Xi-Chao Zhang

List of Publications by Citations

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	Direct observation of the skyrmion Hall effect. *Nature Physics*, **2017**, 13, 162-169	16.2	555
97	Magnetic skyrmion logic gates: conversion, duplication and merging of skyrmions. *Scientific Reports*, **2015**, 5, 9400	4.9	467
96	Magnetic bilayer-skyrmions without skyrmion Hall effect. *Nature Communications*, **2016**, 7, 10293	17.4	270
95	Skyrmion-skyrmion and skyrmion-edge repulsions in skyrmion-based racetrack memory. *Scientific Reports*, **2015**, 5, 7643	4.9	258
94	Antiferromagnetic Skyrmion: Stability, Creation and Manipulation. *Scientific Reports*, **2016**, 6, 24795	4.9	206
93	Current-driven dynamics and inhibition of the skyrmion Hall effect of ferrimagnetic skyrmions in GdFeCo films. *Nature Communications*, **2018**, 9, 959	17.4	197
92	Skyrmion-Electronics: An Overview and Outlook. *Proceedings of the IEEE*, **2016**, 104, 2040-2061	14.3	196
91	Magnetic skyrmion transistor: skyrmion motion in a voltage-gated nanotrack. *Scientific Reports*, **2015**, 5, 11369	4.9	158
90	Magnetic skyrmion-based synaptic devices. *Nanotechnology*, **2017**, 28, 08LT02	3.4	152
89	Skyrmion-based artificial synapses for neuromorphic computing. *Nature Electronics*, **2020**, 3, 148-155	28.4	130
88	Voltage Controlled Magnetic Skyrmion Motion for Racetrack Memory. *Scientific Reports*, **2016**, 6, 23164	4.9	130
87	Skyrmion-electronics: writing, deleting, reading and processing magnetic skyrmions toward spintronic applications. *Journal of Physics Condensed Matter*, **2020**, 32, 143001	1.8	112
86	Magnetic skyrmion-based artificial neuron device. *Nanotechnology*, **2017**, 28, 31LT01	3.4	105
85	Skyrmion dynamics in a frustrated ferromagnetic film and current-induced helicity locking-unlocking transition. *Nature Communications*, **2017**, 8, 1717	17.4	95
84	Control and manipulation of a magnetic skyrmionium in nanostructures. *Physical Review B*, **2016**, 94,	3.3	81
83	Deterministic creation and deletion of a single magnetic skyrmion observed by direct time-resolved X-ray microscopy. *Nature Electronics*, **2018**, 1, 288-296	28.4	74
82	Electric Field-Induced Creation and Directional Motion of Domain Walls and Skyrmion Bubbles. *Nano Letters*, **2019**, 19, 353-361	11.5	67

