Aurelien Manchon

List of Publications by Citations

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132 papers	8,727 citations	37 h-index	92 g-index
153 ext. papers	10,884 ext. citations	6.7 avg, IF	6.55 L-index

#	Paper	IF	Citations
132	New perspectives for Rashba spin-orbit coupling. *Nature Materials*, **2015**, 14, 871-82	27	970
131	Spin-transfer torque generated by a topological insulator. *Nature*, **2014**, 511, 449-51	50.4	851
130	Antiferromagnetic spintronics. *Reviews of Modern Physics*, **2018**, 90,	40.5	847
129	First-principles investigation of the very large perpendicular magnetic anisotropy at Fe|MgO and Co|MgO interfaces. *Physical Review B*, **2011**, 84,	3.3	450
128	Current-induced spin-orbit torques in ferromagnetic and antiferromagnetic systems. *Reviews of Modern Physics*, **2019**, 91,	40.5	418
127	Theory of nonequilibrium intrinsic spin torque in a single nanomagnet. *Physical Review B*, **2008**, 78,	3.3	370
126	Current induced torques and interfacial spin-orbit coupling: Semiclassical modeling. *Physical Review B*, **2013**, 87,	3.3	341
125	Theory of spin torque due to spin-orbit coupling. *Physical Review B*, **2009**, 79,	3.3	330
124	Relativistic N�el-order fields induced by electrical current in antiferromagnets. *Physical Review Letters*, **2014**, 113, 157201	7.4	263
123	Room-temperature high spin-orbit torque due to quantum confinement in sputtered BiSe films. *Nature Materials*, **2018**, 17, 800-807	27	214
122	Diffusive spin dynamics in ferromagnetic thin films with a Rashba interaction. *Physical Review Letters*, **2012**, 108, 117201	7.4	197
121	Bias-voltage dependence of perpendicular spin-transfer torque in asymmetric MgO-based magnetic tunnel junctions. *Nature Physics*, **2009**, 5, 898-902	16.2	178
120	Analysis of oxygen induced anisotropy crossover in Pt/Co/MOx trilayers. *Journal of Applied Physics*, **2008**, 104, 043914	2.5	176
119	Influence of thermal annealing on the perpendicular magnetic anisotropy of Pt/Co/AlOx trilayers. *Physical Review B*, **2009**, 79,	3.3	117
118	Spin-orbit torques in Co/Pd multilayer nanowires. *Physical Review Letters*, **2013**, 111, 246602	7.4	108
117	Quantum spin/valley Hall effect and topological insulator phase transitions in silicene. *Applied Physics Letters*, **2013**, 102, 162412	3.4	107
116	Current-induced torques and interfacial spin-orbit coupling. *Physical Review B*, **2013**, 88,	3.3	107

