

Ilya Krivorotov

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133
papers

8,015
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h-index

88
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143
ext. papers

8,882
ext. citations

5.6
avg, IF

5.55
L-index

#	Paper	IF	Citations
133	Microwave oscillations of a nanomagnet driven by a spin-polarized current. <i>Nature</i> , 2003 , 425, 380-3	50.4	1611
132	Magnetic vortex oscillator driven by d.c. spin-polarized current. <i>Nature Physics</i> , 2007 , 3, 498-503	16.2	493
131	Interface-Induced Phenomena in Magnetism. <i>Reviews of Modern Physics</i> , 2017 , 89,	40.5	475
130	Time-domain measurements of nanomagnet dynamics driven by spin-transfer torques. <i>Science</i> , 2005 , 307, 228-31	33.3	448
129	Spin-transfer-driven ferromagnetic resonance of individual nanomagnets. <i>Physical Review Letters</i> , 2006 , 96, 227601	7.4	317
128	Spin-transfer effects in nanoscale magnetic tunnel junctions. <i>Applied Physics Letters</i> , 2004 , 85, 1205-1207	3.4	230
127	Voltage-induced ferromagnetic resonance in magnetic tunnel junctions. <i>Physical Review Letters</i> , 2012 , 108, 197203	7.4	199
126	Switching current reduction using perpendicular anisotropy in CoFeB/MgO magnetic tunnel junctions. <i>Applied Physics Letters</i> , 2011 , 98, 112507	3.4	151
125	Nanowire spin torque oscillator driven by spin orbit torques. <i>Nature Communications</i> , 2014 , 5, 5616	17.4	138
124	Ultralow-current-density and bias-field-free spin-transfer nano-oscillator. <i>Scientific Reports</i> , 2013 , 3, 1426	4.9	130
123	Current-induced nanomagnet dynamics for magnetic fields perpendicular to the sample plane. <i>Physical Review Letters</i> , 2004 , 93, 036601	7.4	121
122	Nanospintronics Based on Magnetologic Gates. <i>IEEE Transactions on Electron Devices</i> , 2012 , 59, 259-262	2.9	118
121	High-power coherent microwave emission from magnetic tunnel junction nano-oscillators with perpendicular anisotropy. <i>ACS Nano</i> , 2012 , 6, 6115-21	16.7	114
120	Adjustable spin torque in magnetic tunnel junctions with two fixed layers. <i>Applied Physics Letters</i> , 2005 , 86, 152509	3.4	113
119	Temperature dependence of spin-transfer-induced switching of nanomagnets. <i>Physical Review Letters</i> , 2004 , 93, 166603	7.4	113
118	Temperature dependence of the voltage-controlled perpendicular anisotropy in nanoscale MgO CoFeB Ta magnetic tunnel junctions. <i>Applied Physics Letters</i> , 2014 , 104, 112410	3.4	92
117	Mechanisms limiting the coherence time of spontaneous magnetic oscillations driven by dc spin-polarized currents. <i>Physical Review B</i> , 2005 , 72,	3.3	90

