71
85	Energy partition, X-ray emission, and radiation reaction in the near-quantum electrodynamic regime of laser-plasma interaction. <i>Physics of Plasmas</i> , <b>2014</b> , 21, 023109	2.1	65
84	Horizon 2020 EuPRAXIA design study. <i>Journal of Physics: Conference Series</i> , <b>2017</b> , 874, 012029	0.3	57
83	Optimized multibeam configuration for observation of QED cascades. <i>Physical Review A</i> , <b>2015</b> , 92,	2.6	52
82	Effect of laser polarization on quantum electrodynamic cascading. <i>Physics of Plasmas</i> , <b>2014</b> , 21, 013105	2.1	50
81	Demonstration of the ultrafast nature of laser produced betatron radiation. <i>Physics of Plasmas</i> , <b>2007</b> , 14, 080701	2.1	49
80	Control of laser-wakefield acceleration by the plasma-density profile. <i>Physical Review E</i> , <b>2008</b> , 77, 025401	1.4	39
79	Carrier-envelope phase effects in plasma-based electron acceleration with few-cycle laser pulses. <i>Physical Review Letters</i> , <b>2009</b> , 103, 035001	7.4	38
78	Laser-driven hole boring and gamma-ray emission in high-density plasmas. <i>Plasma Physics and Controlled Fusion</i> , <b>2015</b> , 57, 035007	2	30

77	Gamma-ray generation in ultrahigh-intensity laser-foil interactions. <i>Physics of Plasmas</i> , <b>2014</b> , 21, 013109	2.1	28
76	Magnetic-field generation and electron acceleration in relativistic laser channel. <i>Physics of Plasmas</i> , <b>2002</b> , 9, 636-648	2.1	28
75	Plasma-based methods for electron acceleration: current status and prospects. <i>Physics-Uspexhi</i> , <b>2015</b> , 58, 81-88	2.8	26
74	Production and dynamics of positrons in ultrahigh intensity laser-foil interactions. <i>Physics of Plasmas</i> , <b>2016</b> , 23, 093119	2.1	26
73	A multidimensional theory for electron trapping by a plasma wake generated in the bubble regime. <i>New Journal of Physics</i> , <b>2010</b> , 12, 045009	2.9	25
72	Analytical model for electromagnetic cascades in rotating electric field. <i>Physics of Plasmas</i> , <b>2011</b> , 18, 083107	2.1	23
71	Collisional versus collisionless resonant and autoresonant heating in laser-cluster interaction. <i>Physical Review E</i> , <b>2003</b> , 67, 066405	2.4	23
70	EuPRAXIA Conceptual Design Report. <i>European Physical Journal: Special Topics</i> , <b>2020</b> , 229, 3675-4284	2.3	23
69	Relativistic laser plasmas for electron acceleration and short wavelength radiation generation. <i>Plasma Physics and Controlled Fusion</i> , <b>2010</b> , 52, 124039	2	22
68	Field-reversed bubble in deep plasma channels for high-quality electron acceleration. <i>Physical Review Letters</i> , <b>2014</b> , 113, 245003	7.4	20
67	Radiation emission by extreme relativistic electrons and pair production by hard photons in a strong plasma wakefield. <i>Physical Review E</i> , <b>2007</b> , 75, 057401	2.4	20
66	Magneto-inertial fusion with laser compression of a magnetized spherical target. <i>Plasma Physics Reports</i> , <b>2011</b> , 37, 1092-1098	1.2	19
65	Inverse-bremsstrahlung absorption of an intense laser field in cluster plasma. <i>JETP Letters</i> , <b>2001</b> , 73, 393-397	1.2	18
64	Relativistic second-harmonic generation and conversion in a weakly magnetized plasma. <i>Physics of Plasmas</i> , <b>2000</b> , 7, 1026-1034	2.1	18
63	Probing non-perturbative QED with electron-laser collisions. <i>Scientific Reports</i> , <b>2019</b> , 9, 9407	4.9	17
62	Non-linear theory of a cavitated plasma wake in a plasma channel for special applications and control. <i>Physics of Plasmas</i> , <b>2016</b> , 23, 053108	2.1	15
61	Analytic model for electromagnetic fields in the bubble regime of plasma wakefield in non-uniform plasmas. <i>Physics of Plasmas</i> , <b>2017</b> , 24, 103104	2.1	14
60	Fast electron generation using PW-class PEARL facility. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , <b>2011</b> , 653, 35-41	1.2	14

