

# Guoqiang Yu

## List of Publications by Year in descending order

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137  
papers

9,195  
citations

57719

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40954

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142  
all docs

142  
docs citations

142  
times ranked

6594  
citing authors

#	ARTICLE	IF	CITATIONS
1	Blowing magnetic skyrmion bubbles. <i>Science</i> , 2015, 349, 283-286.	6.0	1,177
2	Direct observation of the skyrmion Hall effect. <i>Nature Physics</i> , 2017, 13, 162-169.	6.5	858
3	Magnetization switching through giant spin-orbit torque in a magnetically doped topological insulator heterostructure. <i>Nature Materials</i> , 2014, 13, 699-704.	13.3	773
4	Switching of perpendicular magnetization by spin-orbit torques in the absence of external magnetic fields. <i>Nature Nanotechnology</i> , 2014, 9, 548-554.	15.6	753
5	Room-Temperature Creation and Spin-Orbit Torque Manipulation of Skyrmions in Thin Films with Engineered Asymmetry. <i>Nano Letters</i> , 2016, 16, 1981-1988.	4.5	275
6	Strong Rashba-Edelstein Effect-Induced Spin-Orbit Torques in Monolayer Transition Metal Dichalcogenide/Ferromagnet Bilayers. <i>Nano Letters</i> , 2016, 16, 7514-7520.	4.5	247
7	Current-driven magnetization switching in a van der Waals ferromagnet $\text{Fe}_3\text{GeTe}_2$ . <i>Science Advances</i> , 2019, 5, eaaw8904.	4.7	239
8	Room-Temperature Skyrmion Shift Device for Memory Application. <i>Nano Letters</i> , 2017, 17, 261-268.	4.5	227
9	Electric-field control of spin-orbit torque in a magnetically doped topological insulator. <i>Nature Nanotechnology</i> , 2016, 11, 352-359.	15.6	212
10	Proximity Induced High-Temperature Magnetic Order in Topological Insulator - Ferrimagnetic Insulator Heterostructure. <i>Nano Letters</i> , 2014, 14, 3459-3465.	4.5	192
11	Room temperature ferromagnetism in ultra-thin van der Waals crystals of $1\text{T-CrTe}_2$ . <i>Nano Research</i> , 2020, 13, 3358-3363.	5.8	175
12	Tailoring exchange couplings in magnetic topological-insulator/antiferromagnet heterostructures. <i>Nature Materials</i> , 2017, 16, 94-100.	13.3	137
13	Magnetization switching through spin-Hall-effect-induced chiral domain wall propagation. <i>Physical Review B</i> , 2014, 89, .	1.1	121
14	Temperature dependence of the voltage-controlled perpendicular anisotropy in nanoscale $\text{MgO} \text{CoFeB} \text{Ta}$ magnetic tunnel junctions. <i>Applied Physics Letters</i> , 2014, 104, .	1.5	119
15	Topological Hall effect at above room temperature in heterostructures composed of a magnetic insulator and a heavy metal. <i>Nature Electronics</i> , 2019, 2, 182-186.	13.1	117
16	High Spin Hall Conductivity in Large-Area Type-II Dirac Semimetal $\text{PtTe}_2$ . <i>Advanced Materials</i> , 2020, 32, e2000513.	11.1	117
17	Interfacial Dzyaloshinskii-Moriya Interaction: Effect of $\langle \mathbf{d} \rangle$ Band Filling and Correlation with Spin Mixing Conductance. <i>Physical Review Letters</i> , 2018, 120, 157204.	2.9	116
18	Electric-Field-Controlled Magnetoelectric RAM: Progress, Challenges, and Scaling. <i>IEEE Transactions on Magnetics</i> , 2015, 51, 1-7.	1.2	108

