

# Hao Wu

## List of Publications by Year in descending order

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78  
papers

2,845  
citations

147566

31  
h-index

182168

51  
g-index

80  
all docs

80  
docs citations

80  
times ranked

2863  
citing authors

#	ARTICLE	IF	CITATIONS
1	Room-Temperature Skyrmion Shift Device for Memory Application. Nano Letters, 2017, 17, 261-268.	4.5	227
2	Roadmap of Spin-Orbit Torques. IEEE Transactions on Magnetics, 2021, 57, 1-39.	1.2	225
3	Room-Temperature Spin-Orbit Torque from Topological Surface States. Physical Review Letters, 2019, 123, 207205.	2.9	129
4	Exchange bias switching in an antiferromagnet/ferromagnet bilayer driven by spin-orbit torque. Nature Electronics, 2020, 3, 757-764.	13.1	99
5	Room-Temperature Skyrmions in an Antiferromagnet-Based Heterostructure. Nano Letters, 2018, 18, 980-986.	4.5	98
6	Magnon Valve Effect between Two Magnetic Insulators. Physical Review Letters, 2018, 120, 097205.	2.9	97
7	Giant nonvolatile manipulation of magnetoresistance in magnetic tunnel junctions by electric fields via magnetoelectric coupling. Nature Communications, 2019, 10, 243.	5.8	94
8	Field-Free Programmable Spin Logics via Chirality-Reversible Spin-Orbit Torque Switching. Advanced Materials, 2018, 30, e1801318.	11.1	91
9	Role of dimensional crossover on spin-orbit torque efficiency in magnetic insulator thin films. Nature Communications, 2018, 9, 3612.	5.8	84
10	Spin-Orbit Torque Switching of a Nearly Compensated Ferrimagnet by Topological Surface States. Advanced Materials, 2019, 31, e1901681.	11.1	81
11	Strain-induced modulation of perpendicular magnetic anisotropy in Ta/CoFeB/MgO structures investigated by ferromagnetic resonance. Applied Physics Letters, 2015, 106, .	1.5	79
12	Observation of magnon-mediated electric current drag at room temperature. Physical Review B, 2016, 93, .	1.1	76
13	Creation and annihilation of non-volatile fixed magnetic skyrmions using voltage control of magnetic anisotropy. Nature Electronics, 2020, 3, 539-545.	13.1	76
14	Magnetic memory driven by topological insulators. Nature Communications, 2021, 12, 6251.	5.8	67
15	Chiral Symmetry Breaking for Deterministic Switching of Perpendicular Magnetization by Spin-Orbit Torque. Nano Letters, 2021, 21, 515-521.	4.5	64
16	Programmable Spin Logic Based on Spin Hall Effect in a Single Device. Advanced Electronic Materials, 2017, 3, 1600282.	2.6	59
17	Scaling relation between anomalous Nernst and Hall effect in $\text{Pt}/\text{MgO}$ . Physical Review B, 2016, 93, .		
18	Deterministic Spin-Orbit Torque Switching by a Light-Metal Insertion. Nano Letters, 2020, 20, 3703-3709.	4.5	52

