

# Maxim A Goryachev

## List of Publications by Year in descending order

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101  
papers

2,393  
citations

236925

25  
h-index

214800

47  
g-index

106  
all docs

106  
docs citations

106  
times ranked

1633  
citing authors

#	ARTICLE	IF	CITATIONS
1	Precision Multi-Mode Dielectric Characterization of a Crystalline Perovskite Enables Determination of the Temperature-Dependent Phase Transitions. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2022, 69, 423-429.	3.0	1
2	Poynting vector controversy in axion modified electrodynamics. Physical Review D, 2022, 105, .	4.7	16
3	Generation of bimodal solitons in a sapphire whispering-gallery-mode maser at millikelvin temperatures. Physical Review A, 2022, 105, .	2.5	2
4	Characterization of Cryogenic Material Properties of 3-D-Printed Superconducting Niobium Using a 3-D Lumped Element Microwave Cavity. IEEE Transactions on Instrumentation and Measurement, 2021, 70, 1-7.	4.7	3
5	Resonances in large ferrimagnetic YIG samples – Electrodynamic analysis. Journal of Magnetism and Magnetic Materials, 2021, 521, 167536.	2.3	4
6	Electrodynamics of Free- and Bound-Charge Electricity Generators Using Impressed Sources. Physical Review Applied, 2021, 15, .	3.8	9
7	Searching for Scalar Dark Matter via Coupling to Fundamental Constants with Photonic, Atomic, and Mechanical Oscillators. Physical Review Letters, 2021, 126, 071301.	7.8	26
8	Upconversion Loop Oscillator Axion Detection Experiment: A Precision Frequency Interferometric Axion Dark Matter Search with a Cylindrical Microwave Cavity. Physical Review Letters, 2021, 126, 081803.	7.8	19
9	Gravitational wave detectors with broadband high frequency sensitivity. Communications Physics, 2021, 4, .	5.3	26
10	Rare Events Detected with a Bulk Acoustic Wave High Frequency Gravitational Wave Antenna. Physical Review Letters, 2021, 127, 071102.	7.8	20
11	Precision Frequency Techniques to Search for Dark Matter and New Physics with Photonic, Phononic and Atomic Oscillators. , 2021, , .		0
12	Challenges and opportunities of gravitational-wave searches at MHz to GHz frequencies. Living Reviews in Relativity, 2021, 24, 1.	26.7	105
13	Casimir spring and dilution in macroscopic cavity optomechanics. Nature Physics, 2020, 16, 1117-1122.	16.7	13
14	Generation of coherent phonons via a cavity enhanced photonic lambda scheme. Applied Physics Letters, 2020, 117, .	3.3	2
15	Determination of niobium cavity magnetic field screening via a dispersively hybridized magnonic sensor. Applied Physics Letters, 2020, 117, .	3.3	3
16	Broadband electrical action sensing techniques with conducting wires for low-mass dark matter axion detection. Physics of the Dark Universe, 2020, 30, 100624.	4.9	16
17	Generation of ultralow power phononic combs. Physical Review Research, 2020, 2, .	3.6	13
18	Precision Tests of Lorentz Invariance and Fundamental Physics with Acoustic Phonons. , 2020, , .		0

