Aurelien Manchon

List of Publications by Year
in descending order

150	12,703	53794 45	23533 111
papers	citations	h-index	g-index

153	153	153	9196
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Antiferromagnetic spintronics. Reviews of Modern Physics, 2018, 90, .	45.6	1,536
2	New perspectives for Rashba spinâ€“orbit coupling. Nature Materials, 2015, 14, 871-882.	27.5	1,438
3	Spin-transfer torque generated by a topological insulator. Nature, 2014, 511, 449-451.	27.8	1,134
4	Current-induced spin-orbit torques in ferromagnetic and antiferromagnetic systems. Reviews of Modern Physics, 2019, 91, .	45.6	899
5	First principles investigation of the very large perpendicular magnetic anisotropy at Fe<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mo>|</mml:mo></mml:mrow></mml:math>MgO and Co<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mo>|</mml:mo></mml:mrow></mml:math>MgO interfaces. Physical Review B, 2011, 84, .	3.2	545
6	Theory of nonequilibrium intrinsic spin torque in a single nanomagnet. Physical Review B, 2008, 78, .	3.2	423
7	Current induced torques and interfacial spin-orbit coupling: Semiclassical modeling. Physical Review B, 2013, 87, .	3.2	420
8	Theory of spin torque due to spin-orbit coupling. Physical Review B, 2009, 79, .	3.2	385
9	Relativistic NÃ©el-Order Fields Induced by Electrical Current in Antiferromagnets. Physical Review Letters, 2014, 113, 157201.	7.8	377
10	The multiple directions of antiferromagnetic spintronics. Nature Physics, 2018, 14, 200-203.	16.7	365
11	Room-temperature high spinâ€“orbit torque due to quantum confinement in sputtered BixSe(1â€“x) films. Nature Materials, 2018, 17, 800-807.	27.5	344
12	Diffusive Spin Dynamics in Ferromagnetic Thin Films with a Rashba Interaction. Physical Review Letters, 2012, 108, 117201.	7.8	219
13	Analysis of oxygen induced anisotropy crossover in Pt/Co/MOx trilayers. Journal of Applied Physics, 2008, 104, .	2.5	200
14	Bias-voltage dependence of perpendicular spin-transfer torque in asymmetric MgO-based magnetic tunnel junctions. Nature Physics, 2009, 5, 898-902.	16.7	193
15	Hundâ€™s Rule-Driven Dzyaloshinskii-Moriya Interaction at<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mn>3</mml:mn><mml:mi>d</mml:mi><mml:mtext>â”</mml:mtext><mml:mn>5</mml:mn><mml:mi> Physical Review Letters, 2016, 117, 247202.	7.8	163
16	Symmetry-dependent field-free switching of perpendicular magnetization. Nature Nanotechnology, 2021, 16, 277-282.	31.5	145
17	Influence of thermal annealing on the perpendicular magnetic anisotropy of Pt/Co/AlOx trilayers. Physical Review B, 2009, 79, .	3.2	136
18	Spin-Orbit Torques in Co/Pd Multilayer Nanowires. Physical Review Letters, 2013, 111, 246602.	7.8	135

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19	Quantum spin/valley Hall effect and topological insulator phase transitions in silicene. Applied Physics Letters, 2013, 102, .	3.3	124
20	Current-induced torques and interfacial spin-orbit coupling. Physical Review B, 2013, 88, .	3.2	121
21	Spin-orbit torques in locally and globally noncentrosymmetric crystals: Antiferromagnets and ferromagnets. Physical Review B, 2017, 95, .	3.2	113
22	The 2021 quantum materials roadmap. JPhys Materials, 2020, 3, 042006.	4.2	111
23	Spin-momentum locking and spin-orbit torques in magnetic nano-heterojunctions composed of Weyl semimetal WTe2. Nature Communications, 2018, 9, 3990.	12.8	105
24	Enhanced Spin-Orbit Torque via Modulation of Spin Current Absorption. Physical Review Letters, 2016, 117, 217206.	7.8	104
25	Chiral damping of magnetic domain walls. Nature Materials, 2016, 15, 272-277.	27.5	99
26	Performance of synthetic antiferromagnetic racetrack memory: domain wall versus skyrmion. Journal Physics D: Applied Physics, 2017, 50, 325302.	2.8	86
27	Spin orbit torques and Dzyaloshinskii-Moriya interaction in dual-interfaced Co-Ni multilayers. Scientific Reports, 2016, 6, 32629.	3.3	75
28	Oxygen-enabled control of Dzyaloshinskii-Moriya Interaction in ultra-thin magnetic films. Scientific Reports, 2016, 6, 24634.	3.3	74
29	Dirac spin-orbit torques and charge pumping at the surface of topological insulators. Physical Review B, 2017, 96, .	3.2	70
30	Effects of surface and interface scattering on anomalous Hall effect in Co/Pd multilayers. Physical Review B, 2012, 86, .	3.2	68
31	Bulk Spin Torqueâ€Driven Perpendicular Magnetization Switching in L1₀ FePt Single Layer. Advanced Materials, 2020, 32, e2002607.	21.0	66
32	Intraband and interband spin-orbit torques in noncentrosymmetric ferromagnets. Physical Review B, 2015, 91, .	3.2	64
33	Angular dependence of spin-orbit spin-transfer torques. Physical Review B, 2015, 91, .	3.2	63
34	Theory of the Topological Spin Hall Effect in Antiferromagnetic Skyrmions: Impact on Current-Induced Motion. Physical Review Letters, 2018, 121, 097204.	7.8	60
35	Correlation of the Dzyaloshinskiiâ€“Moriya interaction with Heisenberg exchange and orbital asphericity. Nature Communications, 2018, 9, 1648.	12.8	60
36	Spin-orbit torque in a three-dimensional topological insulatorâ€“ferromagnet heterostructure: Crossover between bulk and surface transport. Physical Review B, 2018, 97, .	3.2	59

