

Xi-Chao Zhang

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

98 papers	4,442 citations	29 h-index	66 g-index
114 ext. papers	6,103 ext. citations	5.7 avg, IF	5.97 L-index

#	Paper	IF	Citations
98	Dynamic properties of a ferromagnetic skyrmion in an in-plane magnetic field. <i>Journal of Applied Physics</i> , 2022 , 131, 073901	2.5	0
97	Controlled Switching of the Number of Skyrmions in a Magnetic Nanodot by Electric Fields (Adv. Mater. 11/2022). <i>Advanced Materials</i> , 2022 , 34, 2270090	24	0
96	Exchange-Torque-Triggered Fast Switching of Antiferromagnetic Domains.. <i>Physical Review Letters</i> , 2022 , 128, 137201	7.4	1
95	Controlled switching of the number of skyrmions in a magnetic nanodot by electric fields.. <i>Advanced Materials</i> , 2021 , e2107908	24	3
94	Configurable pixelated skyrmions on nanoscale magnetic grids. <i>Communications Physics</i> , 2021 , 4,	5.4	1
93	A ferromagnetic skyrmion-based nano-oscillator with modified perpendicular magnetic anisotropy. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2021 , 392, 127157	2.3	2
92	Néel-type skyrmions and their current-induced motion in van der Waals ferromagnet-based heterostructures. <i>Physical Review B</i> , 2021 , 103,	3.3	30
91	Current-induced dynamics of skyrmion tubes in synthetic antiferromagnetic multilayers. <i>Physical Review B</i> , 2021 , 103,	3.3	4
90	Confinement and Protection of Skyrmions by Patterns of Modified Magnetic Properties. <i>Nano Letters</i> , 2021 , 21, 4320-4326	11.5	10
89	Tunable Néel-Bloch Magnetic Twists in Fe ₃ GeTe ₂ with van der Waals Structure. <i>Advanced Functional Materials</i> , 2021 , 31, 2103583	15.6	9
88	Magnetic skyrmions for unconventional computing. <i>Materials Horizons</i> , 2021 , 8, 854-868	14.4	23
87	Antiferromagnetic Skyrmions and Bimerons. <i>Topics in Applied Physics</i> , 2021 , 441-457	0.5	
86	Skyrmions in ferrimagnets 2021 , 315-332		
85	A frustrated bimeronium: Static structure and dynamics. <i>Applied Physics Letters</i> , 2021 , 118, 052411	3.4	4
84	Interlayer coupling effect on skyrmion dynamics in synthetic antiferromagnets. <i>Applied Physics Letters</i> , 2021 , 118, 082403	3.4	0
83	Domain wall dynamics in ferromagnet/Ru/ferromagnet stacks with a wedged spacer. <i>Applied Physics Letters</i> , 2021 , 119, 022406	3.4	2
82	Antiferromagnetic skyrmion-based logic gates controlled by electric currents and fields. <i>Applied Physics Letters</i> , 2021 , 119, 062403	3.4	10