#	ARTICLE	IF	CITATIONS
19	Modified axion electrodynamics as impressed electromagnetic sources through oscillating background polarization and magnetization. <i>Physics of the Dark Universe</i> , 2019, 26, 100339.	4.9	35
20	Experimental implementations of cavity-magnon systems: from ultra strong coupling to applications in precision measurement. <i>New Journal of Physics</i> , 2019, 21, 095004.	2.9	54
21	Bulk Acoustic Wave Resonator-Oscillators and Tests of Fundamental Physics. , 2019, , .		0
22	Axion detection with precision frequency metrology. <i>Physics of the Dark Universe</i> , 2019, 26, 100345.	4.9	26
23	Testing the generalized uncertainty principle with macroscopic mechanical oscillators and pendulums. <i>Physical Review D</i> , 2019, 100, .	4.7	70
24	Electrodynamic improvements to the theory of magnetostatic modes in ferrimagnetic spheres and their applications to saturation magnetization measurements. <i>Journal of Magnetism and Magnetic Materials</i> , 2019, 487, 165331.	2.3	12
25	Experimental implementation of a large scale multipost re-entrant array. <i>Applied Physics Express</i> , 2019, 12, 054002.	2.4	0
26	Low-Temperature Properties of Whispering-Gallery Modes in Isotopically Pure Silicon-28. <i>Physical Review Applied</i> , 2019, 11, .	3.8	2
27	Broadening frequency range of a ferromagnetic axion haloscope with strongly coupled cavityâ€“magnon polaritons. <i>Physics of the Dark Universe</i> , 2019, 25, 100306.	4.9	51
28	Probing dark universe with exceptional points. <i>Physics of the Dark Universe</i> , 2019, 23, 100244.	4.9	9
29	Piezo-optomechanical coupling of a 3D microwave resonator to a bulk acoustic wave crystalline resonator. <i>Applied Physics Letters</i> , 2019, 115, .	3.3	9
30	Observation of low-temperature magnetomechanic effects in crystalline resonant phonon cavities. <i>Physical Review B</i> , 2019, 100, .	3.2	2
31	Precision Frequency Metrology for Axion Searches. , 2019, , .		1
32	Cavity magnon polaritons with lithium ferrite and three-dimensional microwave resonators at millikelvin temperatures. <i>Physical Review B</i> , 2018, 97, .	3.2	28
33	Next Generation of Phonon Tests of Lorentz Invariance Using Quartz BAW Resonators. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2018, 65, 991-1000.	3.0	18
34	Axion detection with negatively coupled cavity arrays. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2018, 382, 2199-2204.	2.1	26
35	Isotopically Pure Silicon-28 Whispering Gallery Mode Resonators: A Host for Narrow Linewidth Spin Ensembles. , 2018, , .		0
36	Inducing Strong Non-Linearities in a Phonon Trapping Quartz Bulk Acoustic Wave Resonator Coupled to a Superconducting Quantum Interference Device. <i>Applied Sciences (Switzerland)</i> , 2018, 8, 602.	2.5	1

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37	Achieving long phonon lifetimes. <i>Nature Materials</i> , 2017, 16, 285-286.	27.5	0
38	Determination of Low Loss in Isotopically Pure Single Crystal $^{28}\text{Si}$ at Low Temperatures and Single Microwave Photon Energy. <i>Scientific Reports</i> , 2017, 7, 44813.	3.3	7
39	The ORGAN experiment: An axion haloscope above 15 GHz. <i>Physics of the Dark Universe</i> , 2017, 18, 67-72.	4.9	217
40	Electromagnetic properties of terbium gallium garnet at millikelvin temperatures and low photon energy. <i>Applied Physics Letters</i> , 2017, 111, 052402.	3.3	1
41	Low-temperature microwave properties of biaxial $\text{YAlO}_3$ . <i>Physical Review B</i> , 2017, 96, .	3.2	4
42	Experiments match simulations in a multiple post reentrant cavity. <i>Review of Scientific Instruments</i> , 2017, 88, 125104.	1.3	1
43	Improving phonon sector tests of Lorentz Invariance. , 2017, , .		0
44	First search for axions of mass $110 \hat{=} 4\text{eV}$ using milliKelvin cooled 26.6 GHz microwave resonator. , 2017, , .		0
45	Indirect methods to control population distribution in a large spin system. <i>New Journal of Physics</i> , 2017, 19, 033016.	2.9	1
46	Towards Cryogenic Quartz Oscillators: Coupling of a Bulk Acoustic Wave quartz resonator to a SQUID. , 2016, , .		1
47	A 3D printed superconducting aluminium microwave cavity. <i>Applied Physics Letters</i> , 2016, 109, .	3.3	27
48	Reconfigurable Microwave Photonic Topological Insulator. <i>Physical Review Applied</i> , 2016, 6, .	3.8	30
49	Superstrong coupling of a microwave cavity to yttrium iron garnet magnons. <i>Applied Physics Letters</i> , 2016, 108, .	3.3	120
50	A new method of probing mechanical losses of coatings at cryogenic temperatures. <i>Review of Scientific Instruments</i> , 2016, 87, 123906.	1.3	5
51	Ultrahigh cooperativity interactions between magnons and resonant photons in a YIG sphere. <i>Physical Review B</i> , 2016, 93, .	3.2	161
52	Quartz-superconductor quantum electromechanical system. <i>Physical Review B</i> , 2016, 93, .	3.2	9
53	Acoustic Tests of Lorentz Symmetry Using Quartz Oscillators. <i>Physical Review X</i> , 2016, 6, .	8.9	29
54	Impact of coatings on the quality factor of a quartz crystal resonator at liquid helium temperature. , 2016, , .		1