#	ARTICLE	IF	CITATIONS
19	Spin-orbit torques: Materials, physics, and devices. <i>Applied Physics Letters</i> , 2021, 118, .	1.5	100
20	Room-Temperature Skyrmions in an Antiferromagnet-Based Heterostructure. <i>Nano Letters</i> , 2018, 18, 980-986.	4.5	98
21	Magnon Valve Effect between Two Magnetic Insulators. <i>Physical Review Letters</i> , 2018, 120, 097205.	2.9	97
22	Enhancement of voltage-controlled magnetic anisotropy through precise control of Mg insertion thickness at CoFeB MgO interface. <i>Applied Physics Letters</i> , 2017, 110, .	1.5	92
23	Electric-field guiding of magnetic skyrmions. <i>Physical Review B</i> , 2015, 92, .	1.1	89
24	Role of dimensional crossover on spin-orbit torque efficiency in magnetic insulator thin films. <i>Nature Communications</i> , 2018, 9, 3612.	5.8	84
25	Spin-Orbit Torque Switching of a Nearly Compensated Ferrimagnet by Topological Surface States. <i>Advanced Materials</i> , 2019, 31, e1901681.	11.1	81
26	Magneto-optical investigation of spin-orbit torques in metallic and insulating magnetic heterostructures. <i>Nature Communications</i> , 2015, 6, 8958.	5.8	80
27	Strain-induced modulation of perpendicular magnetic anisotropy in Ta/CoFeB/MgO structures investigated by ferromagnetic resonance. <i>Applied Physics Letters</i> , 2015, 106, .	1.5	79
28	Dzyaloshinskii-Moriya Interaction across an Antiferromagnet-Ferromagnet Interface. <i>Physical Review Letters</i> , 2017, 119, 027202.	2.9	75
29	Anatomy of Skyrmionic Textures in Magnetic Multilayers. <i>Advanced Materials</i> , 2019, 31, e1807683.	11.1	75
30	Interfacial control of Dzyaloshinskii-Moriya interaction in heavy metal/ferromagnetic metal thin film heterostructures. <i>Physical Review B</i> , 2016, 94, .	1.1	72
31	Current-driven perpendicular magnetization switching in Ta/CoFeB/[TaOx or MgO/TaOx] films with lateral structural asymmetry. <i>Applied Physics Letters</i> , 2014, 105, .	1.5	71
32	Lattice Dynamics, Phonon Chirality, and Spin-Phonon Coupling in 2D Itinerant Ferromagnet $\text{Fe}_3\text{GeTe}_2$ . <i>Advanced Functional Materials</i> , 2019, 29, 1904734.	7.8	70
33	Creating zero-field skyrmions in exchange-biased multilayers through X-ray illumination. <i>Nature Communications</i> , 2020, 11, 949.	5.8	67
34	Magnetic memory driven by topological insulators. <i>Nature Communications</i> , 2021, 12, 6251.	5.8	67
35	Exchange-biasing topological charges by antiferromagnetism. <i>Nature Communications</i> , 2018, 9, 2767.	5.8	61
36	Spin-orbit torques in perpendicularly magnetized Ir <sub>22</sub> Mn <sub>78</sub> /Co <sub>20</sub> Fe <sub>60</sub> B <sub>20</sub> /MgO multilayer. <i>Applied Physics Letters</i> , 2016, 109, .	1.5	58