81	All-magnetic control of skyrmions in nanowires by a spin wave. *Nanotechnology*, **2015**, 26, 225701	3.4	59
80	An Improved Racetrack Structure for Transporting a Skyrmion. *Scientific Reports*, **2017**, 7, 45330	4.9	58
79	A compact skyrmionic leaky-integrate-fire spiking neuron device. *Nanoscale*, **2018**, 10, 6139-6146	7.7	57
78	Spin torque nano-oscillators based on antiferromagnetic skyrmions. *Applied Physics Letters*, **2019**, 114, 042402	3.4	53
77	Complementary Skyrmion Racetrack Memory With Voltage Manipulation. *IEEE Electron Device Letters*, **2016**, 37, 924-927	4.4	52
76	Thermally stable magnetic skyrmions in multilayer synthetic antiferromagnetic racetracks. *Physical Review B*, **2016**, 94,	3.3	51
75	Skyrmions in Magnetic Tunnel Junctions. *ACS Applied Materials & Interfaces*, **2018**, 10, 16887-16892	9.5	49
74	Dynamics of the antiferromagnetic skyrmion induced by a magnetic anisotropy gradient. *Physical Review B*, **2018**, 98,	3.3	47
73	Electric-field-driven non-volatile multi-state switching of individual skyrmions in a multiferroic heterostructure. *Nature Communications*, **2020**, 11, 3577	17.4	40
72	Dynamics of a magnetic skyrmionium driven by spin waves. *Applied Physics Letters*, **2018**, 112, 142404	3.4	32
71	Néel-type skyrmions and their current-induced motion in van der Waals ferromagnet-based heterostructures. *Physical Review B*, **2021**, 103,	3.3	30
70	Motion of skyrmions in nanowires driven by magnonic momentum-transfer forces. *New Journal of Physics*, **2017**, 19, 065001	2.9	29
69	High-topological-number magnetic skyrmions and topologically protected dissipative structure. *Physical Review B*, **2016**, 93,	3.3	29
68	Current-Induced Dynamics and Chaos of Antiferromagnetic Bimerons. *Physical Review Letters*, **2020**, 124, 037202	7.4	26
67	Skyrmion Racetrack Memory With Random Information Update/Deletion/Insertion. *IEEE Transactions on Electron Devices*, **2018**, 65, 87-95	2.9	26
66	Strain-controlled skyrmion creation and propagation in ferroelectric/ferromagnetic hybrid wires. *Journal of Magnetism and Magnetic Materials*, **2018**, 455, 19-24	2.8	23
65	Current-Induced Helicity Reversal of a Single Skyrmionic Bubble Chain in a Nanostructured Frustrated Magnet. *Advanced Materials*, **2020**, 32, e1904815	24	23
64	Magnetic skyrmions for unconventional computing. *Materials Horizons*, **2021**, 8, 854-868	14.4	23

63	Realization of Isolated and High-Density Skyrmions at Room Temperature in Uncompensated Synthetic Antiferromagnets. *Nano Letters*, **2020**, 20, 3299-3305	11.5	21
62	Skyrmion dynamics in width-varying nanotracks and implications for skyrmionic applications. *Applied Physics Letters*, **2017**, 111, 202406	3.4	21
61	Topology-Dependent Brownian Gyromotion of a Single Skyrmion. *Physical Review Letters*, **2020**, 125, 027206	7.4	20
60	Compact Modeling and Evaluation of Magnetic Skyrmion-Based Racetrack Memory. *IEEE Transactions on Electron Devices*, **2017**, 64, 1060-1068	2.9	19
59	Dynamics of an antiferromagnetic skyrmion in a racetrack with a defect. *Physical Review B*, **2019**, 100,	3.3	19
58	3D and 1D calculation of hysteresis loops and energy products for anisotropic nanocomposite films with perpendicular anisotropy. *Journal of Magnetism and Magnetic Materials*, **2013**, 343, 245-250	2.8	19
57	Voltage-Driven High-Speed Skyrmion Motion in a Skyrmion-Shift Device. *Physical Review Applied*, **2019**, 11,	4.3	19
56	Current-Driven Dynamics of Frustrated Skyrmions in a Synthetic Antiferromagnetic Bilayer. *Physical Review Applied*, **2019**, 11,	4.3	18
55	A skyrmion-based spin-torque nano-oscillator with enhanced edge. *Journal of Magnetism and Magnetic Materials*, **2019**, 491, 165610	2.8	18
54	Creation, transport and detection of imprinted magnetic solitons stabilized by spin-polarized current. *Journal of Magnetism and Magnetic Materials*, **2018**, 455, 25-31	2.8	16
53	A microwave field-driven transistor-like skyrmionic device with the microwave current-assisted skyrmion creation. *Journal of Applied Physics*, **2017**, 122, 153901	2.5	15
52	Static and dynamic properties of bimerons in a frustrated ferromagnetic monolayer. *Physical Review B*, **2020**, 101,	3.3	15
51	The influence of the edge effect on the skyrmion generation in a magnetic nanotrack. *AIP Advances*, **2017**, 7, 025105	1.5	12
50	A ferromagnetic skyrmion-based nano-oscillator with modified profile of Dzyaloshinskii-Moriya interaction. *Journal of Magnetism and Magnetic Materials*, **2020**, 496, 165912	2.8	12
49	Dynamics of an elliptical ferromagnetic skyrmion driven by the spin□rbit torque. *Applied Physics Letters*, **2020**, 116, 022407	3.4	11
48	Controllable transport of a skyrmion in a ferromagnetic narrow channel with voltage-controlled magnetic anisotropy. *Journal Physics D: Applied Physics*, **2018**, 51, 205002	3	11
47	A spiking neuron constructed by the skyrmion-based spin torque nano-oscillator. *Applied Physics Letters*, **2020**, 116, 122402	3.4	10
46	Direct imaging of an inhomogeneous electric current distribution using the trajectory of magnetic half-skyrmions. *Science Advances*, **2020**, 6, eaay1876	14.3	10