#	ARTICLE	IF	CITATIONS
19	Spin-orbit torque from a ferromagnetic metal. <i>Physical Review B</i> , 2019, 99, .	1.1	49
20	Field-free spin Hall effect driven magnetization switching in Pd/Co/IrMn exchange coupling system. <i>Applied Physics Letters</i> , 2016, 109, .	1.5	48
21	Thermally stable voltage-controlled perpendicular magnetic anisotropy in Mo   CoFeB   MgO structures. <i>Applied Physics Letters</i> , 2015, 107, .	1.5	47
22	Voltage-controlled magnetoelectric memory and logic devices. <i>MRS Bulletin</i> , 2018, 43, 970-977.	1.7	47
23	Spin-orbit torque switching in perpendicular Y3Fe5O12/Pt bilayer. <i>Applied Physics Letters</i> , 2019, 114, .	1.5	47
24	Field-Free Spin-Orbit Torque Switching of Perpendicular Magnetization by the Rashba Interface. <i>ACS Applied Materials &amp; Interfaces</i> , 2019, 11, 39369-39375.	4.0	45
25	Integrated RF On-Chip Inductors With Patterned Co-Zr-Ta-B Films. <i>IEEE Transactions on Magnetics</i> , 2012, 48, 4123-4126.	1.2	44
26	Ferrimagnetic Skyrmions in Topological Insulator/Ferrimagnet Heterostructures. <i>Advanced Materials</i> , 2020, 32, e2003380.	11.1	41
27	Electrical control over perpendicular magnetization switching driven by spin-orbit torques. <i>Physical Review B</i> , 2016, 94, .	1.1	40
28	Observation of pure inverse spin Hall effect in ferromagnetic metals via ferromagnetic/antiferromagnetic exchange-bias structures. <i>Physical Review B</i> , 2015, 92, .	1.1	38
29	Spatially Resolved Electric-Field Manipulation of Magnetism for CoFeB Mesoscopic Discs on Ferroelectrics. <i>Advanced Functional Materials</i> , 2018, 28, 1706448.	7.8	35
30	Pressure-Induced Metallization and Robust Superconductivity in Pristine $1T\text{-TaSe}_2$ . <i>Advanced Electronic Materials</i> , 2018, 4, 1800155.	2.6	33
31	Nanometer-Type Elliptical Skyrmions in a Laterally Asymmetric Magnetic Multilayer. <i>Advanced Materials</i> , 2021, 33, e2006924.	11.1	32
32	Electric-Field Control of Magnetism in $\text{Co}_{40}\text{Fe}_{40}\text{B}_{20}/(1-x)\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3\text{-xPbTiO}_3$ Multiferroic Heterostructures with Different Ferroelectric Phases. <i>ACS Applied Materials &amp; Interfaces</i> , 2016, 8, 3784-3791.	4.0	31
33	Strongly Surface State Carrier-Dependent Spin-Orbit Torque in Magnetic Topological Insulators. <i>Advanced Materials</i> , 2020, 32, e1907661.	11.1	29
34	In-plane current-driven spin-orbit torque switching in perpendicularly magnetized films with enhanced thermal tolerance. <i>Applied Physics Letters</i> , 2016, 108, .	1.5	26
35	Pressure-driven Lifshitz transition in type-II Dirac semimetal $\text{NiTe}_2$ . <i>Physical Review B</i> , 2020, 101, .	1.1	25
36	Hall magnetoresistance: The role of edge spin accumulation and interfacial spin current. <i>Physical Review B</i> , 2016, 94, .	1.1	25

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37	Room Temperature Highly Efficient Topological Insulator/Mo/CoFeB Spin-Orbit Torque Memory with Perpendicular Magnetic Anisotropy. , 2018, , .		21
38	Improved High Frequency Response and Quality Factor of On-Chip Ferromagnetic Thin Film Inductors by Laminating and Patterning Co-Zr-Ta-B Films. IEEE Transactions on Magnetics, 2013, 49, 4176-4179.	1.2	20
39	Experimental demonstration of programmable multi-functional spin logic cell based on spin Hall effect. Journal of Magnetism and Magnetic Materials, 2017, 428, 401-405.	1.0	20
40	Termination switching of antiferromagnetic proximity effect in topological insulator. Science Advances, 2020, 6, eaaz8463.	4.7	20
41	Field-free approaches for deterministic spin-orbit torque switching of the perpendicular magnet. Materials Futures, 2022, 1, 022201.	3.1	20
42	Polarization-Mediated Thermal Stability of Metal/Oxide Heterointerface. Advanced Materials, 2015, 27, 6934-6938.	11.1	19
43	Separation of inverse spin Hall effect and anomalous Nernst effect in ferromagnetic metals. Journal of Magnetism and Magnetic Materials, 2017, 441, 149-153.	1.0	19
44	Integrated Transformers With Magnetic Thin Films. IEEE Transactions on Magnetics, 2016, 52, 1-4.	1.2	18
45	Nonlocal magnetoresistance due to Lorentz force in linear transport region in bulk silicon. Applied Physics Letters, 2013, 103, .	1.5	17
46	Record thermopower found in an IrMn-based spintronic stack. Nature Communications, 2020, 11, 2023.	5.8	16
47	Enhancement of spin-to-charge conversion efficiency in topological insulators by interface engineering. APL Materials, 2021, 9, .	2.2	15
48	Determination of spin relaxation times in heavy metals via second-harmonic spin injection magnetoresistance. Physical Review B, 2017, 96, .	1.1	14
49	Experimental demonstration of voltage-gated spin-orbit torque switching in an antiferromagnet/ferromagnet structure. Physical Review B, 2021, 103, .	1.1	14
50	Modulation of thermal stability and spin-orbit torque in IrMn/CoFeB/MgO structures through atom thick W insertion. Applied Physics Letters, 2020, 117, .	1.5	13
51	Spin-orbit torques in structures with asymmetric damping layers. Applied Physics Letters, 2020, 117, 182403.	1.5	13
52	Epitaxial yttrium iron garnet film for fabrication of high frequency on-chip inductors. Applied Physics Letters, 2016, 109, .	1.5	12
53	Pressure-induced evolution of structural and electronic properties in $\text{TiT}_2\text{e}_2$ . Physical Review B, 2019, 99, .	1.1	12
54	Spin transmission in IrMn through measurements of spin Hall magnetoresistance and spin-orbit torque. Physical Review B, 2020, 101, .	1.1	11