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37	Effect of the oxide layer on current-induced spin-orbit torques in Hf   CoFeB   MgO and Hf   CoFeB   TaOx structures. Applied Physics Letters, 2015, 106, .	1.5	55
38	Current-induced spin-orbit torque switching of perpendicularly magnetized Hf   CoFeB   MgO and Hf   CoFeB   TaOx structures. Applied Physics Letters, 2015, 106, .	1.5	55
39	Electric-Field Control of Spin-Orbit Interaction for Low-Power Spintronics. Proceedings of the IEEE, 2016, 104, 1974-2008.	16.4	53
40	Deterministic Spin-Orbit Torque Switching by a Light-Metal Insertion. Nano Letters, 2020, 20, 3703-3709.	4.5	52
41	Topology-Dependent Brownian Gyromotion of a Single Skyrmion. Physical Review Letters, 2020, 125, 027206.	2.9	50
42	Joule Heating Effect on Field-Free Magnetization Switching by Spin-Orbit Torque in Exchange-Biased Systems. Physical Review Applied, 2017, 7, .	1.5	48
43	Magnon valves based on YIG/NiO/YIG all-insulating magnon junctions. Physical Review B, 2018, 98, .	1.1	48
44	Thermally stable voltage-controlled perpendicular magnetic anisotropy in Mo   CoFeB   MgO structures. Applied Physics Letters, 2015, 107, .	1.5	47
45	Topological Transitions Induced by Antiferromagnetism in a Thin-Film Topological Insulator. Physical Review Letters, 2018, 121, 096802.	2.9	42
46	Evolution of topological skyrmions across the spin reorientation transition in Pt/Co/Ta multilayers. Physical Review B, 2018, 97, .	1.1	41
47	Proximity-Induced Magnetic Order in a Transferred Topological Insulator Thin Film on a Magnetic Insulator. ACS Nano, 2018, 12, 5042-5050.	7.3	41
48	Exploring interfacial exchange coupling and sublattice effect in heavy metal/ferrimagnetic insulator heterostructures using Hall measurements, x-ray magnetic circular dichroism, and neutron reflectometry. Physical Review B, 2019, 99, .	1.1	39
49	Mobile Néel skyrmions at room temperature: status and future. AIP Advances, 2016, 6, .	0.6	38
50	Spin-torque ferromagnetic resonance measurements utilizing spin Hall magnetoresistance in W/Co40Fe40B20/MgO structures. Applied Physics Letters, 2016, 109, .	1.5	36
51	Skyrmion-Based Programmable Logic Device with Complete Boolean Logic Functions. Physical Review Applied, 2021, 15, .	1.5	34
52	Effect of heavy metal layer thickness on spin-orbit torque and current-induced switching in Hf   CoFeB   MgO structures. Applied Physics Letters, 2016, 109, .	1.5	33
53	Enhanced voltage-controlled magnetic anisotropy in magnetic tunnel junctions with an MgO/PZT/MgO tunnel barrier. Applied Physics Letters, 2016, 108, .	1.5	32
54	Néel-Type Elliptical Skyrmions in a Laterally Asymmetric Magnetic Multilayer. Advanced Materials, 2021, 33, e2006924.	11.1	32

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55	Strain-Mediated Spin-Orbit-Torque Switching for Magnetic Memory. <i>Physical Review Applied</i> , 2018, 10, .	1.5	31
56	Control of Spin-Wave Damping in YIG Using Spin Currents from Topological Insulators. <i>Physical Review Applied</i> , 2019, 11, .	1.5	30
57	Electron Beam Lithography of Magnetic Skyrmions. <i>Advanced Materials</i> , 2020, 32, e2003003.	11.1	30
58	Colossal Anomalous Hall Effect in Ferromagnetic van der Waals $\text{CrTe}_2$ . <i>ACS Nano</i> , 2021, 15, 9759-9763.	7.3	30
59	1/f noise in MgO double-barrier magnetic tunnel junctions. <i>Applied Physics Letters</i> , 2011, 98, .	1.5	29
60	Exchange bias and spin-orbit torque in the $\text{Fe}_3\text{GeTe}_2$ -based heterostructures prepared by vacuum exfoliation approach. <i>Applied Physics Letters</i> , 2021, 118, .	1.5	27
61	Single-spin sensing of domain-wall structure and dynamics in a thin-film skyrmion host. <i>Physical Review Materials</i> , 2019, 3, .	0.9	27
62	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
63	Magnetic Skyrmions in a Hall Balance with Interfacial Canted Magnetizations. <i>Advanced Materials</i> , 2020, 32, e1907452.	11.1	26
64	Determining spin-torque efficiency in ferromagnetic metals via spin-torque ferromagnetic resonance. <i>Physical Review B</i> , 2020, 101, .	1.1	26
65	Enhancement of Spin-Orbit Torque by Strain Engineering in $\text{SrRuO}_3$ Films. <i>Advanced Functional Materials</i> , 2021, 31, 2100380.	7.8	26
66	Anomalous Nernst effect in $\text{Ir}_{22}\text{Mn}_{78}/\text{Co}_{20}\text{Fe}_{60}\text{B}_{20}/\text{MgO}$ layers with perpendicular magnetic anisotropy. <i>Applied Physics Letters</i> , 2017, 111, .	1.5	24
67	Deficiency of the bulk spin Hall effect model for spin-orbit torques in magnetic-insulator/heavy-metal heterostructures. <i>Physical Review B</i> , 2017, 95, 234407.	1.1	23
68	Spin-Torque Ferromagnetic Resonance in $\langle \mathbf{W} \rangle$		23
69	Efficient Excitation of High-Frequency Exchange-Dominated Spin Waves in Periodic Ferromagnetic Structures. <i>Physical Review Applied</i> , 2017, 7, .	1.5	22
70	Predictive Materials Design of Magnetic Random-Access Memory Based on Nanoscale Atomic Structure and Element Distribution. <i>Nano Letters</i> , 2019, 19, 8621-8629.	4.5	22
71	Characterization of Spin-Orbit Torque Efficiency in Magnetic Heterostructures with Perpendicular Magnetic Anisotropy via Spin-Torque Ferromagnetic Resonance. <i>Physical Review Applied</i> , 2020, 13, .	1.5	22
72	Competing effect of spin-orbit torque terms on perpendicular magnetization switching in structures with multiple inversion asymmetries. <i>Scientific Reports</i> , 2016, 6, 23956.	1.6	21

