

Vladimir Bratman

List of Publications by Year in descending order

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142
papers

3,574
citations

159358

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143772

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g-index

144
all docs

144
docs citations

144
times ranked

707
citing authors

#	ARTICLE	IF	CITATIONS
1	Relativistic gyrotrons and cyclotron autoresonance masers. International Journal of Electronics, 1981, 51, 541-567.	0.9	286
2	Large-Orbit Gyrotron Operation in the Terahertz Frequency Range. Physical Review Letters, 2009, 102, 245101.	2.9	257
3	High-Gain Wide-Band Gyrotron Traveling Wave Amplifier with a Helically Corrugated Waveguide. Physical Review Letters, 2000, 84, 2746-2749.	2.9	225
4	Gyrotron Traveling Wave Amplifier with a Helical Interaction Waveguide. Physical Review Letters, 1998, 81, 5680-5683.	2.9	217
5	Gyro-TWT with a helical operating waveguide: new possibilities to enhance efficiency and frequency bandwidth. IEEE Transactions on Plasma Science, 1998, 26, 508-518.	0.6	199
6	Theory of gyrotrons with a nonfixed structure of the high-frequency field. Radiophysics and Quantum Electronics, 1973, 16, 474-480.	0.1	131
7	Review of Subterahertz and Terahertz Gyrodevices at IAP RAS and FIR FU. IEEE Transactions on Plasma Science, 2009, 37, 36-43.	0.6	120
8	Gyro-BWO Experiments Using a Helical Interaction Waveguide. IEEE Transactions on Electron Devices, 2005, 52, 839-844.	1.6	90
9	Moderately relativistic high-harmonic gyrotrons for millimeter/submillimeter wavelength band. IEEE Transactions on Plasma Science, 1999, 27, 456-461.	0.6	88
10	Theory and simulations of a gyrotron backward wave oscillator using a helical interaction waveguide. Applied Physics Letters, 2006, 89, 091504.	1.5	84
11	Dispersion of helically corrugated waveguides: Analytical, numerical, and experimental study. Physical Review E, 2004, 70, 046402.	0.8	78
12	Compression of Frequency-Modulated Pulses using Helically Corrugated Waveguides and Its Potential for Generating Multigigawatt rf Radiation. Physical Review Letters, 2004, 92, 118301.	2.9	76
13	Terahertz Large-Orbit High-Harmonic Gyrotrons at IAP RAS: Recent Experiments and New Designs. IEEE Transactions on Electron Devices, 2018, 65, 2287-2293.	1.6	74
14	Millimeter-Wave HF Relativistic Electron Oscillators. IEEE Transactions on Plasma Science, 1987, 15, 2-15.	0.6	68
15	Terahertz Orotrons and Oromultipliers. IEEE Transactions on Plasma Science, 2010, 38, 1466-1471.	0.6	60
16	Pulsed Orotron – A new microwave source for submillimeter pulse high-field electron paramagnetic resonance spectroscopy. Review of Scientific Instruments, 2004, 75, 2926-2936.	0.6	58
17	High-efficiency wideband gyro-TWTs and gyro-BWOs with helically corrugated waveguides. Radiophysics and Quantum Electronics, 2007, 50, 95-107.	0.1	58
18	Terahertz Gyrotrons at IAP RAS: Status and New Designs. Journal of Infrared, Millimeter, and Terahertz Waves, 2011, 32, 371-379.	1.2	56

