

Vladimir Bratman

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119
papers

2,592
citations

27
h-index

47
g-index

144
ext. papers

3,256
ext. citations

1.9
avg, IF

4.56
L-index

#	Paper	IF	Citations
119	Relativistic gyrotrons and cyclotron autoresonance masers. <i>International Journal of Electronics</i> , 1981 , 51, 541-567	1.2	246
118	Large-orbit gyrotron operation in the terahertz frequency range. <i>Physical Review Letters</i> , 2009 , 102, 2451-2454	10.1	190
117	Gyrotron Traveling Wave Amplifier with a Helical Interaction Waveguide. <i>Physical Review Letters</i> , 1998 , 81, 5680-5683	7.4	139
116	High-gain wide-band gyrotron traveling wave amplifier with a helically corrugated waveguide. <i>Physical Review Letters</i> , 2000 , 84, 2746-9	7.4	137
115	Gyro-TWT with a helical operating waveguide: new possibilities to enhance efficiency and frequency bandwidth. <i>IEEE Transactions on Plasma Science</i> , 1998 , 26, 508-518	1.3	125
114	Theory of gyrotrons with a nonfixed structure of the high-frequency field. <i>Radiophysics and Quantum Electronics</i> , 1973 , 16, 474-480	0.7	115
113	Review of Subterahertz and Terahertz Gyrodevices at IAP RAS and FIR FU. <i>IEEE Transactions on Plasma Science</i> , 2009 , 37, 36-43	1.3	92
112	Moderately relativistic high-harmonic gyrotrons for millimeter/submillimeter wavelength band. <i>IEEE Transactions on Plasma Science</i> , 1999 , 27, 456-461	1.3	70
111	Millimeter-Wave HF Relativistic Electron Oscillators. <i>IEEE Transactions on Plasma Science</i> , 1987 , 15, 2-15	1.3	58
110	Compression of frequency-modulated pulses using helically corrugated waveguides and its potential for generating multigigawatt rf radiation. <i>Physical Review Letters</i> , 2004 , 92, 118301	7.4	51
109	Theory and simulations of a gyrotron backward wave oscillator using a helical interaction waveguide. <i>Applied Physics Letters</i> , 2006 , 89, 091504	3.4	47
108	Experimental demonstration of high-efficiency cyclotron-autoresonance-maser operation. <i>Physical Review Letters</i> , 1995 , 75, 3102-3105	7.4	47
107	High-efficiency wideband gyro-TWTs and gyro-BWOs with helically corrugated waveguides. <i>Radiophysics and Quantum Electronics</i> , 2007 , 50, 95-107	0.7	46
106	Terahertz Gyrotrons at IAP RAS: Status and New Designs. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2011 , 32, 371-379	2.2	44
105	Gyro-BWO experiments using a helical interaction waveguide. <i>IEEE Transactions on Electron Devices</i> , 2005 , 52, 839-844	2.9	44
104	Terahertz Orotrons and Oromultipliers. <i>IEEE Transactions on Plasma Science</i> , 2010 , 38, 1466-1471	1.3	43
103	Terahertz Large-Orbit High-Harmonic Gyrotrons at IAP RAS: Recent Experiments and New Designs. <i>IEEE Transactions on Electron Devices</i> , 2018 , 65, 2287-2293	2.9	40

