

Aurelien Manchon

List of Publications by Year in descending order

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150
papers

12,703
citations

53794

45
h-index

23533

111
g-index

153
all docs

153
docs citations

153
times ranked

9196
citing authors

#	ARTICLE	IF	CITATIONS
1	Topological aspects of antiferromagnets. <i>Journal Physics D: Applied Physics</i> , 2022, 55, 103002.	2.8	36
2	Topological thermal Hall effect and magnonic edge states in kagome ferromagnets with bond anisotropy. <i>New Journal of Physics</i> , 2022, 24, 023033.	2.9	4
3	Unified formulation of interfacial magnonic pumping from noncollinear magnets. <i>Physical Review B</i> , 2022, 105, .	3.2	2
4	Unconventional Robust Spin-Transfer Torque in Noncollinear Antiferromagnetic Junctions. <i>Physical Review Letters</i> , 2022, 128, 097702.	7.8	18
5	Magnonic Metamaterials for Spin-Wave Control with Inhomogeneous Dzyaloshinskiiâ€“Moriya Interactions. <i>Nanomaterials</i> , 2022, 12, 1159.	4.1	3
6	Unconventional Spin Pumping and Magnetic Damping in an Insulating Compensated Ferrimagnet. <i>Advanced Materials</i> , 2022, 34, e2200019.	21.0	9
7	Current-Induced Magnetization Switching Across a Nearly Room-Temperature Compensation Point in an Insulating Compensated Ferrimagnet. <i>ACS Nano</i> , 2022, 16, 8181-8189.	14.6	17
8	Spin-orbit coupling induced ultrahigh-harmonic generation from magnetic dynamics. <i>Physical Review B</i> , 2022, 105, .	3.2	6
9	Current-induced self-switching of perpendicular magnetization in CoPt single layer. <i>Nature Communications</i> , 2022, 13, .	12.8	33
10	Rashbaâ€“Edelstein Effect in the hâ€“BN Van Der Waals Interface for Magnetization Switching. <i>Advanced Materials</i> , 2022, 34, .	21.0	9
11	Spin transport in multilayer graphene away from the charge neutrality point. <i>Carbon</i> , 2021, 172, 474-479.	10.3	3
12	Nonreciprocal charge transport up to room temperature in bulk Rashba semiconductor $\hat{I}\pm$ -GeTe. <i>Nature Communications</i> , 2021, 12, 540.	12.8	27
13	Dephasing of transverse spin current in ferrimagnetic alloys. <i>Physical Review B</i> , 2021, 103, .	3.2	19
14	Crossover from diffusive to superfluid transport in frustrated magnets. <i>Physical Review B</i> , 2021, 103, .	3.2	4
15	Skyrmion battery effect via inhomogeneous magnetic anisotropy. <i>Applied Physics Reviews</i> , 2021, 8, .	11.3	6
16	Janus monolayers of magnetic transition metal dichalcogenides as an all-in-one platform for spin-orbit torque. <i>Physical Review B</i> , 2021, 104, .	3.2	13
17	Symmetry-dependent field-free switching of perpendicular magnetization. <i>Nature Nanotechnology</i> , 2021, 16, 277-282.	31.5	145
18	Control of spinâ€“charge conversion in van der Waals heterostructures. <i>APL Materials</i> , 2021, 9, .	5.1	20