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73	Field-free Spin-orbit Torque Switching in Perpendicularly Magnetized Synthetic Antiferromagnets. <i>Advanced Functional Materials</i> , 2022, 32, 2109455.	7.8	21
74	Effects of annealing on the magnetic properties and microstructures of Ta/Mo/CoFeB/MgO/Ta films. <i>Journal of Alloys and Compounds</i> , 2017, 692, 243-248.	2.8	20
75	Perspectives on exfoliated two-dimensional spintronics. <i>Journal of Semiconductors</i> , 2019, 40, 081508.	2.0	20
76	Unidirectional Magneto-Resistance in Modulation-Doped Magnetic Topological Insulators. <i>Nano Letters</i> , 2019, 19, 692-698.	4.5	20
77	Observation of large anomalous Nernst effect in 2D layered materials Fe <sub>3</sub> GeTe <sub>2</sub> . <i>Applied Physics Letters</i> , 2019, 115, .	1.5	20
78	Direct imaging of an inhomogeneous electric current distribution using the trajectory of magnetic half-skyrmions. <i>Science Advances</i> , 2020, 6, eaay1876.	4.7	20
79	Creation of a Chiral Bobber Lattice in Helimagnet-Multilayer Heterostructures. <i>Physical Review Letters</i> , 2021, 126, 017204.	2.9	20
80	Magnetic two-dimensional van der Waals materials for spintronic devices*. <i>Chinese Physics B</i> , 2021, 30, 118504.	0.7	20
81	Field-free approaches for deterministic spin-orbit torque switching of the perpendicular magnet. <i>Materials Futures</i> , 2022, 1, 022201.	3.1	20
82	MRAM gets closer to the core. <i>Nature Electronics</i> , 2019, 2, 555-556.	13.1	17
83	Electric-field control of CoFeB/IrMn exchange bias system. <i>Journal of Applied Physics</i> , 2012, 112, .	1.1	16
84	Record thermopower found in an IrMn-based spintronic stack. <i>Nature Communications</i> , 2020, 11, 2023.	5.8	16
85	Two-terminal MRAM with a spin. <i>Nature Electronics</i> , 2018, 1, 496-497.	13.1	14
86	Generation and Hall effect of skyrmions enabled using nonmagnetic point contacts. <i>Physical Review B</i> , 2019, 100, .	1.1	14
87	Depth-Resolved Magnetization Dynamics Revealed by X-Ray Reflectometry Ferromagnetic Resonance. <i>Physical Review Letters</i> , 2020, 125, 137201.	2.9	14
88	Correlation between the Dzyaloshinskii-Moriya interaction and spin-mixing conductance at an antiferromagnet/ferromagnet interface. <i>Physical Review B</i> , 2018, 98, .	1.1	13
89	Spin-orbit torques in structures with asymmetric damping layers. <i>Applied Physics Letters</i> , 2020, 117, 182403.	1.5	13
90	Implementation of Highly Reliable and Energy-efficient Nonvolatile In-memory Computing using Multistate Domain Wall Spin-orbit Torque Device. <i>Advanced Intelligent Systems</i> , 2022, 4, .	3.3	13