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37	X-ray analysis of the magnetic influence of oxygen in Ptâ^•Coâ^•AlOx trilayers. Journal of Applied Physics, 2008, 103, 07A912.	2.5	55
38	Photoinduced quantum spin and valley Hall effects, and orbital magnetization in monolayer<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>MoS</mml:mi><mml:mn>2</mml:mn></mml:msub></mm Physical Review B, 2014, 90, .	3.2	55
39	Spin-torque generation in topological insulator based heterostructures. Physical Review B, 2016, 93, .	3.2	54
40	Interface-based tuning of Rashba spin-orbit interaction in asymmetric oxide heterostructures with 3d electrons. Nature Communications, 2019, 10, 3052.	12.8	51
41	Spin-Swapping Transport and Torques in Ultrathin Magnetic Bilayers. Physical Review Letters, 2016, 117, 036601.	7.8	50
42	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>k</mml:mi></mml:math>-asymmetric spin splitting at the interface between transition metal ferromagnets and heavy metals. Physical Review B, 2016, 93, .	3.2	48
43	Theory of laser-induced demagnetization at high temperatures. Physical Review B, 2012, 85, .	3.2	47
44	Topological Hall and spin Hall effects in disordered skyrmionic textures. Physical Review B, 2017, 95, .	3.2	46
45	Spin Hall and Spin Swapping Torques in Diffusive Ferromagnets. Physical Review Letters, 2018, 120, 176802.	7.8	46
46	Spin transfer torque in antiferromagnetic spin valves: From clean to disordered regimes. Physical Review B, 2014, 89, .	3.2	45
47	Magnetism in Sc-doped ZnO with zinc vacancies: A hybrid density functional and GGA+U approaches. Chemical Physics Letters, 2012, 532, 96-99.	2.6	43
48	A new moment for Berry. Nature Physics, 2014, 10, 340-341.	16.7	43
49	Description of current-driven torques in magnetic tunnel junctions. Journal of Physics Condensed Matter, 2008, 20, 145208.	1.8	40
50	A self-consistent spin-diffusion model for micromagnetics. Scientific Reports, 2016, 6, 16.	3.3	40
51	Temperature dependence of spin-orbit torques in Cu-Au alloys. Physical Review B, 2017, 95, .	3.2	39
52	Ab initio investigation on the magnetic ordering in Gd doped ZnO. Journal of Applied Physics, 2011, 109, 083929.	2.5	37
53	Topological aspects of antiferromagnets. Journal Physics D: Applied Physics, 2022, 55, 103002.	2.8	36
54	Enhancement of spin Hall effect induced torques for current-driven magnetic domain wall motion: Inner interface effect. Physical Review B, 2016, 93, .	3.2	35