#	ARTICLE	IF	CITATIONS
19	Mastering the terahertz domain: sources and applications. Physics-Usppekhi, 2011, 54, 837-844.	0.8	55
20	Experimental Demonstration of High-Efficiency Cyclotron-Autoresonance-Maser Operation. Physical Review Letters, 1995, 75, 3102-3105.	2.9	54
21	Negative-mass mitigation of Coulomb repulsion for terahertz undulator radiation of electron bunches. Applied Physics Letters, 2015, 107, .	1.5	47
22	Frequency-Tunable CW Gyro-BWO With a Helically Rippled Operating Waveguide. IEEE Transactions on Plasma Science, 2004, 32, 884-889.	0.6	46
23	Microwave pulse compression using a helically corrugated waveguide. IEEE Transactions on Plasma Science, 2005, 33, 661-667.	0.6	41
24	Gyrotron Development for High Power THz Technologies at IAP RAS. Journal of Infrared, Millimeter, and Terahertz Waves, 2012, 33, 715-723.	1.2	41
25	Experimental study of a fourth-harmonic gyromultiplier. Physics of Plasmas, 2009, 16, .	0.7	40
26	Generation of 3 GW microwave pulses in X-band from a combination of a relativistic backward-wave oscillator and a helical-waveguide compressor. Physics of Plasmas, 2010, 17, .	0.7	39
27	Plasma creation by terahertz electromagnetic radiation. Physics of Plasmas, 2011, 18, .	0.7	37
28	Experimental demonstration of Smithâ€™Purcell radiation enhancement by frequency multiplication in open cavity. Applied Physics Letters, 2011, 98, .	1.5	37
29	Submillimeter-wave large-orbit gyrotron. Radiophysics and Quantum Electronics, 2005, 48, 731-736.	0.1	34
30	Possibilities for Continuous Frequency Tuning in Terahertz Gyrotrons with Nontunable Electrodynamic Systems. Radiophysics and Quantum Electronics, 2016, 58, 660-672.	0.1	32
31	High-power electrostatic free-electron maser as a future source for fusion plasma heating: Experiments in the short-pulse regime. Physical Review E, 1999, 59, 6058-6063.	0.8	31
32	Experimental Study of Microwave Pulse Compression Using a Five-Fold Helically Corrugated Waveguide. IEEE Transactions on Microwave Theory and Techniques, 2015, 63, 1090-1096.	2.9	31
33	Powerful millimeter-wave generators based on the stimulated Cerenkov radiation of relativistic electron beams. Journal of Infrared, Millimeter and Terahertz Waves, 1984, 5, 1311-1332.	0.6	30
34	â€™Phase mixingâ€™ of bunches and decrease of negativeâ€™mass instability increments in cyclotron resonance masers. Physics of Plasmas, 1995, 2, 557-564.	0.7	28
35	Cyclotron autoresonance masersâ€™ recent experiments and prospects. International Journal of Electronics, 1992, 72, 969-981.	0.9	27
36	Effective coupling of cyclotron autoresonance maser and â€™gyrotronâ€™ modes on a phase-synchronized electron beam. Physical Review E, 2000, 62, 4207-4215.	0.8	25

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37	Development of a Magnetic Cusp Gun for Terahertz Harmonic Gyrodevices. IEEE Transactions on Electron Devices, 2012, 59, 3635-3640.	1.6	25
38	Numerical Study of a Low-Voltage Gyrotron (â€œGyotrinoâ€) for DNP/NMR Spectroscopy. IEEE Transactions on Plasma Science, 2017, 45, 644-648.	0.6	23
39	To the problem of energy recuperation in gyrotrons. Journal of Infrared, Millimeter and Terahertz Waves, 1995, 16, 459-471.	0.6	22
40	Operation of a sub-terahertz CW gyrotron with an extremely low voltage. Physics of Plasmas, 2017, 24, .	0.7	22
41	Sources of Coherent Terahertz Radiation. AIP Conference Proceedings, 2006, , .	0.3	21
42	Excitation of orotron oscillations at the doubled frequency of a surface wave. Radiophysics and Quantum Electronics, 2007, 50, 780-785.	0.1	21
43	First microwave generation in the FOM free-electron maser. Plasma Physics and Controlled Fusion, 1998, 40, A139-A156.	0.9	20
44	Radiation and radiative damping of a charged plane, oscillating with a relativistic velocity. Physics Letters, Section A: General, Atomic and Solid State Physics, 1995, 206, 377-382.	0.9	19
45	Theory of gyro devices with thin electron beams (large-orbit gyrotrons). Technical Physics, 1998, 43, 1219-1225.	0.2	19
46	Features of plasma glow in low pressure terahertz gas discharge. Physics of Plasmas, 2013, 20, .	0.7	19
47	THz Gyrotron and BWO Designed for Operation in DNP-NMR Spectrometer Magnet. Journal of Infrared, Millimeter, and Terahertz Waves, 2013, 34, 837-846.	1.2	19
48	Broadband Orotron Operation at Millimeter and Submillimeter Waves. Journal of Infrared, Millimeter and Terahertz Waves, 2002, 23, 1595-1601.	0.6	16
49	Smooth Wideband Frequency Tuning in Low-Voltage Gyrotron With Cathode-End Power Output. IEEE Transactions on Electron Devices, 2017, 64, 5147-5150.	1.6	16
50	Conditions for self-excitation of a cyclotron resonance maser with a nonresonant electrodynamic system. Radiophysics and Quantum Electronics, 1975, 18, 772-779.	0.1	15
51	Smithâ€™Purcell frequency multiplier with synchronization of radiation from a wide electron beam. Applied Physics Letters, 2009, 94, .	1.5	14
52	Temporal Dynamics of Mode Interaction in Submillimeter-Wave Second-Harmonic Gyrotron. Journal of Infrared, Millimeter and Terahertz Waves, 2001, 22, 1409-1420.	0.6	13
53	Pulsed wideband orotrons of millimeter and submillimeter waves. Radiophysics and Quantum Electronics, 2006, 49, 866-871.	0.1	13
54	Experimental results on microwave pulse compression using helically corrugated waveguide. Journal of Applied Physics, 2010, 108, 054908.	1.1	13