102	Gyrotron Development for High Power THz Technologies at IAP RAS. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2012 , 33, 715-723	2.2	40
101	Pulsed Orotron – a new microwave source for submillimeter pulse high-field electron paramagnetic resonance spectroscopy. <i>Review of Scientific Instruments</i> , 2004 , 75, 2926-2936	1.7	39
100	Mastering the terahertz domain: sources and applications. <i>Physics-Uspekhi</i> , 2011 , 54, 837-844	2.8	38
99	Dispersion of helically corrugated waveguides: analytical, numerical, and experimental study. <i>Physical Review E</i> , 2004 , 70, 046402	2.4	38
98	Plasma creation by terahertz electromagnetic radiation. <i>Physics of Plasmas</i> , 2011 , 18, 083507	2.1	32
97	Frequency-tunable CW gyro-BWO with a helically rippled operating waveguide. <i>IEEE Transactions on Plasma Science</i> , 2004 , 32, 884-889	1.3	32
96	Negative-mass mitigation of Coulomb repulsion for terahertz undulator radiation of electron bunches. <i>Applied Physics Letters</i> , 2015 , 107, 163505	3.4	31
95	Experimental demonstration of Smith-Purcell radiation enhancement by frequency multiplication in open cavity. <i>Applied Physics Letters</i> , 2011 , 98, 061503	3.4	30
94	Generation of 3 GW microwave pulses in X-band from a combination of a relativistic backward-wave oscillator and a helical-waveguide compressor. <i>Physics of Plasmas</i> , 2010 , 17, 110703	2.1	29
93	Submillimeter-wave large-orbit gyrotron. <i>Radiophysics and Quantum Electronics</i> , 2005 , 48, 731-736	0.7	28
92	Cyclotron autoresonance masers – recent experiments and prospects. <i>International Journal of Electronics</i> , 1992 , 72, 969-981	1.2	27
91	Experimental study of a fourth-harmonic gyromultiplier. <i>Physics of Plasmas</i> , 2009 , 16, 070701	2.1	25
90	Powerful millimeter-wave generators based on the stimulated Cerenkov radiation of relativistic electron beams. <i>Journal of Infrared, Millimeter and Terahertz Waves</i> , 1984 , 5, 1311-1332		25
89	Effective coupling of cyclotron autoresonance maser and "gyrotron" modes on a phase-synchronized electron beam. <i>Physical Review E</i> , 2000 , 62, 4207-15	2.4	23
88	Phase mixing of bunches and decrease of negative-mass instability increments in cyclotron resonance masers. <i>Physics of Plasmas</i> , 1995 , 2, 557-564	2.1	23
87	Development of a Magnetic Cusp Gun for Terahertz Harmonic Gyrodevices. <i>IEEE Transactions on Electron Devices</i> , 2012 , 59, 3635-3640	2.9	21
86	High-power electrostatic free-electron maser as a future source for fusion plasma heating: experiments in the short-pulse regime. <i>Physical Review E</i> , 1999 , 59, 6058-63	2.4	21
85	Possibilities for Continuous Frequency Tuning in Terahertz Gyrotrons with Nontunable Electrodynamic Systems. <i>Radiophysics and Quantum Electronics</i> , 2016 , 58, 660-672	0.7	21

84	Numerical Study of a Low-Voltage Gyrotron (Gyrotrino) for DNP/NMR Spectroscopy. <i>IEEE Transactions on Plasma Science</i> , 2017 , 45, 644-648	1.3	20
83	Microwave pulse compression using a helically corrugated waveguide. <i>IEEE Transactions on Plasma Science</i> , 2005 , 33, 661-667	1.3	20
82	THz Gyrotron and BWO Designed for Operation in DNP-NMR Spectrometer Magnet. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2013 , 34, 837-846	2.2	18
81	Features of plasma glow in low pressure terahertz gas discharge. <i>Physics of Plasmas</i> , 2013 , 20, 123512	2.1	17
80	Sources of Coherent Terahertz Radiation. <i>AIP Conference Proceedings</i> , 2006 ,	0	17
79	Radiation and radiative damping of a charged plane, oscillating with a relativistic velocity. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1995 , 206, 377-382	2.3	17
78	Experimental Study of Microwave Pulse Compression Using a Five-Fold Helically Corrugated Waveguide. <i>IEEE Transactions on Microwave Theory and Techniques</i> , 2015 , 63, 1090-1096	4.1	16
77	Operation of a sub-terahertz CW gyrotron with an extremely low voltage. <i>Physics of Plasmas</i> , 2017 , 24, 113105	2.1	15
76	To the problem of energy recuperation in gyrotrons. <i>Journal of Infrared, Millimeter and Terahertz Waves</i> , 1995 , 16, 459-471		15
75	Excitation of orotron oscillations at the doubled frequency of a surface wave. <i>Radiophysics and Quantum Electronics</i> , 2007 , 50, 780-785	0.7	14
74	Conditions for self-excitation of a cyclotron resonance maser with a nonresonant electrodynamic system. <i>Radiophysics and Quantum Electronics</i> , 1975 , 18, 772-779	0.7	13
73	Peculiarities of the coherent spontaneous synchrotron radiation of dense electron bunches. <i>Physics of Plasmas</i> , 2014 , 21, 023103	2.1	12
72	Theory of gyro devices with thin electron beams (large-orbit gyrotrons). <i>Technical Physics</i> , 1998 , 43, 1219-1225	0.5	12
71	Pulsed wideband orotrons of millimeter and submillimeter waves. <i>Radiophysics and Quantum Electronics</i> , 2006 , 49, 866-871	0.7	12
70	Temporal Dynamics of Mode Interaction in Submillimeter-Wave Second-Harmonic Gyrotron. <i>Journal of Infrared, Millimeter and Terahertz Waves</i> , 2001 , 22, 1409-1420		12
69	First microwave generation in the FOM free-electron maser. <i>Plasma Physics and Controlled Fusion</i> , 1998 , 40, A139-A156	2	12
68	Design and Numerical Analysis of W-band Oscillators With Hollow Electron Beam. <i>IEEE Transactions on Electron Devices</i> , 2014 , 61, 1795-1799	2.9	11
67	Smith-Burcell frequency multiplier with synchronization of radiation from a wide electron beam. <i>Applied Physics Letters</i> , 2009 , 94, 061501	3.4	11