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55	Phenomenology of chiral damping in noncentrosymmetric magnets. Physical Review B, 2016, 93, .	3.2	33
56	Controlling the deformation of antiferromagnetic skyrmions in the high-velocity regime. Physical Review B, 2020, 101, .	3.2	33
57	Current-induced self-switching of perpendicular magnetization in CoPt single layer. Nature Communications, 2022, 13, .	12.8	33
58	Magnon-mediated Dzyaloshinskii-Moriya torque in homogeneous ferromagnets. Physical Review B, 2014, 90, .	3.2	32
59	Spin-orbit-coupled transport and spin torque in a ferromagnetic heterostructure. Physical Review B, 2014, 89, .	3.2	32
60	Spin Hall magnetoresistance in antiferromagnet/normal metal bilayers. Physica Status Solidi - Rapid Research Letters, 2017, 11, 1600409.	2.4	32
61	Elusive Dzyaloshinskii-Moriya interaction in monolayer <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Fe</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math> Physical Review B, 2020, 102, .	3.2	32
62	Modelling spin transfer torque and magnetoresistance in magnetic multilayers. Journal of Physics Condensed Matter, 2007, 19, 165212.	1.8	31
63	Spin diffusion and torques in disordered antiferromagnets. Journal of Physics Condensed Matter, 2017, 29, 104002.	1.8	31
64	Angular dependence and symmetry of Rashba spin torque in ferromagnetic heterostructures. Applied Physics Letters, 2013, 102, .	3.3	30
65	Enhanced Nonadiabaticity in Vortex Cores due to the Emergent Hall Effect. Physical Review Letters, 2016, 117, 277203.	7.8	29
66	X-ray analysis of oxygen-induced perpendicular magnetic anisotropy in trilayers. Journal of Magnetism and Magnetic Materials, 2008, 320, 1889-1892.	2.3	28
67	Spin-Orbitronics at Transition Metal Interfaces. Solid State Physics, 2017, 68, 1-89.	0.5	28
68	Ferromagnet-Free All-Electric Spin Hall Transistors. Nano Letters, 2018, 18, 7998-8002.	9.1	27
69	Nonreciprocal charge transport up to room temperature in bulk Rashba semiconductor Î±-GeTe. Nature Communications, 2021, 12, 540.	12.8	27
70	Peculiarities of spin polarization inversion at a thiophene/cobalt interface. Applied Physics Letters, 2013, 102, .	3.3	26
71	Anomalous Hall effect in Fe/Au multilayers. Physical Review B, 2016, 94, .	3.2	26
72	Current-driven skyrmion depinning in magnetic granular films. Physical Review B, 2019, 99, .	3.2	26

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73	Analytical description of ballistic spin currents and torques in magnetic tunnel junctions. Physical Review B, 2015, 92, .	3.2	25
74	Spin diffusion in bulk GaN measured with MnAs spin injector. Physical Review B, 2012, 86, .	3.2	24
75	Spin-Hall conductivity and electric polarization in metallic thin films. Physical Review B, 2013, 87, .	3.2	24
76	Spin Relaxation in InGaN Quantum Disks in GaN Nanowires. Nano Letters, 2011, 11, 5396-5400.	9.1	23
77	Role of spin diffusion in current-induced domain wall motion for disordered ferromagnets. Physical Review B, 2015, 91, .	3.2	23
78	Spin-orbit torque in two-dimensional antiferromagnetic topological insulators. Physical Review B, 2017, 95, .	3.2	23
79	Tunable magnetic anisotropy in Crâ€“trihalide Janus monolayers. Journal of Physics Condensed Matter, 2020, 32, 355702.	1.8	21
80	Spin transfer torque with spin diffusion in magnetic tunnel junctions. Physical Review B, 2012, 86, .	3.2	20
81	Direct imaging of an inhomogeneous electric current distribution using the trajectory of magnetic half-skyrmions. Science Advances, 2020, 6, eaay1876.	10.3	20
82	Control of spinâ€“charge conversion in van der Waals heterostructures. APL Materials, 2021, 9, .	5.1	20
83	Thermal variation of current perpendicular-to-plane giant magnetoresistance in laminated and nonlaminated spin valves. Journal of Applied Physics, 2006, 100, 013912.	2.5	19
84	Signatures of asymmetric and inelastic tunneling on the spin torque bias dependence. Physical Review B, 2010, 82, .	3.2	19
85	Dephasing of transverse spin current in ferrimagnetic alloys. Physical Review B, 2021, 103, .	3.2	19
86	Unconventional Robust Spin-Transfer Torque in Noncollinear Antiferromagnetic Junctions. Physical Review Letters, 2022, 128, 097702.	7.8	18
87	Pauli Spin Blockade and the Ultrasmall Magnetic Field Effect. Physical Review Letters, 2013, 111, 066802.	7.8	17
88	Current-Induced Magnetization Switching Across a Nearly Room-Temperature Compensation Point in an Insulating Compensated Ferrimagnet. ACS Nano, 2022, 16, 8181-8189.	14.6	17
89	Ferromagnetism carried by highly delocalized hybrid states in Sc-doped ZnO thin films. Applied Physics Letters, 2012, 100, 222406.	3.3	16
90	Intrinsic nonadiabatic topological torque in magnetic skyrmions and vortices. Physical Review B, 2017, 95, .	3.2	16