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55	Recovery of electron energy in cyclotron autoresonance masers. <i>Physics of Plasmas</i> , 1997, 4, 2285-2291.	0.7	12
56	Effective Co-Generation of Opposite and Forward Waves in Cyclotron-Resonance Masers. <i>Physical Review Letters</i> , 2000, 85, 3424-3427.	2.9	12
57	Large-orbit Subterahertz and Terahertz gyrotrons. <i>Radiophysics and Quantum Electronics</i> , 2009, 52, 472-481.	0.1	12
58	Peculiarities of the coherent spontaneous synchrotron radiation of dense electron bunches. <i>Physics of Plasmas</i> , 2014, 21, .	0.7	12
59	Design and Numerical Analysis of W-band Oscillators With Hollow Electron Beam. <i>IEEE Transactions on Electron Devices</i> , 2014, 61, 1795-1799.	1.6	12
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.	0.6	11
61	Frequency multiplication in gyrotron autooscillators. <i>Technical Physics Letters</i> , 2006, 32, 84-87.	0.2	11
62	Numerical simulations of a co-harmonic gyrotron. <i>Journal Physics D: Applied Physics</i> , 2012, 45, 065105.	1.3	11
63	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.	0.6	10
64	Microwave source of multigigawatt peak power based on a relativistic backward-wave oscillator and a compressor. <i>Technical Physics</i> , 2011, 56, 269-273.	0.2	10
65	High-frequency devices with weakly relativistic hollow thin-wall electron beams. <i>Physics of Plasmas</i> , 2012, 19, 020704.	0.7	10
66	Frequency Tuning in a Subterahertz Gyrotron With a Variable Cavity. <i>IEEE Transactions on Electron Devices</i> , 2014, 61, 3529-3533.	1.6	10
67	Effects of Spatial Reproduction and Multiplication for Electron Waves in Semiconductor Nanostructures. <i>Physica Status Solidi (B): Basic Research</i> , 2000, 221, 459-462.	0.7	9
68	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.	0.1	9
69	Electron-optical system of terahertz gyrotron. <i>Journal of Communications Technology and Electronics</i> , 2011, 56, 500-507.	0.2	9
70	Undulator radiation of premodulated and nonmodulated electron bunches in the negative mass instability regime. <i>Physical Review Accelerators and Beams</i> , 2018, 21, .	0.6	9
71	Cyclotron autoresonance maser with high Doppler frequency up-conversion. <i>Journal of Infrared, Millimeter and Terahertz Waves</i> , 1992, 13, 1857-1873.	0.6	8
72	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.	2.9	8