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19	Topological phase transition and thermal Hall effect in kagome ferromagnets. Physical Review B, 2021, 104, .	3.2	7
20	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
21	Emerging materials for spin-charge interconversion. APL Materials, 2021, 9, 120401.	5.1	4
22	Elusive Dzyaloshinskii-Moriya interaction in monolayer Fe/Pt heterostructures. Physical Review B, 2020, 102, .	3.2	10
23	Symmetrized decomposition of the Kubo-Bastin formula. Physical Review B, 2020, 102, .	3.2	15
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.	8.0	7
25	Tunable magnetic anisotropy in Cr-trihalide Janus monolayers. Journal of Physics Condensed Matter, 2020, 32, 355702.	1.8	21
26	Semirealistic tight-binding model for spin-orbit torques. Physical Review B, 2020, 101, .	3.2	10
27	Bulk Spin Torque-Driven Perpendicular Magnetization Switching in FePt Single Layer. Advanced Materials, 2020, 32, e2002607.	21.0	66
28	Induced spin textures at transition metal-topological insulator interfaces. Physical Review B, 2020, 101, .	3.2	10
29	Direct imaging of an inhomogeneous electric current distribution using the trajectory of magnetic half-skyrmions. Science Advances, 2020, 6, eaay1876.	10.3	20
30	Rashba spin-orbit coupling in two-dimensional systems. , 2020, , 25-64.		2
31	Controlling the deformation of antiferromagnetic skyrmions in the high-velocity regime. Physical Review B, 2020, 101, .	3.2	33
32	Effect of surface roughness on the anomalous Hall effect in Fe thin films. Physical Review B, 2020, 101, .	3.2	12
33	The 2021 quantum materials roadmap. JPhys Materials, 2020, 3, 042006.	4.2	111
34	Semirealistic tight-binding model for Dzyaloshinskii-Moriya interaction. Physical Review B, 2020, 102, .	3.2	3
35	Interface-based tuning of Rashba spin-orbit interaction in asymmetric oxide heterostructures with 3d electrons. Nature Communications, 2019, 10, 3052.	12.8	51
36	Nonequilibrium spin density and spin-orbit torque in a three-dimensional topological insulator/antiferromagnet heterostructure. Physical Review B, 2019, 100, .	3.2	10

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37	Competition between Electronic and Magnonic Spin Currents in Metallic Antiferromagnets. <i>Physical Review Applied</i> , 2019, 12, .	3.8	6
38	Quantum anomalous Hall effect and Anderson-Chern insulating regime in the noncollinear antiferromagnetic 3Q state. <i>Physical Review B</i> , 2019, 100, .	3.2	10
39	Current-induced spin-orbit torques in ferromagnetic and antiferromagnetic systems. <i>Reviews of Modern Physics</i> , 2019, 91, .	45.6	899
40	Current-driven skyrmion depinning in magnetic granular films. <i>Physical Review B</i> , 2019, 99, .	3.2	26
41	Unidirectional Magnon-Driven Domain Wall Motion Due to the Interfacial Dzyaloshinskii-Moriya Interaction. <i>Physical Review Letters</i> , 2019, 122, 147202.	7.8	10
42	Spin-orbit torques in a Rashba honeycomb antiferromagnet. <i>Physical Review B</i> , 2019, 100, .	3.2	6
43	The multiple directions of antiferromagnetic spintronics. <i>Nature Physics</i> , 2018, 14, 200-203.	16.7	365
44	Antiferromagnetic spintronics. <i>Reviews of Modern Physics</i> , 2018, 90, .	45.6	1,536
45	Spin Hall and Spin Swapping Torques in Diffusive Ferromagnets. <i>Physical Review Letters</i> , 2018, 120, 176802.	7.8	46
46	Spin-orbit torque in a three-dimensional topological insulatorâ€“ferromagnet heterostructure: Crossover between bulk and surface transport. <i>Physical Review B</i> , 2018, 97, .	3.2	59
47	Ferromagnet-Free All-Electric Spin Hall Transistors. <i>Nano Letters</i> , 2018, 18, 7998-8002.	9.1	27
48	Cooperative Charge Pumping and Enhanced Skyrmion Mobility. <i>Physical Review Letters</i> , 2018, 121, 257203.	7.8	9
49	Spin-momentum locking and spin-orbit torques in magnetic nano-heterojunctions composed of Weyl semimetal WTe ₂ . <i>Nature Communications</i> , 2018, 9, 3990.	12.8	105
50	Theory of the Topological Spin Hall Effect in Antiferromagnetic Skyrmions: Impact on Current-Induced Motion. <i>Physical Review Letters</i> , 2018, 121, 097204.	7.8	60
51	Room-temperature high spinâ€“orbit torque due to quantum confinement in sputtered Bi _x Se(1â€“x) films. <i>Nature Materials</i> , 2018, 17, 800-807.	27.5	344
52	Correlation of the Dzyaloshinskiiâ€“Moriya interaction with Heisenberg exchange and orbital asphericity. <i>Nature Communications</i> , 2018, 9, 1648.	12.8	60
53	Spin Hall magnetoresistance in antiferromagnet/normal metal bilayers. <i>Physica Status Solidi - Rapid Research Letters</i> , 2017, 11, 1600409.	2.4	32
54	Spin-orbit torques in locally and globally noncentrosymmetric crystals: Antiferromagnets and ferromagnets. <i>Physical Review B</i> , 2017, 95, .	3.2	113