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91	Robust spin transfer torque in antiferromagnetic tunnel junctions. Physical Review B, 2017, 95, .	3.2	16
92	Interfacial spin-orbit splitting and current-driven spin torque in anisotropic tunnel junctions. Physical Review B, 2011, 83, .	3.2	15
93	Tailoring spin-orbit torque in diluted magnetic semiconductors. Applied Physics Letters, 2013, 102, 192411.	3.3	15
94	Valley-dependent spin-orbit torques in two-dimensional hexagonal crystals. Physical Review B, 2016, 93, .	3.2	15
95	Symmetrized decomposition of the Kubo-Bastin formula. Physical Review B, 2020, 102, .	3.2	15
96	Interpretation of relationship between current perpendicular to plane magnetoresistance and spin torque amplitude. Physical Review B, 2006, 73, .	3.2	14
97	Spin-polarization reversal at the interface between benzene and Fe(100). Journal of Applied Physics, 2013, 113, .	2.5	13
98	Janus monolayers of magnetic transition metal dichalcogenides as an all-in-one platform for spin-orbit torque. Physical Review B, 2021, 104, .	3.2	13
99	Effect of surface roughness on the anomalous Hall effect in Fe thin films. Physical Review B, 2020, 101, .	3.2	12
100	Spin-dependent diffraction at ferromagnetic/spin spiral interface. Journal of Applied Physics, 2008, 103, 07A721.	2.5	11
101	Influence of interfacial magnons on spin transfer torque in magnetic tunnel junctions. Physical Review B, 2009, 79, .	3.2	11
102	Enhanced thermoelectric power in ultrathin topological insulators with magnetic doping. Journal of Applied Physics, 2014, 116, 093708.	2.5	11
103	Spin-transfer torque in spin filter tunnel junctions. Physical Review B, 2014, 90, .	3.2	11
104	Crossover between spin swapping and Hall effect in disordered systems. Physical Review B, 2015, 92, .	3.2	11
105	Prediction of femtosecond oscillations in the transient current of a quantum dot in the Kondo regime. Physical Review B, 2010, 82, .	3.2	10
106	Spin Hall effect-driven spin torque in magnetic textures. Applied Physics Letters, 2011, 99, 022504.	3.3	10
107	Nonequilibrium spin density and spin-orbit torque in a three-dimensional topological insulator/antiferromagnet heterostructure. Physical Review B, 2019, 100, .	3.2	10
108	Quantum anomalous Hall effect and Anderson-Chern insulating regime in the noncollinear antiferromagnetic 3Q state. Physical Review B, 2019, 100, .	3.2	10

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109	Unidirectional Magnon-Driven Domain Wall Motion Due to the Interfacial Dzyaloshinskii-Moriya Interaction. Physical Review Letters, 2019, 122, 147202.	7.8	10
110	Semirealistic tight-binding model for spin-orbit torques. Physical Review B, 2020, 101, .	3.2	10
111	Controlling the spin-torque efficiency with ferroelectric barriers. Physical Review B, 2015, 91, .	3.2	9
112	Cooperative Charge Pumping and Enhanced Skyrmion Mobility. Physical Review Letters, 2018, 121, 257203.	7.8	9
113	Unconventional Spin Pumping and Magnetic Damping in an Insulating Compensated Ferrimagnet. Advanced Materials, 2022, 34, e2200019.	21.0	9
114	Rashbaâ€“Edelstein Effect in the hâ€BN Van Der Waals Interface for Magnetization Switching. Advanced Materials, 2022, 34, .	21.0	9
115	Generalization of a circuit theory for current perpendicular to plane magnetoresistance and current-driven torque. Physical Review B, 2006, 73, .	3.2	8
116	Anomalous Hall effect and magnetoresistance behavior in Co/Pd1â^'xAgx multilayers. Applied Physics Letters, 2013, 102, .	3.3	8
117	Two-Dimensional Electron Gas at the Spinel/Perovskite Interface: Suppression of Polar Catastrophe by an Ultrathin Layer of Interfacial Defects. ACS Applied Materials & Interfaces, 2020, 12, 42982-42991.	8.0	7
118	Topological phase transition and thermal Hall effect in kagome ferromagnets. Physical Review B, 2021, 104, .	3.2	7
119	Publisher's Note: Theory of spin torque due to spin-orbit coupling [Phys. Rev. B79, 094422 (2009)]. Physical Review B, 2009, 79, .	3.2	6
120	Phonon-magnon resonant processes with relevance to acoustic spin pumping. Physical Review B, 2014, 90, .	3.2	6
121	Resonant longitudinalZitterbewegungin zigzag graphene nanoribbons. Physical Review B, 2015, 91, .	3.2	6
122	Competition between Electronic and Magnonic Spin Currents in Metallic Antiferromagnets. Physical Review Applied, 2019, 12, .	3.8	6
123	Spin-orbit torques in a Rashba honeycomb antiferromagnet. Physical Review B, 2019, 100, .	3.2	6
124	Induced spin textures at <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>3</mml:mn><mml:mi>d</mml:mi></mml:mrow></mml:r transition metalâ€“topological insulator interfaces. Physical Review B, 2020, 101, .	3.2	6
125	Skyrmion battery effect via inhomogeneous magnetic anisotropy. Applied Physics Reviews, 2021, 8, .	11.3	6
126	Spin-orbit coupling induced ultrahigh-harmonic generation from magnetic dynamics. Physical Review B, 2022, 105, .	3.2	6