59	Two-screen single-shot electron spectrometer for laser wakefield accelerated electron beams. <i>Review of Scientific Instruments</i> , <b>2011</b> , 82, 043304	1.7	13
58	Near QED regime of laser interaction with overdense plasmas. <i>European Physical Journal: Special Topics</i> , <b>2014</b> , 223, 1069-1082	2.3	12
57	Incoherent synchrotron emission of laser-driven plasma edge. <i>Physics of Plasmas</i> , <b>2015</b> , 22, 123119	2.1	11
56	Radiative damping in plasma-based accelerators. <i>Physical Review Special Topics: Accelerators and Beams</i> , <b>2012</b> , 15,		11
55	Ultrahigh-Intensity Inverse-Bremsstrahlung Absorption. <i>Physical Review Letters</i> , <b>1999</b> , 83, 2206-2209	7.4	11
54	Influence of external inhomogeneous static fields on interaction between beam of charged particles and packet of electromagnetic waves. <i>Physics of Plasmas</i> , <b>1995</b> , 2, 923-934	2.1	11
53	Kinetic modelling of quantum effects in laser-beam interaction. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , <b>2011</b> , 653, 7-10	1.2	10
52	Beam loading in the bubble regime in plasmas with hollow channels. <i>Physics of Plasmas</i> , <b>2016</b> , 23, 093114	4.1	10
51	Coherent acceleration by laser pulse echelons in periodic plasma structures. <i>European Physical Journal: Special Topics</i> , <b>2014</b> , 223, 1197-1206	2.3	9
50	Near-surface electron acceleration during intense laser-solid interaction in the grazing incidence regime. <i>Physics of Plasmas</i> , <b>2017</b> , 24, 123115	2.1	9
49	Efficient gamma-ray source from solid-state microstructures irradiated by relativistic laser pulses. <i>Plasma Physics and Controlled Fusion</i> , <b>2019</b> , 61, 074007	2	8
48	Temporal and spatial expansion of a multi-dimensional model for electron acceleration in the bubble regime. <i>Laser and Particle Beams</i> , <b>2014</b> , 32, 277-284	0.9	8
47	Generalised model of a sheath of a plasma bubble excited by a short laser pulse or by a relativistic electron bunch in transversely inhomogeneous plasma. <i>Quantum Electronics</i> , <b>2016</b> , 46, 295-298	1.8	8
46	Field ionization in short and extremely intense laser pulses. <i>Physical Review A</i> , <b>2018</b> , 98,	2.6	8
45	Weibel Instability in Hot Plasma Flows with the Production of Gamma-Rays and Electron-Positron Pairs. <i>Astrophysical Journal</i> , <b>2017</b> , 851, 129	4.7	7
44	Prospects of PEARL 10 and XCELS Laser Facilities. <i>The Review of Laser Engineering</i> , <b>2014</b> , 42, 141	0	7
43	Status of the Horizon 2020 EuPRAXIA conceptual design study. <i>Journal of Physics: Conference Series</i> , <b>2019</b> , 1350, 012059	0.3	7
42	Ionization-induced laser-driven QED cascade in noble gases. <i>Physical Review A</i> , <b>2017</b> , 96,	2.6	6

41	Laser-driven vacuum breakdown waves. <i>Scientific Reports</i> , <b>2019</b> , 9, 11133	4.9	6
40	Stochastic heating and stochastic outer ionization of an atomic cluster in a laser field. <i>Journal of Experimental and Theoretical Physics</i> , <b>2005</b> , 100, 903-910	1	6
39	Inverse Faraday effect in a relativistic laser channel. <i>Laser and Particle Beams</i> , <b>2001</b> , 19, 133-136	0.9	6
38	Ultra-high-intensity inverse bremsstrahlung. <i>Physical Review E</i> , <b>1999</b> , 59, 1122-1135	2.4	6
37	Radiative losses in plasma accelerators. <i>Journal of Experimental and Theoretical Physics</i> , <b>2006</b> , 103, 800-807		5
36	Stochastic heating in field-reversed low pressure discharges. <i>Physics of Plasmas</i> , <b>2000</b> , 7, 185-192	2.1	5
35	Asymptotic electron motion in the strongly-radiation-dominated regime. <i>Physical Review A</i> , <b>2018</b> , 98,	2.6	5
34	Relativistic laser-plasma bubbles: new sources of energetic particles and x-rays. <i>Nuclear Fusion</i> , <b>2004</b> , 44, S191-S201	3.3	4
33	Noninductive current profile broadening by electric and magnetic fluctuations. <i>Physics of Plasmas</i> , <b>1999</b> , 6, 3233-3238	2.1	4
32	Experimental study of strongly mismatched regime of laser-driven wakefield acceleration. <i>Plasma Physics and Controlled Fusion</i> , <b>2020</b> , 62, 094004	2	4
31	Hydrodynamical model of QED cascade expansion in an extremely strong laser pulse. <i>Matter and Radiation at Extremes</i> , <b>2021</b> , 6, 034401	4.7	4
30	Bubble regime of plasma wakefield in 2D and 3D geometries. <i>Physics of Plasmas</i> , <b>2018</b> , 25, 103107	2.1	4
29	EuPRAXIA: a compact, cost-efficient particle and radiation source <b>2019</b> ,		3
28	Global constant field approximation for radiation reaction in collision of high-intensity laser pulse with electron beam. <i>Plasma Physics and Controlled Fusion</i> , <b>2019</b> , 61, 074003	2	3
27	Response to 'Comment on 'Phenomenological theory of laser-plasma interaction in 'Bubble' regime' [Phys. Plasmas 17, 054703 (2010)]. <i>Physics of Plasmas</i> , <b>2010</b> , 17, 054704	2.1	3
26	Cathode Sheath Instability at Frequencies Near the Ion Plasma Frequency. <i>Radiophysics and Quantum Electronics</i> , <b>2003</b> , 46, 873-885	0.7	3
25	Quasi-monoenergetic electron acceleration in relativistic laser-plasmas. <i>Comptes Rendus Physique</i> , <b>2009</b> , 10, 159-166	1.4	2
24	Efficient Narrow-Band Terahertz Radiation from Electrostatic Wakefields in Nonuniform Plasmas. <i>Physical Review Letters</i> , <b>2021</b> , 127, 175001	7.4	2