116	Large-amplitude coherent spin waves excited by spin-polarized current in nanoscale spin valves. <i>Physical Review B</i> , 2007 , 76,	3.3	89
115	Giant spin-torque diode sensitivity in the absence of bias magnetic field. <i>Nature Communications</i> , 2016 , 7, 11259	17.4	89
114	Low writing energy and sub nanosecond spin torque transfer switching of in-plane magnetic tunnel junction for spin torque transfer random access memory. <i>Journal of Applied Physics</i> , 2011 , 109, 07C720	2.5	87
113	Deep subnanosecond spin torque switching in magnetic tunnel junctions with combined in-plane and perpendicular polarizers. <i>Applied Physics Letters</i> , 2011 , 98, 102509	3.4	76
112	Unidirectional coercivity enhancement in exchange-biased Co/CoO. <i>Applied Physics Letters</i> , 2002 , 81, 1270-1272	3.4	75
111	Spin caloritronic nano-oscillator. <i>Nature Communications</i> , 2017 , 8, 117	17.4	68
110	Reducing the critical current for short-pulse spin-transfer switching of nanomagnets. <i>Applied Physics Letters</i> , 2005 , 87, 112507	3.4	66
109	Oscillatory exchange coupling and positive magnetoresistance in epitaxial oxide heterostructures. <i>Physical Review Letters</i> , 2000 , 85, 3728-31	7.4	66
108	Relation between exchange anisotropy and magnetization reversal asymmetry in Fe/MnF ₂ bilayers. <i>Physical Review B</i> , 2002 , 65,	3.3	65
107	Angular dependence of the superconducting transition temperature in ferromagnet-superconductor-ferromagnet trilayers. <i>Physical Review Letters</i> , 2010 , 105, 207002	7.4	64
106	Origin of the inverse spin switch effect in superconducting spin valves. <i>Physical Review Letters</i> , 2009 , 103, 027004	7.4	63
105	Nonadiabatic stochastic resonance of a nanomagnet excited by spin torque. <i>Physical Review Letters</i> , 2010 , 105, 047202	7.4	62
104	Magnetization reversal in exchange biased Co/CoO probed with anisotropic magnetoresistance. <i>Journal of Applied Physics</i> , 2002 , 91, 7760	2.5	62
103	Spin-orbit torque driven by a planar Hall current. <i>Nature Nanotechnology</i> , 2019 , 14, 27-30	28.7	62
102	Resonant nonlinear damping of quantized spin waves in ferromagnetic nanowires: a spin torque ferromagnetic resonance study. <i>Physical Review Letters</i> , 2009 , 103, 167601	7.4	59
101	Temperature dependence of magnetization reversal and angular torque in Co ₂ O ₃ . <i>Physical Review B</i> , 2006 , 74,	3.3	59
100	Spin-transfer excitations of permalloy nanopillars for large applied currents. <i>Physical Review B</i> , 2005 , 72,	3.3	59
99	Electronic and crystal structure of fully strained LaNiO ₃ films. <i>Physical Review B</i> , 2003 , 68,	3.3	59

98	Strong linewidth variation for spin-torque nano-oscillators as a function of in-plane magnetic field angle. <i>Physical Review B</i> , 2008 , 78,	3-3	58
97	Rapid domain wall motion in permalloy nanowires excited by a spin-polarized current applied perpendicular to the nanowire. <i>Physical Review Letters</i> , 2010 , 104, 097203	7-4	57
96	Experimental Demonstration of xor Operation in Graphene Magnetologic Gates at Room Temperature. <i>Physical Review Applied</i> , 2016 , 5,	4-3	51
95	Angular dependence of superconductivity in superconductor/spin-valve heterostructures. <i>Physical Review B</i> , 2014 , 89,	3-3	49
94	Time-resolved spin-torque switching and enhanced damping in permalloy/Cu/permalloy spin-valve nanopillars. <i>Physical Review Letters</i> , 2006 , 96, 247204	7-4	47
93	Magnetization dynamics in a dual free-layer spin-torque nano-oscillator. <i>Physical Review B</i> , 2012 , 86,	3-3	46
92	Parametric Resonance of Magnetization Excited by Electric Field. <i>Nano Letters</i> , 2017 , 17, 572-577	11-5	45
91	. <i>IEEE Electron Device Letters</i> , 2011 , 32, 57-59	4-4	45
90	Strategies and tolerances of spin transfer torque switching. <i>Journal of Applied Physics</i> , 2010 , 107, 113910.5	10-5	45
89	Experimental test of an analytical theory of spin-torque-oscillator dynamics. <i>Physical Review B</i> , 2009 , 79,	3-3	45
88	Nonreciprocal Surface Acoustic Waves in Multilayers with Magnetoelastic and Interfacial Dzyaloshinskii-Moriya Interactions. <i>Physical Review Applied</i> , 2018 , 9,	4-3	44
87	Time-domain studies of very-large-angle magnetization dynamics excited by spin transfer torques. <i>Physical Review B</i> , 2008 , 77,	3-3	44
86	Effect of resistance-area product on spin-transfer switching in MgO-based magnetic tunnel junction memory cells. <i>Applied Physics Letters</i> , 2011 , 98, 072512	3-4	41
85	Parametric Excitation of Spin Waves by Voltage-Controlled Magnetic Anisotropy. <i>Physical Review Applied</i> , 2014 , 1,	4-3	38
84	Nonlinear ferromagnetic resonance induced by spin torque in nanoscale magnetic tunnel junctions. <i>Applied Physics Letters</i> , 2013 , 103, 082402	3-4	38
83	Sub-200 ps spin transfer torque switching in in-plane magnetic tunnel junctions with interface perpendicular anisotropy. <i>Journal Physics D: Applied Physics</i> , 2012 , 45, 025001	3	38
82	Spin torque ferromagnetic resonance with magnetic field modulation. <i>Applied Physics Letters</i> , 2013 , 103, 172406	3-4	37
81	Origin of complex exchange anisotropy in Fe/MnF ₂ bilayers. <i>Physical Review B</i> , 2003 , 68,	3-3	36