115	Hund's Rule-Driven Dzyaloshinskii-Moriya Interaction at 3d-5d Interfaces. *Physical Review Letters*, **2016**, 117, 247202	7.4	105
114	Enhanced Spin-Orbit Torque via Modulation of Spin Current Absorption. *Physical Review Letters*, **2016**, 117, 217206	7.4	83
113	Chiral damping of magnetic domain walls. *Nature Materials*, **2016**, 15, 272-7	27	82
112	Spin-orbit torques in locally and globally noncentrosymmetric crystals: Antiferromagnets and ferromagnets. *Physical Review B*, **2017**, 95,	3.3	75
111	Spin-momentum locking and spin-orbit torques in magnetic nano-heterojunctions composed of Weyl semimetal WTe. *Nature Communications*, **2018**, 9, 3990	17.4	64
110	Angular dependence of spin-orbit spin-transfer torques. *Physical Review B*, **2015**, 91,	3.3	60
109	Oxygen-enabled control of Dzyaloshinskii-Moriya Interaction in ultra-thin magnetic films. *Scientific Reports*, **2016**, 6, 24634	4.9	57
108	Effects of surface and interface scattering on anomalous Hall effect in Co/Pd multilayers. *Physical Review B*, **2012**, 86,	3.3	56
107	Spin orbit torques and Dzyaloshinskii-Moriya interaction in dual-interfaced Co-Ni multilayers. *Scientific Reports*, **2016**, 6, 32629	4.9	55
106	Intraband and interband spin-orbit torques in noncentrosymmetric ferromagnets. *Physical Review B* , **2015**, 91,	3.3	55
105	Performance of synthetic antiferromagnetic racetrack memory: domain wall versus skyrmion. *Journal Physics D: Applied Physics*, **2017**, 50, 325302	3	54
104	Dirac spin-orbit torques and charge pumping at the surface of topological insulators. *Physical Review B*, **2017**, 96,	3.3	48
103	The 2021 quantum materials roadmap. *JPhys Materials*, **2020**, 3, 042006	4.2	48
102	X-ray analysis of the magnetic influence of oxygen in Pt/Co/AlOx trilayers. *Journal of Applied Physics*, **2008**, 103, 07A912	2.5	47
101	Spin-torque generation in topological insulator based heterostructures. *Physical Review B*, **2016**, 93,	3.3	45
100	-asymmetric spin-splitting at the interface between transition metal ferromagnets and heavy metals. *Physical Review B*, **2016**, 93,	3.3	39
99	Topological Hall and spin Hall effects in disordered skyrmionic textures. *Physical Review B*, **2017**, 95,	3.3	37
98	Spin-orbit torque in a three-dimensional topological insulator/ferromagnet heterostructure: Crossover between bulk and surface transport. *Physical Review B*, **2018**, 97,	3.3	37

97	Photoinduced quantum spin and valley Hall effects, and orbital magnetization in monolayer MoS2. *Physical Review B*, **2014**, 90,	3.3	36
96	Ab initio investigation on the magnetic ordering in Gd doped ZnO. *Journal of Applied Physics*, **2011**, 109, 083929	2.5	36
95	Theory of laser-induced demagnetization at high temperatures. *Physical Review B*, **2012**, 85,	3.3	36
94	Description of current-driven torques in magnetic tunnel junctions. *Journal of Physics Condensed Matter*, **2008**, 20, 145208	1.8	36
93	Theory of the Topological Spin Hall Effect in Antiferromagnetic Skyrmions: Impact on Current-Induced Motion. *Physical Review Letters*, **2018**, 121, 097204	7.4	35
92	Spin transfer torque in antiferromagnetic spin valves: From clean to disordered regimes. *Physical Review B*, **2014**, 89,	3.3	34
91	Bulk Spin Torque-Driven Perpendicular Magnetization Switching in L1 FePt Single Layer. *Advanced Materials*, **2020**, 32, e2002607	24	32
90	Spin-Swapping Transport and Torques in Ultrathin Magnetic Bilayers. *Physical Review Letters*, **2016**, 117, 036601	7.4	32
89	Symmetry-dependent field-free switching of perpendicular magnetization. *Nature Nanotechnology*, **2021**, 16, 277-282	28.7	32
88	Correlation of the Dzyaloshinskii-Moriya interaction with Heisenberg exchange and orbital asphericity. *Nature Communications*, **2018**, 9, 1648	17.4	31
87	Magnetism in Sc-doped ZnO with zinc vacancies: A hybrid density functional and GGA+U approaches. *Chemical Physics Letters*, **2012**, 532, 96-99	2.5	30
86	Spin Hall and Spin Swapping Torques in Diffusive Ferromagnets. *Physical Review Letters*, **2018**, 120, 176802	7.4	29
85	Enhancement of spin Hall effect induced torques for current-driven magnetic domain wall motion: Inner interface effect. *Physical Review B*, **2016**, 93,	3.3	29
84	Angular dependence and symmetry of Rashba spin torque in ferromagnetic heterostructures. *Applied Physics Letters*, **2013**, 102, 252403	3.4	29
83	Spin Hall magnetoresistance in antiferromagnet/normal metal bilayers. *Physica Status Solidi - Rapid Research Letters*, **2017**, 11, 1600409	2.5	28
82	Modelling spin transfer torque and magnetoresistance in magnetic multilayers. *Journal of Physics Condensed Matter*, **2007**, 19, 165212	1.8	28
81	Interface-based tuning of Rashba spin-orbit interaction in asymmetric oxide heterostructures with 3d electrons. *Nature Communications*, **2019**, 10, 3052	17.4	27
80	Magnon-mediated Dzyaloshinskii-Moriya torque in homogeneous ferromagnets. *Physical Review B*, **2014**, 90,	3.3	27