66	Recovery of electron energy in cyclotron autoresonance masers. <i>Physics of Plasmas</i> , 1997 , 4, 2285-2291	2.1	11
65	Effective Co-generation of opposite and forward waves in cyclotron-resonance masers. <i>Physical Review Letters</i> , 2000 , 85, 3424-7	7.4	11
64	Smooth Wideband Frequency Tuning in Low-Voltage Gyrotron With Cathode-End Power Output. <i>IEEE Transactions on Electron Devices</i> , 2017 , 64, 5147-5150	2.9	10
63	Microwave source of multigigawatt peak power based on a relativistic backward-wave oscillator and a compressor. <i>Technical Physics</i> , 2011 , 56, 269-273	0.5	10
62	Large-orbit Subterahertz and Terahertz gyrotrons. <i>Radiophysics and Quantum Electronics</i> , 2009 , 52, 472-481	1.3	10
61	Broadband Orotron Operation at Millimeter and Submillimeter Waves. <i>Journal of Infrared, Millimeter and Terahertz Waves</i> , 2002 , 23, 1595-1601		10
60	Experimental study of an FEM with a microwave system of a new type. <i>IEEE Transactions on Plasma Science</i> , 1996 , 24, 744-749	1.3	10
59	High-frequency devices with weakly relativistic hollow thin-wall electron beams. <i>Physics of Plasmas</i> , 2012 , 19, 020704	2.1	9
58	Electron-optical system of terahertz gyrotron. <i>Journal of Communications Technology and Electronics</i> , 2011 , 56, 500-507	0.5	9
57	New Versions of Terahertz Radiation Sources for Dynamic Nuclear Polarization in Nuclear Magnetic Resonance Spectroscopy. <i>Radiophysics and Quantum Electronics</i> , 2014 , 56, 532-541	0.7	8
56	Frequency Tuning in a Subterahertz Gyrotron With a Variable Cavity. <i>IEEE Transactions on Electron Devices</i> , 2014 , 61, 3529-3533	2.9	8
55	Experimental results on microwave pulse compression using helically corrugated waveguide. <i>Journal of Applied Physics</i> , 2010 , 108, 054908	2.5	8
54	Frequency multiplication in gyrotron autooscillators. <i>Technical Physics Letters</i> , 2006 , 32, 84-87	0.7	8
53	Effects of Spatial Reproduction and Multiplication for Electron Waves in Semiconductor Nanostructures. <i>Physica Status Solidi (B): Basic Research</i> , 2000 , 221, 459-462	1.3	8
52	Space charge effects as a source of electron energy spread and efficiency degradation in gyrotrons. <i>IEEE Transactions on Plasma Science</i> , 2000 , 28, 633-637	1.3	8
51	Design of a Powerful and Compact THZ Oscillator. <i>Journal of Infrared, Millimeter and Terahertz Waves</i> , 2007 , 27, 1063-1071		7
50	Long-pulse operation at constant output power and single-frequency mode of a high-power electrostatic free-electron maser with depressed collector. <i>Physical Review Letters</i> , 2002 , 89, 214801	7.4	7
49	Cyclotron autoresonance maser with high Doppler frequency up-conversion. <i>Journal of Infrared, Millimeter and Terahertz Waves</i> , 1992 , 13, 1857-1873		7