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91	Improved tunneling magnetoresistance in (Ga,Mn)As/AlOx/CoFeB magnetic tunnel junctions. Applied Physics Letters, 2011, 98, 262501.	1.5	12
92	Field sensing in MgO double barrier magnetic tunnel junctions with a superparamagnetic Co50Fe50 free layer. Journal of Applied Physics, 2012, 111, 113906.	1.1	12
93	Electrical detection of spin transport in Si two-dimensional electron gas systems. Nanotechnology, 2016, 27, 365701.	1.3	12
94	Robust Skyrmion Shift Device Through Engineering the Local Exchange-Bias Field. Physical Review Applied, 2020, 14, .	1.5	12
95	Spin transmission in IrMn through measurements of spin Hall magnetoresistance and spin-orbit torque. Physical Review B, 2020, 101, .	1.1	11
96	Gradual magnetization switching via domain nucleation driven by spin-orbit torque. Applied Physics Letters, 2021, 118, 032407.	1.5	11
97	Field free magnetization switching in perpendicularly magnetized Pt/Co/FeNi/Ta structure by spin orbit torque. Applied Physics Letters, 2020, 117, .	1.5	10
98	Superposition of Emergent Monopole and Antimonopole in CoTb Thin Films. Physical Review Letters, 2021, 127, 217201.	2.9	10
99	High-Sensitivity Tunnel Magnetoresistance Sensors Based on Double Indirect and Direct Exchange Coupling Effect*. Chinese Physics Letters, 2021, 38, 128501.	1.3	10
100	Fabrication and characterization of YIG nanotubes. Journal of Magnetism and Magnetic Materials, 2019, 482, 358-363.	1.0	9
101	Formation and magnetic-field stability of magnetic dipole skyrmions and bubbles in a ferrimagnet. Applied Physics Letters, 2020, 116, .	1.5	9
102	Tunneling processes in asymmetric double barrier magnetic tunnel junctions with a thin top MgO layer. Journal of Applied Physics, 2013, 114, 213909.	1.1	8
103	Influence of inserted Mo layer on the thermal stability of perpendicularly magnetized Ta/Mo/Co20Fe60B20/MgO/Ta films. AIP Advances, 2016, 6, .	0.6	8
104	Interfacial spin transmission and spin-orbit torques in as-grown and annealed W/Co2FeAl/MgO multilayers. Applied Physics Letters, 2020, 117, .	1.5	8
105	Study of the perpendicular magnetic anisotropy, spin-orbit torque, and Dzyaloshinskii-Moriya interaction in the heavy metal/CoFeB bilayers with Ir22Mn78 insertion. Applied Physics Letters, 2020, 116, 242407.	1.5	8
106	Magnetic Configurations and State Diagram of Nanoring Magnetic Tunnel Junctions. Physical Review Applied, 2018, 10, .	1.5	7
107	Soft X-ray Ptychography for Imaging of Magnetic Domains and Skyrmions in Sub-100 nm Scales. Microscopy and Microanalysis, 2018, 24, 34-35.	0.2	6
108	Enhancement of the spin-orbit torque efficiency in W/Cu/CoFeB heterostructures via interface engineering. Applied Physics Letters, 2020, 117, 082409.	1.5	6