79	Temperature dependence of spin-orbit torques in Cu-Au alloys. *Physical Review B*, **2017**, 95,	3.3	26
78	Spin-orbit-coupled transport and spin torque in a ferromagnetic heterostructure. *Physical Review B*, **2014**, 89,	3.3	26
77	Enhanced Nonadiabaticity in Vortex Cores due to the Emergent Hall Effect. *Physical Review Letters*, **2016**, 117, 277203	7.4	26
76	Phenomenology of chiral damping in noncentrosymmetric magnets. *Physical Review B*, **2016**, 93,	3.3	25
75	Spin-Hall conductivity and electric polarization in metallic thin films. *Physical Review B*, **2013**, 87,	3.3	24
74	Peculiarities of spin polarization inversion at a thiophene/cobalt interface. *Applied Physics Letters*, **2013**, 102, 111604	3.4	24
73	X-ray analysis of oxygen-induced perpendicular magnetic anisotropy in trilayers. *Journal of Magnetism and Magnetic Materials*, **2008**, 320, 1889-1892	2.8	24
72	Spin diffusion and torques in disordered antiferromagnets. *Journal of Physics Condensed Matter*, **2017**, 29, 104002	1.8	23
71	Role of spin diffusion in current-induced domain wall motion for disordered ferromagnets. *Physical Review B*, **2015**, 91,	3.3	23
70	Anomalous Hall effect in Fe/Au multilayers. *Physical Review B*, **2016**, 94,	3.3	22
69	Controlling the deformation of antiferromagnetic skyrmions in the high-velocity regime. *Physical Review B*, **2020**, 101,	3.3	20
68	Spin diffusion in bulk GaN measured with MnAs spin injector. *Physical Review B*, **2012**, 86,	3.3	20
67	A self-consistent spin-diffusion model for micromagnetics. *Scientific Reports*, **2016**, 6, 16	4.9	19
66	Signatures of asymmetric and inelastic tunneling on the spin torque bias dependence. *Physical Review B*, **2010**, 82,	3.3	19
65	Spin-Orbitronics at Transition Metal Interfaces. *Solid State Physics*, **2017**, 68, 1-89	2	18
64	Thermal variation of current perpendicular-to-plane giant magnetoresistance in laminated and nonlaminated spin valves. *Journal of Applied Physics*, **2006**, 100, 013912	2.5	18
63	Spin-orbit torque in two-dimensional antiferromagnetic topological insulators. *Physical Review B*, **2017**, 95,	3.3	17
62	Spin relaxation in InGaN quantum disks in GaN nanowires. *Nano Letters*, **2011**, 11, 5396-400	11.5	17