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55	Spin diffusion and torques in disordered antiferromagnets. Journal of Physics Condensed Matter, 2017, 29, 104002.	1.8	31
56	Steady motion of skyrmions and domains walls under diffusive spin torques. Physical Review B, 2017, 95, .	3.2	5
57	Topological Hall and spin Hall effects in disordered skyrmionic textures. Physical Review B, 2017, 95, .	3.2	46
58	Intrinsic nonadiabatic topological torque in magnetic skyrmions and vortices. Physical Review B, 2017, 95, .	3.2	16
59	Spin-orbit torque in two-dimensional antiferromagnetic topological insulators. Physical Review B, 2017, 95, .	3.2	23
60	Temperature dependence of spin-orbit torques in Cu-Au alloys. Physical Review B, 2017, 95, .	3.2	39
61	Performance of synthetic antiferromagnetic racetrack memory: domain wall versus skyrmion. Journal Physics D: Applied Physics, 2017, 50, 325302.	2.8	86
62	Dirac spin-orbit torques and charge pumping at the surface of topological insulators. Physical Review B, 2017, 96, .	3.2	70
63	Robust spin transfer torque in antiferromagnetic tunnel junctions. Physical Review B, 2017, 95, .	3.2	16
64	Spin-Orbitronics at Transition Metal Interfaces. Solid State Physics, 2017, 68, 1-89.	0.5	28
65	Theory of Rashba Torques. , 2017, , .		1
66	Enhanced Nonadiabaticity in Vortex Cores due to the Emergent Hall Effect. Physical Review Letters, 2016, 117, 277203.	7.8	29
67	Hund's Rule-Driven Dzyaloshinskii-Moriya Interaction at $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mn} \rangle 3 \langle \text{mml:mn} \rangle \langle \text{mml:mi} \rangle d \langle \text{mml:mi} \rangle \langle \text{mml:mtext} \rangle \hat{a} \langle \text{mml:mtext} \rangle \langle \text{mml:mn} \rangle 5 \langle \text{mml:mn} \rangle \langle \text{mml:mi} \rangle \langle \text{mml:mtext} \rangle \langle \text{mml:mn} \rangle 163 \langle \text{mml:mn} \rangle \langle \text{mml:mi} \rangle \langle \text{mml:mtext} \rangle \langle \text{mml:mn} \rangle 247202.$	7.8	163
68	Oxygen-enabled control of Dzyaloshinskii-Moriya Interaction in ultra-thin magnetic films. Scientific Reports, 2016, 6, 24634.	3.3	74
69	Spin orbit torques and Dzyaloshinskii-Moriya interaction in dual-interfaced Co-Ni multilayers. Scientific Reports, 2016, 6, 32629.	3.3	75
70	Valley-dependent spin-orbit torques in two-dimensional hexagonal crystals. Physical Review B, 2016, 93, .	3.2	15
71	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
72	Phenomenology of chiral damping in noncentrosymmetric magnets. Physical Review B, 2016, 93, .	3.2	33

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73	Tunable spin-charge conversion through topological phase transitions in zigzag nanoribbons. Physical Review B, 2016, 93, .	3.2	4
74	Anomalous Hall effect in Fe/Au multilayers. Physical Review B, 2016, 94, .	3.2	26
75	Spin-torque generation in topological insulator based heterostructures. Physical Review B, 2016, 93, .	3.2	54
76	k -asymmetric spin splitting at the interface between transition metal ferromagnets and heavy metals. Physical Review B, 2016, 93, .	3.2	48
77	Spin-Swapping Transport and Torques in Ultrathin Magnetic Bilayers. Physical Review Letters, 2016, 117, 036601.	7.8	50
78	Enhanced Spin-Orbit Torque via Modulation of Spin Current Absorption. Physical Review Letters, 2016, 117, 217206.	7.8	104
79	Signature of Topological Phases in Zitterbewegung. Spin, 2016, 06, 1640004.	1.3	0
80	A self-consistent spin-diffusion model for micromagnetics. Scientific Reports, 2016, 6, 16.	3.3	40
81	Chiral damping of magnetic domain walls. Nature Materials, 2016, 15, 272-277.	27.5	99
82	Intraband and interband spin-orbit torques in noncentrosymmetric ferromagnets. Physical Review B, 2015, 91, .	3.2	64
83	Crossover between spin swapping and Hall effect in disordered systems. Physical Review B, 2015, 92, .	3.2	11
84	Analytical description of ballistic spin currents and torques in magnetic tunnel junctions. Physical Review B, 2015, 92, .	3.2	25
85	Angular dependence of spin-orbit spin-transfer torques. Physical Review B, 2015, 91, .	3.2	63
86	Controlling the spin-torque efficiency with ferroelectric barriers. Physical Review B, 2015, 91, .	3.2	9
87	Resonant longitudinal Zitterbewegung in zigzag graphene nanoribbons. Physical Review B, 2015, 91, .	3.2	6
88	Role of spin diffusion in current-induced domain wall motion for disordered ferromagnets. Physical Review B, 2015, 91, .	3.2	23
89	Antiferromagnetic spin-orbitronics. , 2015, , .		0
90	New perspectives for Rashba spin-orbit coupling. Nature Materials, 2015, 14, 871-882.	27.5	1,438