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109	High voltage-controlled magnetic anisotropy and interface magnetoelectric effect in sputtered multilayers annealed at high temperatures. <i>Science China: Physics, Mechanics and Astronomy</i> , 2020, 63, 1.	2.0	6
110	Chirality-Reversible Multistate Switching via Two Orthogonal Spin-Orbit Torques in a Perpendicularly Magnetized System. <i>Physical Review Applied</i> , 2020, 13, .	1.5	6
111	The influence of an MgO nanolayer on the planar Hall effect in NiFe films. <i>Journal of Applied Physics</i> , 2015, 117, .	1.1	5
112	Implementation of complete Boolean logic functions in single spin-orbit torque device. <i>AIP Advances</i> , 2021, 11, .	0.6	5
113	Efficient Spin-Orbit-Torque Switching Assisted by an Effective Perpendicular Field in a Magnetic Trilayer. <i>Physical Review Applied</i> , 2021, 16, .	1.5	5
114	Role of an in-plane ferromagnet in a T-type structure for field-free magnetization switching. <i>Applied Physics Letters</i> , 2022, 120, .	1.5	5
115	Antiferromagnetic-Metal/Ferromagnetic-Metal Periodic Multilayers for On-Chip Thermoelectric Generation. <i>Physical Review Applied</i> , 2022, 17, .	1.5	5
116	Spin-dependent tunneling spectroscopy in MgO-based double-barrier magnetic tunnel junctions. <i>Journal of Applied Physics</i> , 2012, 111, 07C712.	1.1	4
117	Versatile Fabrication of Self-Aligned Nanoscale Hall Devices Using Nanowire Masks. <i>Nano Letters</i> , 2016, 16, 3109-3115.	4.5	4
118	Interface control of domain wall depinning field. <i>AIP Advances</i> , 2018, 8, .	0.6	4
119	Large Room Temperature Charge-to-Spin Conversion Efficiency in Topological Insulator/CoFeB bilayers. , 2018, , .		4
120	Enhanced spin-orbit torque efficiency in Pt <sub>100</sub> Ni <sub>x</sub> alloy based magnetic bilayer*. <i>Chinese Physics B</i> , 2021, 30, 037503.	0.7	4
121	Comprehensive Study of the Current-Induced Spin-Orbit Torque Perpendicular Effective Field in Asymmetric Multilayers. <i>Nanomaterials</i> , 2022, 12, 1887.	1.9	4
122	PATTERNED NANOSCALE MAGNETIC TUNNEL JUNCTIONS WITH DIFFERENT GEOMETRICAL STRUCTURES. <i>Spin</i> , 2011, 01, 109-114.	0.6	3
123	MgO-Based Double Barrier Magnetic Tunnel Junctions With Synthetic Antiferromagnetic Free Layer. <i>IEEE Transactions on Magnetics</i> , 2013, 49, 5204-5207.	1.2	3
124	Conductance enhancement due to interface magnons in electron-beam evaporated MgO magnetic tunnel junctions with CoFeB free layer deposited at different pressure. <i>Journal of Applied Physics</i> , 2014, 116, .	1.1	3
125	Field-free spin-orbit torque driven multi-state reversal in wedged Ta/MgO/CoFeB/MgO heterostructures. <i>APL Materials</i> , 2021, 9, 071108.	2.2	3
126	Anomalous anisotropic spin-wave propagation in thin manganite films with uniaxial magnetic anisotropy. <i>Applied Physics Letters</i> , 2022, 120, .	1.5	3



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127	Materials, physics, and devices of spin-orbit torque effect. Applied Physics Letters, 2021, 118, 180401.	1.5	2
128	Skyrmions in magnetic thin film heterostructures. Wuli Xuebao/Acta Physica Sinica, 2018, 67, 131204.	0.2	2
129	Current controlled non-hysteresis magnetic switching in the absence of magnetic field. Applied Physics Letters, 2022, 120, 062402.	1.5	2
130	Axially Bound Magnetic Skyrmions: Glueing Topological Strings Across an Interface. Nano Letters, 2022, 22, 3737-3743.	4.5	2
131	Type-Y magnetic tunnel junctions with CoFeB doped tungsten as spin current source. Applied Physics Letters, 2022, 120, .	1.5	2
132	SUPERCONDUCTIVITY-INDUCED PINNING EFFECT IN SUPERCONDUCTOR/MAGNETIC TUNNEL JUNCTIONS. Spin, 2013, 03, 1350006.	0.6	1
133	Ferromagnetic resonance linewidth broadening induced by a tunable inhomogeneity effect. Journal of Magnetism and Magnetic Materials, 2021, 517, 167215.	1.0	1
134	Twisted light induced magnetic anisotropy changes in an interlayer exchange coupling system. Nanoscale Horizons, 2021, 6, 462-467.	4.1	1
135	Field-free programmable spin logics based on spin Hall effect. Applied Physics Letters, 2021, 119, .	1.5	1
136	Narrow-Band Semiconductor Heterostructures for Efficient Spintronic Memory Device Applications. , 2021, , .		1
137	Room-temperature skyrmion shift device for memory application (Conference Presentation). , 2017, , .		0