61	Ferromagnet-Free All-Electric Spin Hall Transistors. *Nano Letters*, **2018**, 18, 7998-8002	11.5	17
60	Current-driven skyrmion depinning in magnetic granular films. *Physical Review B*, **2019**, 99,	3.3	16
59	Ferromagnetism carried by highly delocalized hybrid states in Sc-doped ZnO thin films. *Applied Physics Letters*, **2012**, 100, 222406	3.4	16
58	Spin transfer torque with spin diffusion in magnetic tunnel junctions. *Physical Review B*, **2012**, 86,	3.3	16
57	Intrinsic nonadiabatic topological torque in magnetic skyrmions and vortices. *Physical Review B*, **2017**, 95,	3.3	14
56	Pauli spin blockade and the ultrasmall magnetic field effect. *Physical Review Letters*, **2013**, 111, 066802	7.4	14
55	Tailoring spin-orbit torque in diluted magnetic semiconductors. *Applied Physics Letters*, **2013**, 102, 192411	3.4	14
54	Interfacial spin-orbit splitting and current-driven spin torque in anisotropic tunnel junctions. *Physical Review B*, **2011**, 83,	3.3	14
53	Interpretation of relationship between current perpendicular to plane magnetoresistance and spin torque amplitude. *Physical Review B*, **2006**, 73,	3.3	13
52	Valley-dependent spin-orbit torques in two-dimensional hexagonal crystals. *Physical Review B*, **2016**, 93,	3.3	12
51	Spin-polarization reversal at the interface between benzene and Fe(100). *Journal of Applied Physics*, **2013**, 113, 013905	2.5	12
50	Analytical description of ballistic spin currents and torques in magnetic tunnel junctions. *Physical Review B*, **2015**, 92,	3.3	11
49	Influence of interfacial magnons on spin transfer torque in magnetic tunnel junctions. *Physical Review B*, **2009**, 79,	3.3	11
48	Spin-dependent diffraction at ferromagnetic/spin spiral interface. *Journal of Applied Physics*, **2008**, 103, 07A721	2.5	11
47	Tunable magnetic anisotropy in Cr-trihalide Janus monolayers. *Journal of Physics Condensed Matter*, **2020**, 32, 355702	1.8	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	Elusive Dzyaloshinskii-Moriya interaction in monolayer Fe3GeTe2. *Physical Review B*, **2020**, 102,	3.3	10
44	Crossover between spin swapping and Hall effect in disordered systems. *Physical Review B*, **2015**, 92,	3.3	9

43	Enhanced thermoelectric power in ultrathin topological insulators with magnetic doping. *Journal of Applied Physics*, **2014**, 116, 093708	2.5	9
42	Spin-transfer torque in spin filter tunnel junctions. *Physical Review B*, **2014**, 90,	3.3	9
41	Spin Hall effect-driven spin torque in magnetic textures. *Applied Physics Letters*, **2011**, 99, 022504	3.4	9
40	Nonreciprocal charge transport up to room temperature in bulk Rashba semiconductor □GeTe. *Nature Communications*, **2021**, 12, 540	17.4	9
39	Semirealistic tight-binding model for spin-orbit torques. *Physical Review B*, **2020**, 101,	3.3	8
38	Robust spin transfer torque in antiferromagnetic tunnel junctions. *Physical Review B*, **2017**, 95,	3.3	8
37	Anomalous Hall effect and magnetoresistance behavior in Co/Pd1□Agx multilayers. *Applied Physics Letters*, **2013**, 102, 062413	3.4	8
36	Prediction of femtosecond oscillations in the transient current of a quantum dot in the Kondo regime. *Physical Review B*, **2010**, 82,	3.3	8
35	Generalization of a circuit theory for current perpendicular to plane magnetoresistance and current-driven torque. *Physical Review B*, **2006**, 73,	3.3	8
34	Dephasing of transverse spin current in ferrimagnetic alloys. *Physical Review B*, **2021**, 103,	3.3	8
33	Unidirectional Magnon-Driven Domain Wall Motion Due to the Interfacial Dzyaloshinskii-Moriya Interaction. *Physical Review Letters*, **2019**, 122, 147202	7.4	7
32	Nonequilibrium spin density and spin-orbit torque in a three-dimensional topological insulator/antiferromagnet heterostructure. *Physical Review B*, **2019**, 100,	3.3	6
31	Controlling the spin-torque efficiency with ferroelectric barriers. *Physical Review B*, **2015**, 91,	3.3	6
30	Effect of surface roughness on the anomalous Hall effect in Fe thin films. *Physical Review B*, **2020**, 101,	3.3	6
29	Cooperative Charge Pumping and Enhanced Skyrmion Mobility. *Physical Review Letters*, **2018**, 121, 257203	7.4	6
28	Topological Aspects of Antiferromagnets. *Journal Physics D: Applied Physics*,	3	6
27	Steady motion of skyrmions and domains walls under diffusive spin torques. *Physical Review B*, **2017**, 95,	3.3	5
26	Resonant longitudinal Zitterbewegung in zigzag graphene nanoribbons. *Physical Review B*, **2015**, 91,	3.3	5