81	Conventional applications of skyrmions 2021 , 367-391		
80	Tailoring interfacial effect in multilayers with Dzyaloshinskii-Moriya interaction by helium ion irradiation. <i>Scientific Reports</i> , 2021 , 11, 23626	4.9	1
79	Skyrmion-based artificial synapses for neuromorphic computing. <i>Nature Electronics</i> , 2020 , 3, 148-155	28.4	130
78	A spiking neuron constructed by the skyrmion-based spin torque nano-oscillator. <i>Applied Physics Letters</i> , 2020 , 116, 122402	3.4	10
77	Current-driven skyrmionium in a frustrated magnetic system. <i>Applied Physics Letters</i> , 2020 , 117, 012403	3.4	9
76	Topology-Dependent Brownian Gyromotion of a Single Skyrmion. <i>Physical Review Letters</i> , 2020 , 125, 027206	7.4	20
75	Direct imaging of an inhomogeneous electric current distribution using the trajectory of magnetic half-skyrmions. <i>Science Advances</i> , 2020 , 6, eaay1876	14.3	10
74	Current-Induced Dynamics and Chaos of Antiferromagnetic Bimerons. <i>Physical Review Letters</i> , 2020 , 124, 037202	7.4	26
73	Dynamics of an elliptical ferromagnetic skyrmion driven by the spin-orbit torque. <i>Applied Physics Letters</i> , 2020 , 116, 022407	3.4	11
72	Realization of Isolated and High-Density Skyrmions at Room Temperature in Uncompensated Synthetic Antiferromagnets. <i>Nano Letters</i> , 2020 , 20, 3299-3305	11.5	21
71	Static and dynamic properties of bimerons in a frustrated ferromagnetic monolayer. <i>Physical Review B</i> , 2020 , 101,	3.3	15
70	Dynamics of ferromagnetic bimerons driven by spin currents and magnetic fields. <i>Physical Review B</i> , 2020 , 102,	3.3	6
69	A Comparative Cross-layer Study on Racetrack Memories. <i>ACM Journal on Emerging Technologies in Computing Systems</i> , 2020 , 16, 1-17	1.7	7
68	Skyrmion-electronics: writing, deleting, reading and processing magnetic skyrmions toward spintronic applications. <i>Journal of Physics Condensed Matter</i> , 2020 , 32, 143001	1.8	112
67	A ferromagnetic skyrmion-based nano-oscillator with modified profile of Dzyaloshinskii-Moriya interaction. <i>Journal of Magnetism and Magnetic Materials</i> , 2020 , 496, 165912	2.8	12
66	Current-Induced Helicity Reversal of a Single Skyrmionic Bubble Chain in a Nanostructured Frustrated Magnet. <i>Advanced Materials</i> , 2020 , 32, e1904815	24	23
65	Electric-field-driven non-volatile multi-state switching of individual skyrmions in a multiferroic heterostructure. <i>Nature Communications</i> , 2020 , 11, 3577	17.4	40
64	Bimeron clusters in chiral antiferromagnets. <i>Npj Computational Materials</i> , 2020 , 6,	10.9	8

63	Magnetic skyrmionium diode with a magnetic anisotropy voltage gating. <i>Applied Physics Letters</i> , 2020 , 117, 202401	3.4	10
62	Dynamics of antiskyrmions induced by the voltage-controlled magnetic anisotropy gradient. <i>Journal of Magnetism and Magnetic Materials</i> , 2020 , 496, 165922	2.8	8
61	Dynamics of an antiferromagnetic skyrmion in a racetrack with a defect. <i>Physical Review B</i> , 2019 , 100,	3.3	19
60	Spin torque nano-oscillators based on antiferromagnetic skyrmions. <i>Applied Physics Letters</i> , 2019 , 114, 042402	3.4	53
59	Current-Driven Dynamics of Frustrated Skyrmions in a Synthetic Antiferromagnetic Bilayer. <i>Physical Review Applied</i> , 2019 , 11,	4.3	18
58	Manipulation of magnetic skyrmions in a locally modified synthetic antiferromagnetic racetrack. <i>Journal of Magnetism and Magnetic Materials</i> , 2019 , 482, 155-159	2.8	7
57	Magnetic Skyrmion Spectrum Under Voltage Excitation and its Linear Modulation. <i>Physical Review Applied</i> , 2019 , 12,	4.3	2
56	A skyrmion-based spin-torque nano-oscillator with enhanced edge. <i>Journal of Magnetism and Magnetic Materials</i> , 2019 , 491, 165610	2.8	18
55	An achiral ferromagnetic/chiral antiferromagnetic bilayer system leading to controllable size and density of skyrmions. <i>Scientific Reports</i> , 2019 , 9, 2970	4.9	6
54	Generation and Hall effect of skyrmions enabled using nonmagnetic point contacts. <i>Physical Review B</i> , 2019 , 100,	3.3	6
53	Voltage-Driven High-Speed Skyrmion Motion in a Skyrmion-Shift Device. <i>Physical Review Applied</i> , 2019 , 11,	4.3	19
52	The impact of within-day work breaks on daily recovery processes: An event-based pre-/post-experience sampling study. <i>Journal of Occupational and Organizational Psychology</i> , 2019 , 92, 191-211	3.7	9
51	Nd-Fe-B films with perpendicular magnetic anisotropy and extremely large room temperature coercivity. <i>Journal of Magnetism and Magnetic Materials</i> , 2019 , 474, 406-410	2.8	3
50	Electric Field-Induced Creation and Directional Motion of Domain Walls and Skyrmion Bubbles. <i>Nano Letters</i> , 2019 , 19, 353-361	11.5	67
49	A compact skyrmionic leaky-integrate-fire spiking neuron device. <i>Nanoscale</i> , 2018 , 10, 6139-6146	7.7	57
48	Skyrmions in Magnetic Tunnel Junctions. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 16887-16892	9.5	49
47	Dynamics of a magnetic skyrmionium driven by spin waves. <i>Applied Physics Letters</i> , 2018 , 112, 142404	3.4	32
46	Skyrmion Racetrack Memory With Random Information Update/Deletion/Insertion. <i>IEEE Transactions on Electron Devices</i> , 2018 , 65, 87-95	2.9	26