80	Micromagnetic understanding of stochastic resonance driven by spin-transfer-torque. <i>Physical Review B</i> , 2011 , 83,	3-3	35
79	Magnetization reversal driven by spin-polarized current in exchange-biased nanoscale spin valves. <i>Physical Review B</i> , 2007 , 76,	3-3	35
78	Evolution of spin-wave modes in magnetic tunnel junction nanopillars. <i>Physical Review B</i> , 2010 , 82,	3-3	33
77	Structural and magnetic properties of triode-sputtered epitaxial $\sqrt{2}\text{-Fe}_4\text{N}$ films deposited on SrTiO ₃ (001) substrates. <i>Applied Physics Letters</i> , 2003 , 82, 4534-4536	3-4	33
76	Experimental Demonstration of Spintronic Broadband Microwave Detectors and Their Capability for Powering Nanodevices. <i>Physical Review Applied</i> , 2019 , 11,	4-3	32
75	Spin-torque microwave detector with out-of-plane precessing magnetic moment. <i>Journal of Applied Physics</i> , 2012 , 111, 123904	2-5	32
74	Spin transfer by nonuniform current injection into a nanomagnet. <i>Applied Physics Letters</i> , 2006 , 88, 202504	3-4	31
73	Reduction of spin transfer by synthetic antiferromagnets. <i>Applied Physics Letters</i> , 2004 , 84, 4257-4259	3-4	28
72	Reduction of phase noise in nanowire spin orbit torque oscillators. <i>Scientific Reports</i> , 2015 , 5, 16942	4-9	27
71	Rotation of exchange anisotropy in biased Co/CoO bilayers. <i>Journal of Applied Physics</i> , 2000 , 87, 6418-6429	3-4	27
70	Reduction of switching current density in perpendicular magnetic tunnel junctions by tuning the anisotropy of the CoFeB free layer. <i>Journal of Applied Physics</i> , 2012 , 111, 07C907	2-5	26
69	Diode-MTJ Crossbar Memory Cell Using Voltage-Induced Unipolar Switching for High-Density MRAM. <i>IEEE Electron Device Letters</i> , 2013 , 34, 753-755	4-4	26
68	Temperature dependence of perpendicular magnetic anisotropy in CoFeB thin films. <i>Applied Physics Letters</i> , 2016 , 108, 142403	3-4	26
67	Spin-wave modes in permalloy/platinum wires and tuning of the mode damping by spin Hall current. <i>Physical Review B</i> , 2014 , 90,	3-3	25
66	Spin Hall-induced auto-oscillations in ultrathin YIG grown on Pt. <i>Scientific Reports</i> , 2018 , 8, 1269	4-9	24
65	Micromagnetic simulations of magnetization dynamics in a nanowire induced by a spin-polarized current injected via a point contact. <i>Physical Review B</i> , 2011 , 83,	3-3	24
64	Magnetic anisotropy, damping, and interfacial spin transport in Pt/LSMO bilayers. <i>AIP Advances</i> , 2016 , 6, 055212	1-5	24
63	Exchange field induced magnetoresistance in colossal magnetoresistance manganites. <i>Physical Review Letters</i> , 2001 , 86, 5779-82	7-4	23