25	Role of the chemical bonding for the time-dependent electron transport through an interacting quantum dot. *Chemical Physics Letters*, **2011**, 509, 48-50	2.5	5
24	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	9.5	5
23	Induced spin textures at 3d transition metal–topological insulator interfaces. *Physical Review B*, **2020**, 101,	3.3	4
22	Tunable spin-charge conversion through topological phase transitions in zigzag nanoribbons. *Physical Review B*, **2016**, 93,	3.3	4
21	Competition between Electronic and Magnonic Spin Currents in Metallic Antiferromagnets. *Physical Review Applied*, **2019**, 12,	4.3	4
20	Phonon-magnon resonant processes with relevance to acoustic spin pumping. *Physical Review B*, **2014**, 90,	3.3	4
19	Publisher's Note: Theory of spin torque due to spin-orbit coupling [Phys. Rev. B 79, 094422 (2009)]. *Physical Review B*, **2009**, 79,	3.3	4
18	Janus monolayers of magnetic transition metal dichalcogenides as an all-in-one platform for spin-orbit torque. *Physical Review B*, **2021**, 104,	3.3	4
17	Quantum anomalous Hall effect and Anderson-Chern insulating regime in the noncollinear antiferromagnetic 3Q state. *Physical Review B*, **2019**, 100,	3.3	3
16	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	2.8	3
15	Control of spin–charge conversion in van der Waals heterostructures. *APL Materials*, **2021**, 9, 100901	5.7	3
14	Symmetrized decomposition of the Kubo-Bastin formula. *Physical Review B*, **2020**, 102,	3.3	3
13	Spin-orbit torques in a Rashba honeycomb antiferromagnet. *Physical Review B*, **2019**, 100,	3.3	3
12	Current-Induced Magnetization Switching Across a Nearly Room-Temperature Compensation Point in an Insulating Compensated Ferrimagnet.. *ACS Nano*, **2022**,	16.7	3
11	Rashba diamond in an Aharonov-Casher ring. *Applied Physics Letters*, **2011**, 99, 142507	3.4	2
10	. *IEEE Transactions on Magnetics*, **2011**, 47, 2735-2738	2	2
9	Unconventional Robust Spin-Transfer Torque in Noncollinear Antiferromagnetic Junctions.. *Physical Review Letters*, **2022**, 128, 097702	7.4	2
8	Unconventional spin pumping and magnetic damping in an insulating compensated ferrimagnet.. *Advanced Materials*, **2022**, e2200019	24	2

7	Topological phase transition and thermal Hall effect in kagome ferromagnets. *Physical Review B*, **2021**, 104,	3.3	1
6	Skyrmion battery effect via inhomogeneous magnetic anisotropy. *Applied Physics Reviews*, **2021**, 8, 021402	17.3	1
5	Spin transport in multilayer graphene away from the charge neutrality point. *Carbon*, **2021**, 172, 474-479	10.4	1
4	Rashba spin□orbit coupling in two-dimensional systems **2020**, 25-64		0
3	Signature of Topological Phases in Zitterbewegung. *Spin*, **2016**, 06, 1640004	1.3	
2	Currents and torques due to spin-dependent diffraction in ferromagnetic/spin spiral bilayers. *Journal of Physics Condensed Matter*, **2008**, 20, 505213	1.8	
1	Competition between Chiral Energy and Chiral Damping in the Asymmetric Expansion of Magnetic Bubbles. *ACS Applied Electronic Materials*, **2021**, 3, 4734-4742	4	