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91	Phonon-magnon resonant processes with relevance to acoustic spin pumping. Physical Review B, 2014, 90, .	3.2	6
92	Publisher's Note: Spin transfer torque in antiferromagnetic spin valves: From clean to disordered regimes [Phys. Rev. B, 174430 (2014)]. Physical Review B, 2014, 90, .	3.2	0
93	Magnon-mediated Dzyaloshinskii-Moriya torque in homogeneous ferromagnets. Physical Review B, 2014, 90, .	3.2	32
94	Enhanced thermoelectric power in ultrathin topological insulators with magnetic doping. Journal of Applied Physics, 2014, 116, 093708.	2.5	11
95	Spin-transfer torque in spin filter tunnel junctions. Physical Review B, 2014, 90, .	3.2	11
96	Photoinduced quantum spin and valley Hall effects, and orbital magnetization in monolayer MoS_2 . Physical Review B, 2014, 90, .	3.2	55
97	A new moment for Berry. Nature Physics, 2014, 10, 340-341.	16.7	43
98	Spin-orbit-coupled transport and spin torque in a ferromagnetic heterostructure. Physical Review B, 2014, 89, .	3.2	32
99	Spin transfer torque in antiferromagnetic spin valves: From clean to disordered regimes. Physical Review B, 2014, 89, .	3.2	45
100	Relativistic Néel-Order Fields Induced by Electrical Current in Antiferromagnets. Physical Review Letters, 2014, 113, 157201.	7.8	377
101	Spin-transfer torque generated by a topological insulator. Nature, 2014, 511, 449-451.	27.8	1,134
102	Pauli Spin Blockade and the Ultrasmall Magnetic Field Effect. Physical Review Letters, 2013, 111, 066802.	7.8	17
103	Quantum spin/valley Hall effect and topological insulator phase transitions in silicene. Applied Physics Letters, 2013, 102, .	3.3	124
104	Current induced torques and interfacial spin-orbit coupling: Semiclassical modeling. Physical Review B, 2013, 87, .	3.2	420
105	Spin-Orbit Torques in Co/Pd Multilayer Nanowires. Physical Review Letters, 2013, 111, 246602.	7.8	135
106	Spin-polarization reversal at the interface between benzene and Fe(100). Journal of Applied Physics, 2013, 113, .	2.5	13
107	Spin-Hall conductivity and electric polarization in metallic thin films. Physical Review B, 2013, 87, .	3.2	24
108	Peculiarities of spin polarization inversion at a thiophene/cobalt interface. Applied Physics Letters, 2013, 102, .	3.3	26