62	Spin-Torque Driven Switching Probability Density Function Asymmetry. <i>IEEE Transactions on Magnetism</i> , 2012 , 48, 3818-3820	2	22
61	Time-domain study of frequency-power correlation in spin-torque oscillators. <i>Physical Review B</i> , 2010 , 81,	3.3	21
60	Magnetoresistance and magnetostriction effects in ballistic ferromagnetic nanoconstrictions. <i>Journal of Applied Physics</i> , 2004 , 95, 7315-7317	2.5	21
59	Material parameters of perpendicularly magnetized tunnel junctions from spin torque ferromagnetic resonance techniques. <i>Applied Physics Letters</i> , 2016 , 109, 132408	3.4	20
58	Field-dependent perpendicular magnetic anisotropy in CoFeB thin films. <i>Applied Physics Letters</i> , 2014 , 105, 152403	3.4	20
57	Magnetic domain wall pumping by spin transfer torque. <i>Physical Review Letters</i> , 2010 , 104, 167205	7.4	18
56	Polaronic excitons in ZnxCd1-xSe/ZnSe quantum wells. <i>Physical Review B</i> , 2000 , 61, 1700-1703	3.3	18
55	Exciton transport and nonradiative decay in semiconductor nanostructures. <i>Physical Review B</i> , 1998 , 58, 10687-10691	3.3	18
54	Control of Spin-Wave Damping in YIG Using Spin Currents from Topological Insulators. <i>Physical Review Applied</i> , 2019 , 11,	4.3	17
53	Exchange bias in macroporous Co/CoO. <i>Journal of Magnetism and Magnetic Materials</i> , 2001 , 226-230, 1800-1802	2.8	17
52	Exchange-biased La _{2/3} Ca _{1/3} (Sr _{1/3})MnO ₃ ultrathin films. <i>Applied Physics Letters</i> , 2000 , 76, 478-480	3.4	17
51	Quantifying angular dependence of spin-orbit torques in Ta/CoFeB/MgO trilayers with perpendicular magnetic anisotropy. <i>Physical Review B</i> , 2017 , 95,	3.3	15
50	Compensation of nonlinear phase noise in an in-plane-magnetized anisotropic spin-torque oscillator. <i>Journal of Magnetism and Magnetic Materials</i> , 2009 , 321, L53-L55	2.8	15
49	Giant nonlinear damping in nanoscale ferromagnets. <i>Science Advances</i> , 2019 , 5, eaav6943	14.3	14
48	Magnetization reversal driven by low dimensional chaos in a nanoscale ferromagnet. <i>Nature Communications</i> , 2019 , 10, 543	17.4	14
47	Ultra-fast wide band spectrum analyzer based on a rapidly tuned spin-torque nano-oscillator. <i>Applied Physics Letters</i> , 2018 , 113, 112401	3.4	14
46	Spin wave eigenmodes in transversely magnetized thin film ferromagnetic wires. <i>Physical Review B</i> , 2015 , 92,	3.3	13
45	Spin wave nanofabric update 2012 ,		13

44	Micromagnetic simulations of persistent oscillatory modes excited by spin-polarized current in nanoscale exchange-biased spin valves. <i>Journal of Applied Physics</i> , 2009 , 105, 07D107	2.5	13
43	Role of magnetic aftereffect in coercivity enhancement of Co/CoO bilayers. <i>Physical Review B</i> , 2002 , 65,	3.3	13
42	Magnetic phase transitions in Ta/CoFeB/MgO multilayers. <i>Applied Physics Letters</i> , 2015 , 106, 192407	3.4	12
41	Excitation of spin waves by a current-driven magnetic nanocontact in a perpendicularly magnetized waveguide. <i>Physical Review B</i> , 2013 , 88,	3.3	11
40	Time domain mapping of spin torque oscillator effective energy. <i>Physical Review Letters</i> , 2013 , 111, 087206	2.6	11
39	Oscillatory interlayer coupling in spin Hall systems. <i>Scientific Reports</i> , 2018 , 8, 2318	4.9	10
38	Magnetoluminescence studies in InGaP alloys. <i>Applied Physics Letters</i> , 2000 , 77, 4335-4337	3.4	10
37	Hysteresis regime in the operation of a dual-free-layer spin-torque nano-oscillator with out-of-plane counter-precessing magnetic moments. <i>Journal of Applied Physics</i> , 2013 , 114, 173904	2.5	9
36	Injection locking of multiple auto-oscillation modes in a tapered nanowire spin Hall oscillator. <i>Scientific Reports</i> , 2018 , 8, 16040	4.9	8
35	Immunity of nanoscale magnetic tunnel junctions with perpendicular magnetic anisotropy to ionizing radiation. <i>Scientific Reports</i> , 2020 , 10, 10220	4.9	7
34	Highly Textured IrMn ₃ (111) Thin Films Grown by Magnetron Sputtering. <i>IEEE Magnetics Letters</i> , 2016 , 7, 1-5	1.6	7
33	Spin-Torque Microwave Detectors. <i>Topics in Applied Physics</i> , 2013 , 143-161	0.5	7
32	Thermal stability characterization of magnetic tunnel junctions using hard-axis magnetoresistance measurements. <i>Journal of Applied Physics</i> , 2011 , 109, 07C708	2.5	7
31	Magnetic relaxation in exchange-coupled Co/CoO bilayers measured with ac-anisotropic magnetoresistance. <i>Journal of Applied Physics</i> , 2003 , 93, 8609-8611	2.5	7
30	Low Power Microwave Signal Detection With a Spin-Torque Nano-Oscillator in the Active Self-Oscillating Regime. <i>IEEE Transactions on Magnetics</i> , 2017 , 53, 1-4	2	6
29	Reconfigurable nanoelectronics using graphene based spintronic logic gates 2011 ,		6
28	Quantitative analysis of electric field induced change in anisotropy field in Co ₆₀ Fe ₂₀ B ₂₀ /(011) xPb(Mg _{1/3} Nb _{2/3})O ₃ -(1-x)PbTiO ₃ (x ~ 0.68) heterostructures. <i>Applied Physics Letters</i> , 2012 , 101, 202404	3.4	6
27	Temperature dependence of exchange bias in La _{1/3} Ca _{2/3} MnO ₃ /La _{2/3} Ca _{1/3} MnO ₃ epitaxial multilayers. <i>Journal of Applied Physics</i> , 2001 , 89, 6964-6966	2.5	6