45	Vortical structures for nanomagnetic memory induced by dipole-dipole interaction in monolayer disks. <i>Superlattices and Microstructures</i> , 2018 , 117, 495-502	2.8	6
44	Controllable transport of a skyrmion in a ferromagnetic narrow channel with voltage-controlled magnetic anisotropy. <i>Journal Physics D: Applied Physics</i> , 2018 , 51, 205002	3	11
43	Current-driven dynamics and inhibition of the skyrmion Hall effect of ferrimagnetic skyrmions in GdFeCo films. <i>Nature Communications</i> , 2018 , 9, 959	17.4	197
42	Creation, transport and detection of imprinted magnetic solitons stabilized by spin-polarized current. <i>Journal of Magnetism and Magnetic Materials</i> , 2018 , 455, 25-31	2.8	16
41	Strain-controlled skyrmion creation and propagation in ferroelectric/ferromagnetic hybrid wires. <i>Journal of Magnetism and Magnetic Materials</i> , 2018 , 455, 19-24	2.8	23
40	Dynamics of Magnetic Skyrmion Clusters Driven by Spin-Polarized Current With a Spatially Varied Polarization. <i>IEEE Magnetism Letters</i> , 2018 , 9, 1-5	1.6	4
39	A Comparative Study on Racetrack Memories: Domain Wall vs. Skyrmion 2018 ,		5
38	Dynamics of the antiferromagnetic skyrmion induced by a magnetic anisotropy gradient. <i>Physical Review B</i> , 2018 , 98,	3.3	47
37	Complementary Skyrmion Racetrack Memory Enables Voltage-Controlled Local Data Update Functionality. <i>IEEE Transactions on Electron Devices</i> , 2018 , 65, 4667-4673	2.9	7
36	Deterministic creation and deletion of a single magnetic skyrmion observed by direct time-resolved X-ray microscopy. <i>Nature Electronics</i> , 2018 , 1, 288-296	28.4	74
35	Magnetic skyrmion-based synaptic devices. <i>Nanotechnology</i> , 2017 , 28, 08LT02	3.4	152
34	The influence of the edge effect on the skyrmion generation in a magnetic nanotrack. <i>AIP Advances</i> , 2017 , 7, 025105	1.5	12
33	Compact Modeling and Evaluation of Magnetic Skyrmion-Based Racetrack Memory. <i>IEEE Transactions on Electron Devices</i> , 2017 , 64, 1060-1068	2.9	19
32	Motion of skyrmions in nanowires driven by magnonic momentum-transfer forces. <i>New Journal of Physics</i> , 2017 , 19, 065001	2.9	29
31	Magnetic skyrmion-based artificial neuron device. <i>Nanotechnology</i> , 2017 , 28, 31LT01	3.4	105
30	An Improved Racetrack Structure for Transporting a Skyrmion. <i>Scientific Reports</i> , 2017 , 7, 45330	4.9	58
29	A microwave field-driven transistor-like skyrmionic device with the microwave current-assisted skyrmion creation. <i>Journal of Applied Physics</i> , 2017 , 122, 153901	2.5	15
28	Magnetic domain wall engineering in a nanoscale permalloy junction. <i>Applied Physics Letters</i> , 2017 , 111, 072401	3.4	10