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127	Role of the chemical bonding for the time-dependent electron transport through an interacting quantum dot. Chemical Physics Letters, 2011, 509, 48-50.	2.6	5
128	Steady motion of skyrmions and domains walls under diffusive spin torques. Physical Review B, 2017, 95, .	3.2	5
129	Tunable spin-charge conversion through topological phase transitions in zigzag nanoribbons. Physical Review B, 2016, 93, .	3.2	4
130	Crossover from diffusive to superfluid transport in frustrated magnets. Physical Review B, 2021, 103, .	3.2	4
131	Topological thermal Hall effect and magnonic edge states in kagome ferromagnets with bond anisotropy. New Journal of Physics, 2022, 24, 023033.	2.9	4
132	Emerging materials for spinâ€“charge interconversion. APL Materials, 2021, 9, 120401.	5.1	4
133	Theoretical investigation of the relationship between spin torque and magnetoresistance in spin-valves and magnetic tunnel junctions. Journal of Magnetism and Magnetic Materials, 2007, 316, e977-e979.	2.3	3
134	Spin Polarization Without Net Magnetization. Physics Magazine, 0, 13, .	0.1	3
135	Spin transport in multilayer graphene away from the charge neutrality point. Carbon, 2021, 172, 474-479.	10.3	3
136	Semirealistic tight-binding model for Dzyaloshinskii-Moriya interaction. Physical Review B, 2020, 102, .	3.2	3
137	Competition between Chiral Energy and Chiral Damping in the Asymmetric Expansion of Magnetic Bubbles. ACS Applied Electronic Materials, 2021, 3, 4734-4742.	4.3	3
138	Magnonic Metamaterials for Spin-Wave Control with Inhomogeneous Dzyaloshinskiiâ€“Moriya Interactions. Nanomaterials, 2022, 12, 1159.	4.1	3
139	Rashba diamond in an Aharonov-Casher ring. Applied Physics Letters, 2011, 99, 142507.	3.3	2
140	Voltage-Driven Versus Current-Driven Spin Torque in Anisotropic Tunneling Junctions. IEEE Transactions on Magnetics, 2011, 47, 2735-2738.	2.1	2
141	Rashba spinâ€“orbit coupling in two-dimensional systems. , 2020, , 25-64.		2
142	Unified formulation of interfacial magnonic pumping from noncollinear magnets. Physical Review B, 2022, 105, .	3.2	2
143	Theory of Rashba Torques. , 2017, , .		1
144	Currents and torques due to spin-dependent diffraction in ferromagnetic/spin spiral bilayers. Journal of Physics Condensed Matter, 2008, 20, 505213.	1.8	0

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145	Manipulating the voltage dependence of tunneling spin torques. , 2012, , .		0
146	Publisher's Note: Spin transfer torque in antiferromagnetic spin valves: From clean to disordered regimes [Phys. Rev. B89, 174430 (2014)]. Physical Review B, 2014, 90, .	3.2	0
147	Antiferromagnetic spin-orbitronics. , 2015, , .		0
148	Signature of Topological Phases in Zitterbewegung. Spin, 2016, 06, 1640004.	1.3	0
149	Development of a Multi-kHz Optical Bench for Nonlinear Optical Diagnostic. , 2005, , .		0
150	Development of a Multi-kHz Optical Bench for Nonlinear Optical Diagnostic. , 2005, , .		0