26	Temperature dependence of interlayer exchange coupling in manganite-based superlattices. <i>Journal of Applied Physics</i> , 2001 , 89, 6820-6821	2.5	5
25	Wireless current sensing by near field induction from a spin transfer torque nano-oscillator. <i>Applied Physics Letters</i> , 2016 , 108, 242403	3.4	5
24	. <i>IEEE Magnetics Letters</i> , 2012 , 3, 3000304-3000304	1.6	4
23	A Material Framework for Beyond-CMOS Devices. <i>IEEE Journal on Exploratory Solid-State Computational Devices and Circuits</i> , 2015 , 1, 19-27	2.4	3
22	Effect of magnesium oxide adhesion layer on resonance behavior of plasmonic nanostructures. <i>Applied Physics Letters</i> , 2020 , 116, 241601	3.4	3
21	High rectification sensitivity of radiofrequency signal through adiabatic stochastic resonance in nanoscale magnetic tunnel junctions. <i>Applied Physics Letters</i> , 2019 , 115, 192402	3.4	3
20	Frequency conversion of microwave signal without direct bias current using nanoscale magnetic tunnel junctions. <i>Scientific Reports</i> , 2019 , 9, 828	4.9	3
19	Correction of Phase Errors in a Spin-Wave Transmission Line by Nonadiabatic Parametric Pumping. <i>Physical Review Applied</i> , 2019 , 11,	4.3	2
18	Synthetic antiferromagnet-based spin Josephson oscillator. <i>Applied Physics Letters</i> , 2020 , 116, 132409	3.4	2
17	Signal propagation in dipole coupled nanomagnets for logic applications 2012 ,		2
16	Array of Symmetric Nanohole Dimers for STT-RAM Ultrathin Layer Sensing 2019 ,		2
15	Optical Investigation of Radiation Induced Conductivity Changes in STT-RAM Cells 2016 ,		2
14	Dimensional crossover in spin Hall oscillators. <i>Physical Review B</i> , 2020 , 102,	3.3	2
13	Spin-orbit torque nano-oscillator with giant magnetoresistance readout. <i>Communications Physics</i> , 2020 , 3,	5.4	2
12	Spin-momentum locking induced non-local voltage in topological insulator nanowire. <i>Nanoscale</i> , 2020 , 12, 22958-22962	7.7	2
11	Controlling Magnon Interaction by a Nanoscale Switch. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 20288-20295	9.5	2
10	Activation of Microwave Signals in Nanoscale Magnetic Tunnel Junctions by Neuronal Action Potentials. <i>IEEE Magnetics Letters</i> , 2019 , 10, 1-5	1.6	1
9	New envelope function for describing the electronic properties of semiconductor heterostructures. <i>Russian Physics Journal</i> , 1996 , 39, 719-728	0.7	1

8	Array of symmetric nanohole dimers with high sensitivity for detection of changes in an STT-RAM ultrathin dielectric layer. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2019 , 36, 3090	1.7	1
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6	Plasmonic detection of possible defects in multilayer nanohole array consisting of essential materials in simplified STT-RAM cell 2017 ,		1
5	Self-stabilizing exchange-mediated spin transport. <i>Physical Review B</i> , 2021 , 103,	3.3	1
4	Bias current dependence of superconducting transition temperature in superconducting spin-valve nanowires. <i>Physical Review B</i> , 2019 , 100,	3.3	1
3	Measurement of Microwave Signal Frequency by a Pair of Spin-Torque Microwave Diodes. <i>IEEE Magnetism Letters</i> , 2021 , 12, 1-5	1.6	1
2	Magneto-excitons in (411)A and (100)-oriented GaAs/AlGaAs multiple quantum well structures 1999 , 3625, 515		
1	Optoelectronic Readout of STT-RAM Based on Plasmon Drag Effect. <i>IEEE Journal of Quantum Electronics</i> , 2021 , 57, 1-7		2