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55	Behavior of quartz crystal resonators at liquid helium temperature. , 2016, , .		0
56	Quality Factor Measurements of Various Types of Quartz Crystal Resonators Operating Near 4ÅK. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2016, 63, 975-980.	3.0	12
57	Collective behavior ofCr3+ions in ruby revealed by whispering gallery modes. Physical Review A, 2015, 92, .	2.5	3
58	Strong coupling between<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>P</mml:mi><mml:mn>1</mml:mn></mml:mrow></mml:math> impurity centers and a three-dimensional lumped photonic microwave cavity. Physical Review B, 2015, 91, .	3.2	24
59	Single-photon level study of microwave properties of lithium niobate at millikelvin temperatures. Physical Review B, 2015, 92, .	3.2	18
60	Evidence of dilute ferromagnetism in rare-earth doped yttrium aluminium garnet. Applied Physics Letters, 2015, 107, .	3.3	12
61	Quality factors of quartz crystal resonators operating at 4 Kelvins. , 2015, , .		0
62	Creating tuneable microwave media from a two-dimensional lattice of re-entrant posts. Journal of Applied Physics, 2015, 118, .	2.5	8
63	The 3D split-ring cavity lattice: a new metastructure for engineering arrays of coupled microwave harmonic oscillators. New Journal of Physics, 2015, 17, 023003.	2.9	15
64	Discovery of iron group impurity ion spin states in single crystal Y2SiO5 with strong coupling to whispering gallery photons. Applied Physics Letters, 2015, 106, .	3.3	11
65	Measurements of elastic properties of langatate at liquid helium temperatures for design of ultra low loss mechanical systems. Applied Physics Letters, 2014, 104, 261904.	3.3	2
66	Effects of geometry on quantum fluctuations of phonon-trapping acoustic cavities. New Journal of Physics, 2014, 16, 083007.	2.9	13
67	Extremely high Q-factor mechanical modes in quartz bulk acoustic wave resonators at millikelvin temperature. , 2014, , .		2
68	High-Cooperativity Cavity QED with Magnons at Microwave Frequencies. Physical Review Applied, 2014, 2, .	3.8	407
69	Three-dimensional cavity quantum electrodynamics with a rare-earth spin ensemble. Physical Review B, 2014, 90, .	3.2	42
70	Gravitational wave detection with high frequency phonon trapping acoustic cavities. Physical Review D, 2014, 90, .	4.7	67
71	Strong coupling between whispering gallery modes and chromium ions in ruby. Physical Review B, 2014, 90, .	3.2	18
72	Observation of the fundamental Nyquist noise limit in an ultra-high <i>Q</i>-factor cryogenic bulk acoustic wave cavity. Applied Physics Letters, 2014, 105, .	3.3	18