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109	Tailoring spin-orbit torque in diluted magnetic semiconductors. Applied Physics Letters, 2013, 102, 192411.	3.3	15
110	Angular dependence and symmetry of Rashba spin torque in ferromagnetic heterostructures. Applied Physics Letters, 2013, 102, .	3.3	30
111	Current-induced torques and interfacial spin-orbit coupling. Physical Review B, 2013, 88, .	3.2	121
112	Anomalous Hall effect and magnetoresistance behavior in Co/Pd $_{1-x}$ Ag $_x$ multilayers. Applied Physics Letters, 2013, 102, .	3.3	8
113	Effects of surface and interface scattering on anomalous Hall effect in Co/Pd multilayers. Physical Review B, 2012, 86, .	3.2	68
114	Theory of laser-induced demagnetization at high temperatures. Physical Review B, 2012, 85, .	3.2	47
115	Manipulating the voltage dependence of tunneling spin torques. , 2012, , .		0
116	Spin diffusion in bulk GaN measured with MnAs spin injector. Physical Review B, 2012, 86, .	3.2	24
117	Ferromagnetism carried by highly delocalized hybrid states in Sc-doped ZnO thin films. Applied Physics Letters, 2012, 100, 222406.	3.3	16
118	Spin transfer torque with spin diffusion in magnetic tunnel junctions. Physical Review B, 2012, 86, .	3.2	20
119	Diffusive Spin Dynamics in Ferromagnetic Thin Films with a Rashba Interaction. Physical Review Letters, 2012, 108, 117201.	7.8	219
120	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
121	Interfacial spin-orbit splitting and current-driven spin torque in anisotropic tunnel junctions. Physical Review B, 2011, 83, .	3.2	15
122	Ab initio investigation on the magnetic ordering in Gd doped ZnO. Journal of Applied Physics, 2011, 109, 083929.	2.5	37
123	Rashba diamond in an Aharonov-Casher ring. Applied Physics Letters, 2011, 99, 142507.	3.3	2
124	Spin Relaxation in InGaN Quantum Disks in GaN Nanowires. Nano Letters, 2011, 11, 5396-5400.	9.1	23
125	Voltage-Driven Versus Current-Driven Spin Torque in Anisotropic Tunneling Junctions. IEEE Transactions on Magnetics, 2011, 47, 2735-2738.	2.1	2
126	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

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127	Spin Hall effect-driven spin torque in magnetic textures. Applied Physics Letters, 2011, 99, 022504.	3.3	10
128	First-principles investigation of the very large perpendicular magnetic anisotropy at Fe$$MgO and Co$$MgO interfaces. Physical Review B, 2011, 84, .	3.2	545
129	Signatures of asymmetric and inelastic tunneling on the spin torque bias dependence. Physical Review B, 2010, 82, .	3.2	19
130	Prediction of femtosecond oscillations in the transient current of a quantum dot in the Kondo regime. Physical Review B, 2010, 82, .	3.2	10
131	Influence of thermal annealing on the perpendicular magnetic anisotropy of Pt/Co/AlOx trilayers. Physical Review B, 2009, 79, .	3.2	136
132	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
133	Bias-voltage dependence of perpendicular spin-transfer torque in asymmetric MgO-based magnetic tunnel junctions. Nature Physics, 2009, 5, 898-902.	16.7	193
134	Influence of interfacial magnons on spin transfer torque in magnetic tunnel junctions. Physical Review B, 2009, 79, .	3.2	11
135	Theory of spin torque due to spin-orbit coupling. Physical Review B, 2009, 79, .	3.2	385
136	X-ray analysis of oxygen-induced perpendicular magnetic anisotropy in trilayers. Journal of Magnetism and Magnetic Materials, 2008, 320, 1889-1892.	2.3	28
137	Description of current-driven torques in magnetic tunnel junctions. Journal of Physics Condensed Matter, 2008, 20, 145208.	1.8	40
138	Theory of nonequilibrium intrinsic spin torque in a single nanomagnet. Physical Review B, 2008, 78, .	3.2	423
139	Analysis of oxygen induced anisotropy crossover in Pt/Co/MOx trilayers. Journal of Applied Physics, 2008, 104, .	2.5	200
140	Currents and torques due to spin-dependent diffraction in ferromagnetic/spin spiral bilayers. Journal of Physics Condensed Matter, 2008, 20, 505213.	1.8	0
141	X-ray analysis of the magnetic influence of oxygen in Pt$\hat{\cdot}$Co$\hat{\cdot}$AlOx trilayers. Journal of Applied Physics, 2008, 103, 07A912.	2.5	55
142	Spin-dependent diffraction at ferromagnetic/spin spiral interface. Journal of Applied Physics, 2008, 103, 07A721.	2.5	11
143	Modelling spin transfer torque and magnetoresistance in magnetic multilayers. Journal of Physics Condensed Matter, 2007, 19, 165212.	1.8	31
144	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

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145	Generalization of a circuit theory for current perpendicular to plane magnetoresistance and current-driven torque. Physical Review B, 2006, 73, .	3.2	8
146	Interpretation of relationship between current perpendicular to plane magnetoresistance and spin torque amplitude. Physical Review B, 2006, 73, .	3.2	14
147	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
148	Development of a Multi-kHz Optical Bench for Nonlinear Optical Diagnostic. , 2005, , .		0
149	Development of a Multi-kHz Optical Bench for Nonlinear Optical Diagnostic. , 2005, , .		0
150	Spin Polarization Without Net Magnetization. Physics Magazine, 0, 13, .	0.1	3