45	Magnetic domain wall engineering in a nanoscale permalloy junction. *Applied Physics Letters*, **2017**, 111, 072401	3.4	10
44	Magnetic skyrmionium diode with a magnetic anisotropy voltage gating. *Applied Physics Letters*, **2020**, 117, 202401	3.4	10
43	Confinement and Protection of Skyrmions by Patterns of Modified Magnetic Properties. *Nano Letters*, **2021**, 21, 4320-4326	11.5	10
42	Antiferromagnetic skyrmion-based logic gates controlled by electric currents and fields. *Applied Physics Letters*, **2021**, 119, 062403	3.4	10
41	Current-driven skyrmionium in a frustrated magnetic system. *Applied Physics Letters*, **2020**, 117, 012403	3.4	9
40	Tunable Néel–Bloch Magnetic Twists in Fe3GeTe2 with van der Waals Structure. *Advanced Functional Materials*, **2021**, 31, 2103583	15.6	9
39	The impact of within-day work breaks on daily recovery processes: An event-based pre-/post-experience sampling study. *Journal of Occupational and Organizational Psychology*, **2019**, 92, 191-211	3.7	9
38	Bimeron clusters in chiral antiferromagnets. *Npj Computational Materials*, **2020**, 6,	10.9	8
37	Dynamics of antiskyrmions induced by the voltage-controlled magnetic anisotropy gradient. *Journal of Magnetism and Magnetic Materials*, **2020**, 496, 165922	2.8	8
36	Manipulation of magnetic skyrmions in a locally modified synthetic antiferromagnetic racetrack. *Journal of Magnetism and Magnetic Materials*, **2019**, 482, 155-159	2.8	7
35	A Comparative Cross-layer Study on Racetrack Memories. *ACM Journal on Emerging Technologies in Computing Systems*, **2020**, 16, 1-17	1.7	7
34	Complementary Skyrmion Racetrack Memory Enables Voltage-Controlled Local Data Update Functionality. *IEEE Transactions on Electron Devices*, **2018**, 65, 4667-4673	2.9	7
33	Vortical structures for nanomagnetic memory induced by dipole-dipole interaction in monolayer disks. *Superlattices and Microstructures*, **2018**, 117, 495-502	2.8	6
32	Dynamics of ferromagnetic bimerons driven by spin currents and magnetic fields. *Physical Review B*, **2020**, 102,	3.3	6
31	An achiral ferromagnetic/chiral antiferromagnetic bilayer system leading to controllable size and density of skyrmions. *Scientific Reports*, **2019**, 9, 2970	4.9	6
30	Generation and Hall effect of skyrmions enabled using nonmagnetic point contacts. *Physical Review B*, **2019**, 100,	3.3	6
29	Spin-Cherenkov effect in a magnetic nanostrip with interfacial Dzyaloshinskii-Moriya interaction. *Scientific Reports*, **2016**, 6, 25189	4.9	5
28	Micromagnetic simulation of Sm□o/□Fe/Sm□o trilayers with various angles between easy axes and the film plane. *Chinese Physics B*, **2014**, 23, 097504	1.2	5