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73	Hyperparametric effects in a whispering-gallery mode rutile dielectric resonator at liquid helium temperatures. Journal of Applied Physics, 2014, 116, 134105.	2.5	5
74	Spin-photon interaction in a cavity with time-reversal symmetry breaking. Physical Review B, 2014, 89, .	3.2	25
75	Controlling a whispering-gallery-doublet-mode avoided frequency crossing: Strong coupling between photon bosonic and spin degrees of freedom. Physical Review A, 2014, 89, .	2.5	12
76	Metal Bulk Foil Resistor Characterization for BAW Application at Low Cryogenic Temperatures. IEEE Transactions on Instrumentation and Measurement, 2014, 63, 628-632.	4.7	4
77	Jump chaotic behaviour of ultra low loss bulk acoustic wave cavities. Applied Physics Letters, 2014, 105, .	3.3	3
78	Bulk acoustic wave resonator thermal noise measurements. , 2014, , .		0
79	Ultra-sensitive Whispering Gallery Mode spectroscopy of low loss crystals at cryogenic temperatures. , 2014, , .		0
80	Properties related to Q-factors and noise of quartz resonator-based systems at 4K. , 2014, , .		3
81	Advances in development of quartz crystal oscillators at liquid helium temperatures. Cryogenics, 2013, 57, 104-112.	1.7	17
82	Quartz resonators at cryogenic temperatures: Noise and quality factor. , 2013, , .		2
83	Ultrasensitive microwave spectroscopy of paramagnetic impurities in sapphire crystals at millikelvin temperatures. Physical Review B, 2013, 88, .	3.2	47
84	Giant $Q$ -factors of natural impurities in synthetic quartz. Applied Physics Letters, 2013, 103, .	3.3	17
85	Anomalously strong nonlinearity of unswept quartz acoustic cavities at liquid helium temperatures. Journal of Applied Physics, 2013, 114, 094506.	2.5	8
86	Electron spin resonance spectroscopy of high purity crystals at millikelvin temperatures. Proceedings of SPIE, 2013, , .	0.8	0
87	Observation of Rayleigh Phonon Scattering through Excitation of Extremely High Overtones in Low-Loss Cryogenic Acoustic Cavities for Hybrid Quantum Systems. Physical Review Letters, 2013, 111, 085502.	7.8	49
88	Spin bath maser in a cryogenically cooled sapphire whispering gallery mode resonator. Physical Review B, 2013, 88, .	3.2	10
89	Recent progress and perspectives of extremely low loss acoustic cavities: From frequency sources to artificial atoms. , 2013, , .		0
90	Extremely Low Loss Phonon-Trapping Cryogenic Acoustic Cavities for Future Physical Experiments. Scientific Reports, 2013, 3, 2132.	3.3	87

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91	Extremely low-loss acoustic phonons in a quartz bulk acoustic wave resonator at millikelvin temperature. Applied Physics Letters, 2012, 100, .	3.3	73
92	Measurement of temperature sensitivity of LGT elastic coefficients over [4K, 15K] cryogenic range. , 2012, , .		0
93	Cryogenic quartz frequency sources: Problems and perspectives. , 2012, , .		0
94	Some future applications of cryogenic high-Q resonant cavities. , 2012, , .		0
95	Quartz resonator instabilities under cryogenic conditions. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2012, 59, 21-29.	3.0	20
96	Precision close-to-carrier phase noise simulation of BAW oscillators. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2011, 58, 6-9.	3.0	8
97	Oscillator frequency stability improvement by means of negative feedback. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2011, 58, 2297-2304.	3.0	2
98	Parametric model of the BAW resonator phase-noise. Ultrasonics, 2011, 51, 966-973.	3.9	4
99	Losses in high quality quartz crystal resonators at cryogenic temperatures. Applied Physics Letters, 2011, 98, .	3.3	43
100	Recent investigations on BAW resonators at cryogenic temperatures. , 2011, , .		14
101	Cryogenic transistor measurement and modeling for engineering applications. Cryogenics, 2010, 50, 381-389.	1.7	17