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73	Electron-Optical System for a Large-Orbit Gyrotron. Technical Physics, 2005, 50, 1611.	0.2	8
74	New Versions of Terahertz Radiation Sources for Dynamic Nuclear Polarization in Nuclear Magnetic Resonance Spectroscopy. Radiophysics and Quantum Electronics, 2014, 56, 532-541.	0.1	8
75	Design of a Powerful and Compact THZ Oscillator. Journal of Infrared, Millimeter and Terahertz Waves, 2007, 27, 1063-1071.	0.6	7
76	Capabilities of Terahertz Cyclotron and Undulator Radiation from Short Ultrarelativistic Electron Bunches. Instruments, 2019, 3, 55.	0.8	7
77	Simultaneous high-frequency Super-Radiance and low-frequency Coherent Spontaneous Radiation from ultrarelativistic electrons in a waveguide. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2020, 976, 164268.	0.7	7
78	Electron-Optical System of the Gyrotron Designed for Operation in the DNP-NMR Spectrometer Cryomagnet (Gyrotrino). Journal of Infrared, Millimeter, and Terahertz Waves, 2017, 38, 929-937.	1.2	7
79	A Long Cavity With Reduced Diffraction Q for Subterahertz and Terahertz Gyrotrons. IEEE Transactions on Plasma Science, 2015, 43, 2598-2606.	0.6	6
80	Injection of a short electron bunch into THz radiation section with an undulator and strong guiding magnetic fields. Physics of Plasmas, 2021, 28, .	0.7	6
81	The starting regime for an MCR-monotron with a cavity having a low diffraction Q. Radiophysics and Quantum Electronics, 1974, 17, 1181-1187.	0.1	5
82	Title is missing!. Physics-Uspexhi, 2007, 50, 303.	0.8	5
83	Voltage-tuned relativistic backward wave oscillator. Technical Physics Letters, 2010, 36, 140-143.	0.2	5
84	A gyrodevice based on simultaneous excitation of opposite and forward waves (Gyrotron BWO-TWT). IEEE Transactions on Plasma Science, 2000, 28, 1742-1746.	0.6	4
85	A high power, tunable free electron maser for fusion. Fusion Engineering and Design, 2001, 53, 423-430.	1.0	4
86	Mode dynamics in a free electron maser with broadband frequency-dispersive feedback. Physics of Plasmas, 2001, 8, 638-642.	0.7	4
87	RF Pulse Compression Using Helically Corrugated Waveguides. AIP Conference Proceedings, 2006, , .	0.3	4
88	Gyro-TWTs and Gyro-BWOs with helically corrugated waveguides. , 2007, , .		4
89	High-Harmonic Gyrotrons with Axis-Encircling Electron Beams at IAP RAS. Radiophysics and Quantum Electronics, 2019, 62, 513-519.	0.1	4
90	Efficiency of terahertz undulator radiation from short electron bunches moving in the field of permanently magnetized helices. Physics of Plasmas, 2021, 28, .	0.7	4

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91	High-efficiency CARM. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1996, 375, 360-362.	0.7	3
92	The spread of the initial energy of electrons in a gyrotron due to the negative-mass instability developing in a magnetron-injector gun. Technical Physics, 2000, 45, 470-475.	0.2	3
93	Experimental study of CRM with simultaneous excitation of traveling and near-cutoff waves (CARM-gyrotron). IEEE Transactions on Plasma Science, 2001, 29, 609-612.	0.6	3
94	Self-exciting single-cavity gyromultiplier. , 2008, , .		3
95	Terahertz high-harmonic gyrotrons and gyro-multipliers. , 2008, , .		3
96	Undulator Radiation of Dense Plane Electron Bunches. IEEE Transactions on Plasma Science, 2015, 43, 532-538.	0.6	3
97	Project of gyrotron for DNP applications based on NMR magnet. , 2016, , .		3
98	A Compact THz Source for Enhancing the Sensitivity of Nuclear Magnetic Resonance Spectroscopy with Dynamic Nuclear Polarization. Bulletin of the Russian Academy of Sciences: Physics, 2018, 82, 1592-1595.	0.1	3
99	Spectrum of synchrotron radiation from an extended source. Technical Physics, 1997, 42, 449-451.	0.2	2
100	Cooperation of traveling and quasi-cutoff waves in a cyclotron-resonance maser. Technical Physics, 2001, 46, 1001-1008.	0.2	2
101	Millimeter-Wave Relativistic Electron Devices. Radiophysics and Quantum Electronics, 2003, 46, 769-781.	0.1	2
102	Imaging the Output Field Pattern of Short Millimeter Wave Sources Using Visible Continuum Emitted by the Cs-Xe DC Discharge. , 2006, , .		2
103	Large-Orbit Gyrotron operation in terahertz frequency range. , 2009, , .		2
104	A 1-THz third-harmonic large-orbit gyrotron. , 2009, , .		2
105	Recent progress on a co-harmonic gyrotron. , 2011, , .		2
106	Efficient excitation of high axial modes in simulations of low-voltage gyrotron. , 2017, , .		2
107	Evolution of dense spatially modulated electron bunches. Physics of Plasmas, 2018, 25, 033102.	0.7	2
108	RF Space-Charge Effects in CRM with Arbitrary Phase Velocity of the Operating Wave. Journal of Infrared, Millimeter and Terahertz Waves, 1998, 19, 939-956.	0.6	1