48	Undulator radiation of premodulated and nonmodulated electron bunches in the negative mass instability regime. <i>Physical Review Accelerators and Beams</i> , 2018 , 21,	1.8	7
47	Method for achievement of a multigigawatt peak power by compressing microwave pulses of a relativistic backward-wave oscillator in a helical waveguide. <i>Radiophysics and Quantum Electronics</i> , 2007 , 50, 36-48	0.7	6
46	Electron-optical system for a large-orbit gyrotron. <i>Technical Physics</i> , 2005 , 50, 1611	0.5	6
45	Voltage-tuned relativistic backward wave oscillator. <i>Technical Physics Letters</i> , 2010 , 36, 140-143	0.7	5
44	The starting regime for an MCR-monotron with a cavity having a low diffraction Q. <i>Radiophysics and Quantum Electronics</i> , 1974 , 17, 1181-1187	0.7	5
43	A Long Cavity With Reduced Diffraction Q for Subterahertz and Terahertz Gyrotrons. <i>IEEE Transactions on Plasma Science</i> , 2015 , 43, 2598-2606	1.3	4
42	Numerical simulations of a co-harmonic gyrotron. <i>Journal Physics D: Applied Physics</i> , 2012 , 45, 065105	3	4
41	A high power, tunable free electron maser for fusion. <i>Fusion Engineering and Design</i> , 2001 , 53, 423-430	1.7	4
40	A gyrodevice based on simultaneous excitation of opposite and forward waves (Gyrotron BWO-TWT). <i>IEEE Transactions on Plasma Science</i> , 2000 , 28, 1742-1746	1.3	4
39	Electron-Optical System of the Gyrotron Designed for Operation in the DNP-NMR Spectrometer Cryomagnet (Gyrotrino). <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2017 , 38, 929-937	2.2	4
38	Simultaneous high-frequency Super-Radiance and low-frequency Coherent Spontaneous Radiation from ultrarelativistic electrons in a waveguide. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2020 , 976, 164268	1.2	4
37	Capabilities of Terahertz Cyclotron and Undulator Radiation from Short Ultrarelativistic Electron Bunches. <i>Instruments</i> , 2019 , 3, 55	1.2	4
36	Undulator Radiation of Dense Plane Electron Bunches. <i>IEEE Transactions on Plasma Science</i> , 2015 , 43, 532-538	1.3	3
35	RF Pulse Compression Using Helically Corrugated Waveguides. <i>AIP Conference Proceedings</i> , 2006 ,	0	3
34	Mode dynamics in a free electron maser with broadband frequency-dispersive feedback. <i>Physics of Plasmas</i> , 2001 , 8, 638-642	2.1	3
33	The spread of the initial energy of electrons in a gyrotron due to the negative-mass instability developing in a magnetron-injector gun. <i>Technical Physics</i> , 2000 , 45, 470-475	0.5	3
32	High-efficiency CARM. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 1996 , 375, 360-362	1.2	3
31	Project of gyrotron for DNP applications based on NMR magnet 2016 ,		3