23	Fixing E-field divergence in strongly non-linear wakefields in homogeneous plasma. <i>Plasma Physics and Controlled Fusion</i> , <b>2020</b> , 62, 115017	2	2
22	Formation and dynamics of a plasma in superstrong laser fields including radiative and quantum electrodynamics effects. <i>JETP Letters</i> , <b>2016</b> , 104, 883-891	1.2	2
21	Perspectives of implementing QED cascade production with the next generation of laser facilities. <i>Journal of Physics: Conference Series</i> , <b>2015</b> , 594, 012054	0.3	1
20	Laser fields in dynamically ionized plasma structures for coherent acceleration. <i>European Physical Journal: Special Topics</i> , <b>2015</b> , 224, 2625-2629	2.3	1
19	Superluminal phase velocity approach for suppression of Numerical Cherenkov Instability in Maxwell solver. <i>Journal of Physics: Conference Series</i> , <b>2020</b> , 1692, 012002	0.3	1
18	Features of Fundamental- and Subharmonics ECR Heating in a Magnetic Trap. <i>Radiophysics and Quantum Electronics</i> , <b>2002</b> , 45, 795-805	0.7	1
17	On Landau damping in models of Langmuir turbulence. <i>Physica D: Nonlinear Phenomena</i> , <b>1995</b> , 87, 295-300	3.0	1
16	Influence of static fields and ponderomotive forces on the beam-plasma interaction. <i>Physica Scripta</i> , <b>1993</b> , 47, 221-223	2.6	1
15	Quasiclassical approach to synergic synchrotron-Cherenkov radiation in polarized vacuum. <i>New Journal of Physics</i> , <b>2020</b> , 22, 093072	2.9	1
14	Effect of transverse displacement of charged particle beams on quantum electrodynamic processes during their collision. <i>Quantum Electronics</i> , <b>2021</b> , 51, 807-811	1.8	1
13	Generation of IR radiation in the interaction of an ultrashort laser pulse with a gas jet. <i>Quantum Electronics</i> , <b>2021</b> , 51, 850-853	1.8	1
12	Using machine-learning methods for analysing the results of numerical simulation of laser-plasma acceleration of electrons. <i>Quantum Electronics</i> , <b>2021</b> , 51, 854-860	1.8	1
11	Effect of electron-positron plasma production on the generation of a magnetic field in laser-plasma interactions. <i>Quantum Electronics</i> , <b>2021</b> , 51, 861-865	1.8	1
10	Beamstrahlung-enhanced disruption in beam-beam interaction. <i>New Journal of Physics</i> , <b>2021</b> , 23, 103040	2.9	0
9	Excitation of strongly nonlinear plasma wakefield by electron bunches. <i>Plasma Physics and Controlled Fusion</i> , <b>2021</b> , 63, 085004	2	0
8	Piecewise-homogeneous model for electron side injection into linear plasma waves. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , <b>2016</b> , 829, 392-396	1.2	0
7	Transformation of a nonlinear plasma wave into electromagnetic radiation in a periodic magnetic field. <i>Radiophysics and Quantum Electronics</i> , <b>2007</b> , 50, 452-463	0.7	0
6	Kinetic modeling of wakefield generation in ultrahigh intensity laser-plasma interaction. <i>Journal of Physics: Conference Series</i> , <b>2007</b> , 63, 012016	0.3	0

- 5 Reconstruction of electron spectrum after magnetic spectrometer with weak magnet. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, **2022**, 1025, 166097 1.2
- 4 Piecewise acceleration of electrons across a periodic solid-state structure irradiated by intense laser pulse. *Plasma Physics and Controlled Fusion*, **2020**, 62, 104002 2
- 3 Some Relations from Hamiltonian Mechanics and their Applications to Plasma Physics **1999**, 449-452
- 2 Relativistic Laser Plasmas for Electron Acceleration and Short Wavelength Radiation Generation. *Springer Series in Chemical Physics*, **2011**, 191-223 0.3
- 1 Generation of electron-positron pairs by laser-ion implosion of a target with a spherical microbubble inside. *Quantum Electronics*, **2021**, 51, 795-800 1.8