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109	To the Problem of Single-Mode Operation in Smith-Purcell FEM. Journal of Infrared, Millimeter and Terahertz Waves, 1999, 20, 991-1007.	0.6	1
110	Spurious excitation of near-cutoff modes in free-electron masers. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2000, 445, 1-6.	0.7	1
111	A follow-up of the FOM fusion FEM for 1 MW, 1 s. Fusion Engineering and Design, 2001, 53, 577-586.	1.0	1
112	Gyrodevices with Axis-Encircling Electron Beams. AIP Conference Proceedings, 2003, , .	0.3	1
113	Progress in studying a self-excited gyromultiplier. , 2009, , .		1
114	Waveguide system for high-power microwave pulse compression. , 2009, , .		1
115	5-fold helically corrugated waveguide dispersion measurements. , 2010, , .		1
116	Numerical investigation of gyro-multiplier schemes. , 2012, , .		1
117	High-frequency devices with weakly relativistic hollow thin-wall electron beams. , 2012, , .		1
118	Low pressure gas discharge in the quasioptical beams of the powerful terahertz radiation. , 2013, , .		1
119	High-harmonic large orbit gyrotrons in IAP RAS. , 2015, , .		1
120	Capabilities of coherent spontaneous terahertz undulator radiation from short electron bunches. , 2016, , .		1
121	Terahertz large-orbit high-harmonic gyrotrons at IAP RAS: Recent experiments and new designs. , 2017, , .		1
122	THz undulator radiation of dense electron bunches stabilized in the negative mass regime. , 2017, , .		1
123	Terahertz Undulator Radiation of Stabilized Dense Electron Beams. Bulletin of the Russian Academy of Sciences: Physics, 2018, 82, 1587-1591.	0.1	1
124	Developments of terahertz large-orbit high-harmonic gyrotrons at IAP RAS. , 2019, , .		1
125	A method of forming a high-quality electron beam for free electron masers. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1996, 375, 393-395.	0.7	0
126	10-MW, W-band RF source for advanced accelerator research. AIP Conference Proceedings, 2001, , .	0.3	0

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127	High Power RF Generation by Compression of Frequency Modulated Pulses. AIP Conference Proceedings, 2003, , .	0.3	0
128	High-harmonic sectioned-cavity THz gyrotrons. , 2010, , .		0
129	Orotron operation at the second harmonic of the surface wave frequency. , 2010, , .		0
130	X-band pulse compression using a five-fold helically corrugated waveguide. , 2012, , .		0
131	High-harmonic terahertz gyrotrons with sectioned cavities. , 2012, , .		0
132	Numerical simulation of a 1.37 THz gyro-multiplier. , 2013, , .		0
133	Low pressure gas discharge in the quasioptical beams of the powerful terahertz radiation. , 2013, , .		0
134	Design and experiments of a five-fold helically corrugated waveguide for microwave pulse compression. , 2015, , .		0
135	THz photo-injector FEM with the negative-mass bunch stabilization. , 2015, , .		0
136	Periodic GW level microwave pulses in X-band from a combination of a relativistic backward wave oscillator and a helical waveguide compressor. , 2017, , .		0
137	Terahertz Gyrotrons at High Cyclotron Harmonics with Irregular Electrodynamical Systems. Bulletin of the Russian Academy of Sciences: Physics, 2018, 82, 1582-1586.	0.1	0
138	Possibility of Effective High-Frequency Generation in Low-Voltage Gyrotrons at the Second Cyclotron Harmonic. Radiophysics and Quantum Electronics, 2018, 61, 204-215.	0.1	0
139	Broadband Terahertz Undulator Radiation from Short Electron Bunches into the Dominant Mode of an Oversized Waveguide. , 2021, , .		0
140	Injection of Dense Electron Bunches into Undulator Radiation Sources Based on the Negative Mass Regime. , 2021, , .		0
141	Undulators in the form of Permanently Magnetized Helices. , 2021, , .		0
142	Efficiency enhancement of THz radiation from an electron bunch in a waveguide due to low-frequency stabilization. Journal of Physics: Conference Series, 2020, 1697, 012058.	0.3	0