27	A Comparative Study on Racetrack Memories: Domain Wall vs. Skyrmion **2018**,		5
26	Hysteresis of misaligned hard□soft grains. *Journal of Magnetism and Magnetic Materials*, **2016**, 397, 181-187	2.8	4
25	Dynamics of Magnetic Skyrmion Clusters Driven by Spin-Polarized Current With a Spatially Varied Polarization. *IEEE Magnetics Letters*, **2018**, 9, 1-5	1.6	4
24	Micromagnetic analysis of the effect of the easy axis orientation on demagnetization process in Nd2Fe14B/□Fe bilayers. *Wuli Xuebao/Acta Physica Sinica*, **2013**, 62, 227502	0.6	4
23	Current-induced dynamics of skyrmion tubes in synthetic antiferromagnetic multilayers. *Physical Review B*, **2021**, 103,	3.3	4
22	Magnetic Skyrmion Transport in a Nanotrack With Spatially Varying Damping and Non-Adiabatic Torque. *IEEE Transactions on Magnetics*, **2016**, 1-1	2	4
21	A frustrated bimeronium: Static structure and dynamics. *Applied Physics Letters*, **2021**, 118, 052411	3.4	4
20	Controlled switching of the number of skyrmions in a magnetic nanodot by electric fields.. *Advanced Materials*, **2021**, e2107908	24	3
19	Effect of exchange coupling on magnetic property in Sm□Co/□Fe layered system. *Chinese Physics B*, **2016**, 25, 037501	1.2	3
18	Nd-Fe-B films with perpendicular magnetic anisotropy and extremely large room temperature coercivity. *Journal of Magnetism and Magnetic Materials*, **2019**, 474, 406-410	2.8	3
17	Magnetic Skyrmion Spectrum Under Voltage Excitation and its Linear Modulation. *Physical Review Applied*, **2019**, 12,	4.3	2
16	A ferromagnetic skyrmion-based nano-oscillator with modified perpendicular magnetic anisotropy. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **2021**, 392, 127157	2.3	2
15	Domain wall dynamics in ferromagnet/Ru/ferromagnet stacks with a wedged spacer. *Applied Physics Letters*, **2021**, 119, 022406	3.4	2
14	All-magnetic control of skyrmions in nanowire by spin wave **2015**,		1
13	Configurable pixelated skyrmions on nanoscale magnetic grids. *Communications Physics*, **2021**, 4,	5.4	1
12	Micromagnetic analysis of the maghemite platelet chains in the iron-mineral-based magnetoreceptor of birds. *Wuli Xuebao/Acta Physica Sinica*, **2013**, 62, 218702	0.6	1
11	Exchange-Torque-Triggered Fast Switching of Antiferromagnetic Domains.. *Physical Review Letters*, **2022**, 128, 137201	7.4	1
10	Tailoring interfacial effect in multilayers with Dzyaloshinskii-Moriya interaction by helium ion irradiation. *Scientific Reports*, **2021**, 11, 23626	4.9	1

9	Skyrmion Spin Structure of Exchange-Coupled Magnetic Core–Shell Nanodisk. *IEEE Transactions on Magnetics*, **2015**, 51, 1-3	2	0
8	Interlayer coupling effect on skyrmion dynamics in synthetic antiferromagnets. *Applied Physics Letters*, **2021**, 118, 082403	3.4	0
7	Dynamic properties of a ferromagnetic skyrmion in an in-plane magnetic field. *Journal of Applied Physics*, **2022**, 131, 073901	2.5	0
6	Controlled Switching of the Number of Skyrmions in a Magnetic Nanodot by Electric Fields (Adv. Mater. 11/2022). *Advanced Materials*, **2022**, 34, 2270090	24	0
5	Hysteresis Loops, Critical Fields and Energy Products for Exchange-spring Hard/soft/hard Trilayers. *Journal of Magnetics*, **2015**, 20, 31-39	1.9	
4	Simulation of spin-torque diode microwave detectors. *EPJ Applied Physics*, **2015**, 69, 10603	1.1	
3	Antiferromagnetic Skyrmions and Bimerons. *Topics in Applied Physics*, **2021**, 441-457	0.5	
2	Skyrmions in ferrimagnets **2021**, 315-332		
1	Conventional applications of skyrmions **2021**, 367-391		