30	Evolution of dense spatially modulated electron bunches. <i>Physics of Plasmas</i> , 2018 , 25, 033102	2.1	2
29	Terahertz high-harmonic gyrotrons and gyro-multipliers 2008 ,		2
28	Gyro-TWTs and Gyro-BWOs with helically corrugated waveguides 2007 ,		2
27	Millimeter-Wave Relativistic Electron Devices. <i>Radiophysics and Quantum Electronics</i> , 2003 , 46, 769-781	0.7	2
26	Cooperation of traveling and quasi-cutoff waves in a cyclotron-resonance maser. <i>Technical Physics</i> , 2001 , 46, 1001-1008	0.5	2
25	Experimental study of CRM with simultaneous excitation of traveling and near-cutoff waves (CARM-gyrotron). <i>IEEE Transactions on Plasma Science</i> , 2001 , 29, 609-612	1.3	2
24	High-Harmonic Gyrotrons with Axis-Encircling Electron Beams at IAP RAS. <i>Radiophysics and Quantum Electronics</i> , 2019 , 62, 513-519	0.7	2
23	A Compact THz Source for Enhancing the Sensitivity of Nuclear Magnetic Resonance Spectroscopy with Dynamic Nuclear Polarization. <i>Bulletin of the Russian Academy of Sciences: Physics</i> , 2018 , 82, 1592-1595	0.4	2
22	Efficiency of terahertz undulator radiation from short electron bunches moving in the field of permanently magnetized helices. <i>Physics of Plasmas</i> , 2021 , 28, 093301	2.1	2
21	Terahertz large-orbit high-harmonic gyrotrons at IAP RAS: Recent experiments and new designs 2017 ,		1
20	Efficient excitation of high axial modes in simulations of low-voltage gyrotron 2017 ,		1
19	High-harmonic large orbit gyrotrons in IAP RAS 2015 ,		1
18	Progress in studying a self-excited gyromultiplier 2009 ,		1
17	Large-Orbit Gyrotron operation in terahertz frequency range 2009 ,		1
16	A 1-THz third-harmonic large-orbit gyrotron 2009 ,		1
15	2009 ,		1
14	Spectrum of synchrotron radiation from an extended source. <i>Technical Physics</i> , 1997 , 42, 449-451	0.5	1
13	RF Space-Charge Effects in CRM with Arbitrary Phase Velocity of the Operating Wave. <i>Journal of Infrared, Millimeter and Terahertz Waves</i> , 1998 , 19, 939-956		1

12	Imaging the Output Field Pattern of Short Millimeter Wave Sources Using Visible Continuum Emitted by the Cs-Xe DC Discharge 2006 ,		1
11	Gyrodevices with Axis-Encircling Electron Beams. <i>AIP Conference Proceedings</i> , 2003 ,	0	1
10	MICROWAVE DEVICES WITH HELICALLY CORRUGATED WAVEGUIDES. <i>NATO Science Series Series II, Mathematics, Physics and Chemistry</i> , 2005 , 105-114		1
9	A follow-up of the FOM fusion FEM for 1 MW, 1 s. <i>Fusion Engineering and Design</i> , 2001 , 53, 577-586	1.7	1
8	Spurious excitation of near-cutoff modes in free-electron masers. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2000 , 445, 1-6	1.2	1
7	To the Problem of Single-Mode Operation in Smith-Purcell FEM. <i>Journal of Infrared, Millimeter and Terahertz Waves</i> , 1999 , 20, 991-1007		1
6	Injection of a short electron bunch into THz radiation section with an undulator and strong guiding magnetic fields. <i>Physics of Plasmas</i> , 2021 , 28, 013101	2.1	1
5	Terahertz Undulator Radiation of Stabilized Dense Electron Beams. <i>Bulletin of the Russian Academy of Sciences: Physics</i> , 2018 , 82, 1587-1591	0.4	0
4	A method of forming a high-quality electron beam for free electron masers. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 1996 , 375, 393-395	1.2	
3	Efficiency enhancement of THz radiation from an electron bunch in a waveguide due to low-frequency stabilization. <i>Journal of Physics: Conference Series</i> , 2020 , 1697, 012058	0.3	
2	Terahertz Gyrotrons at High Cyclotron Harmonics with Irregular Electrodynamical Systems. <i>Bulletin of the Russian Academy of Sciences: Physics</i> , 2018 , 82, 1582-1586	0.4	
1	Possibility of Effective High-Frequency Generation in Low-Voltage Gyrotrons at the Second Cyclotron Harmonic. <i>Radiophysics and Quantum Electronics</i> , 2018 , 61, 204-215	0.7	