- 27 Skyrmion dynamics in a frustrated ferromagnetic film and current-induced helicity locking-unlocking transition. *Nature Communications*, **2017**, 8, 1717 17.4 95
- 26 Skyrmion dynamics in width-varying nanotracks and implications for skyrmionic applications. *Applied Physics Letters*, **2017**, 111, 202406 3.4 21
- 25 Direct observation of the skyrmion Hall effect. *Nature Physics*, **2017**, 13, 162-169 16.2 555
- 24 Hysteresis of misaligned hard/soft grains. *Journal of Magnetism and Magnetic Materials*, **2016**, 397, 181-187 17.8 4
- 23 Voltage Controlled Magnetic Skyrmion Motion for Racetrack Memory. *Scientific Reports*, **2016**, 6, 23164 4.9 130
- 22 Skyrmion-Electronics: An Overview and Outlook. *Proceedings of the IEEE*, **2016**, 104, 2040-2061 14.3 196
- 21 Control and manipulation of a magnetic skyrmionium in nanostructures. *Physical Review B*, **2016**, 94, 3.3 81
- 20 High-topological-number magnetic skyrmions and topologically protected dissipative structure. *Physical Review B*, **2016**, 93, 3.3 29
- 19 Antiferromagnetic Skyrmion: Stability, Creation and Manipulation. *Scientific Reports*, **2016**, 6, 24795 4.9 206
- 18 Spin-Cherenkov effect in a magnetic nanostrip with interfacial Dzyaloshinskii-Moriya interaction. *Scientific Reports*, **2016**, 6, 25189 4.9 5
- 17 Complementary Skyrmion Racetrack Memory With Voltage Manipulation. *IEEE Electron Device Letters*, **2016**, 37, 924-927 4.4 52
- 16 Magnetic bilayer-skyrmions without skyrmion Hall effect. *Nature Communications*, **2016**, 7, 10293 17.4 270
- 15 Effect of exchange coupling on magnetic property in SmCo₂/BFe layered system. *Chinese Physics B*, **2016**, 25, 037501 1.2 3
- 14 Magnetic Skyrmion Transport in a Nanotrack With Spatially Varying Damping and Non-Adiabatic Torque. *IEEE Transactions on Magnetics*, **2016**, 1-1 2 4
- 13 Thermally stable magnetic skyrmions in multilayer synthetic antiferromagnetic racetracks. *Physical Review B*, **2016**, 94, 3.3 51
- 12 Skyrmion-skyrmion and skyrmion-edge repulsions in skyrmion-based racetrack memory. *Scientific Reports*, **2015**, 5, 7643 4.9 258
- 11 Magnetic skyrmion transistor: skyrmion motion in a voltage-gated nanotrack. *Scientific Reports*, **2015**, 5, 11369 4.9 158
- 10 Hysteresis Loops, Critical Fields and Energy Products for Exchange-spring Hard/soft/hard Trilayers. *Journal of Magnetism and Magnetic Materials*, **2015**, 20, 31-39 1.9

9	Magnetic skyrmion logic gates: conversion, duplication and merging of skyrmions. <i>Scientific Reports</i> , 2015 , 5, 9400	4.9	467
8	All-magnetic control of skyrmions in nanowire by spin wave 2015 ,		1
7	Simulation of spin-torque diode microwave detectors. <i>EPJ Applied Physics</i> , 2015 , 69, 10603	1.1	
6	Skyrmion Spin Structure of Exchange-Coupled Magnetic Core/Shell Nanodisk. <i>IEEE Transactions on Magnetics</i> , 2015 , 51, 1-3	2	0
5	All-magnetic control of skyrmions in nanowires by a spin wave. <i>Nanotechnology</i> , 2015 , 26, 225701	3.4	59
4	Micromagnetic simulation of Sm ₂ O ₃ /Fe/Sm ₂ O ₃ trilayers with various angles between easy axes and the film plane. <i>Chinese Physics B</i> , 2014 , 23, 097504	1.2	5
3	3D and 1D calculation of hysteresis loops and energy products for anisotropic nanocomposite films with perpendicular anisotropy. <i>Journal of Magnetism and Magnetic Materials</i> , 2013 , 343, 245-250	2.8	19
2	Micromagnetic analysis of the effect of the easy axis orientation on demagnetization process in Nd ₂ Fe ₁₄ B/Fe bilayers. <i>Wuli Xuebao/Acta Physica Sinica</i> , 2013 , 62, 227502	0.6	4
1	Micromagnetic analysis of the maghemite platelet chains in the iron-mineral-based magnetoreceptor of birds. <i>Wuli Xuebao/Acta Physica Sinica</i> , 2013 , 62, 218702	0.6	1