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55	Large spin to charge conversion in antiferromagnetic Weyl semimetal Mn <sub>3</sub> Sn. APL Materials, 2021, 9, .	2.2	11
56	Magnon junction effect in Y <sub>3</sub> Fe <sub>5</sub> O <sub>12</sub> /CoO/Y <sub>3</sub> Fe <sub>5</sub> O <sub>12</sub> insulating heterostructures. Applied Physics Letters, 2021, 119, .	1.5	9
57	Spin Hall Magnetoresistance in CoFe<sub>2</sub>/O<sub>4</sub>/Pt Films. IEEE Transactions on Magnetics, 2015, 51, 1-4.	1.2	8
58	Interfacial spin transmission and spinâ€œorbit torques in as-grown and annealed W/Co <sub>2</sub> FeAl/MgO multilayers. Applied Physics Letters, 2020, 117, .	1.5	8
59	Study of the perpendicular magnetic anisotropy, spinâ€œorbit torque, and Dzyaloshinskiiâ€œMoriya interaction in the heavy metal/CoFeB bilayers with Ir <sub>22</sub> Mn <sub>78</sub> insertion. Applied Physics Letters, 2020, 116, 242407.	1.5	8
60	A Spinâ€œOrbit Torque Ratchet at Ferromagnet/Antiferromagnet Interface via Exchange Spring. Advanced Functional Materials, 2022, 32, .	7.8	8
61	Efficient Spinâ€œOrbit Torque Switching of Perpendicular Magnetization using Topological Insulators with High Thermal Tolerance. Advanced Electronic Materials, 2022, 8, .	2.6	6
62	Integration of magnetic materials into package RF and power inductors on organic substrates for system in package (SiP) applications. , 2014, , .		5
63	Control of magnetic flux and eddy currents in magnetic films for on-chip radio frequency inductors: Role of the magnetic vias. Journal of Applied Physics, 2014, 115, .	1.1	5
64	Spintronic devices for low energy dissipation. , 2018, , .		5
65	Room temperature spin injection into SiC via Schottky barrier. Applied Physics Letters, 2018, 113, 222402.	1.5	5
66	Magneto-Seebeck effect in spin valves. Journal of Applied Physics, 2017, 122, .	1.1	5
67	Hybrid magnetic anisotropy [Co/Ni]/Cu/[Co/Pt] spin-valves. Journal of Magnetism and Magnetic Materials, 2018, 449, 271-277.	1.0	4
68	Effect of pressure on structural and electronic properties of the noncentrosymmetric superconductor Rh <sub>2</sub> Mo <sub>3</sub> N. Physical Review B, 2019, 100, .	1.1	4
69	A thermodynamic core using voltage-controlled spinâ€œorbit-torque magnetic tunnel junctions. Nanotechnology, 2021, 32, 505405.	1.3	4
70	Comprehensive Study of the Current-Induced Spinâ€œOrbit Torque Perpendicular Effective Field in Asymmetric Multilayers. Nanomaterials, 2022, 12, 1887.	1.9	4
71	Current induced magnetization switching in Pt/Co/Cr structures with enhanced perpendicular magnetic anisotropy and spin Hall effect. Applied Physics Express, 2019, 12, 043001.	1.1	3
72	Effect of CoFe dusting layer and annealing on the magnetic properties of sputtered Ta/W/CoFeB/CoFe/MgO layer structures. Journal Physics D: Applied Physics, 2020, 53, 105001.	1.3	3

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73	Electrical and optical characterizations of spin-orbit torque. Applied Physics Letters, 2021, 118, 072405.	1.5	3
74	Conversion between spin and charge currents in topological-insulator/nonmagnetic-metal systems. Physical Review B, 2021, 104, .	1.1	3
75	Investigating the influence of the depinning energy barrier on domain wall motion in perpendicularly magnetized Pt/Co/Cr/Ta multilayers. Journal of Magnetism and Magnetic Materials, 2020, 493, 165676.	1.0	2
76	Nonlocal ordinary magnetoresistance in indium arsenide. Journal of Magnetism and Magnetic Materials, 2015, 385, 292-294.	1.0	1
77	Direct observation of magnetism controlled by electric fields for CoFeB mesoscopic islands on PMN-PT. AIP Advances, 2019, 9, 055215.	0.6	1
78	Superconductivity: Pressure-Induced Metallization and Robust Superconductivity in Pristine 1T -SnSe2 (Adv. Electron. Mater. 8/2018). Advanced Electronic Materials, 2018, 4, 1870040.	2.6	0