Eduardo Martinez

List of Publications by Year
in descending order

114 papers	4,838 citations	172457 29 h-index	95266 68 g-index
117 all docs	117 docs citations	117 times ranked	3587 citing authors

#	Article	IF	Citations
1	Current-driven dynamics of chiral ferromagnetic domain walls. Nature Materials, 2013, 12, 611-616.	27.5	1,550
2	A strategy for the design of skyrmion racetrack memories. Scientific Reports, 2014, 4, 6784.	3.3	689
3	Spin Hall torque magnetometry of Dzyaloshinskii domain walls. Physical Review B, 2014, 90, .	3.2	221
4	Current-driven dynamics of Dzyaloshinskii domain walls in the presence of in-plane fields: Full micromagnetic and one-dimensional analysis. Journal of Applied Physics, 2014, 115, .	2.5	126
5	Micromagnetic simulations using Graphics Processing Units. Journal Physics D: Applied Physics, 2012, 45, 323001.	2.8	117
6	Current-driven domain wall motion along high perpendicular anisotropy multilayers: The role of the Rashba field, the spin Hall effect, and the Dzyaloshinskii-Moriya interaction. Applied Physics Letters, 2013, 103, .	3.3	101
7	Thermal effects in domain wall motion: Micromagnetic simulations and analytical model. Physical Review B, 2007, 75, .	3.2	93
8	Performance of synthetic antiferromagnetic racetrack memory: domain wall versus skyrmion. Journal Physics D: Applied Physics, 2017, 50, 325302.	2.8	86
9	Role of B diffusion in the interfacial Dzyaloshinskii-Moriya interaction in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Ta</mml:mi><mml:mo>/</mml:mo><mml:msub><mml:mi mathvariant="normal">F</mml:mi><mml:msub><mml:mi mathvariant="normal">e</mml:mi><mml:mn>60</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">B</mml:mi><mml:mn>20</mml:mn></mml:msub></mml:msub><mml:mo>/</mml:mo><mml:mi>MgO</mml:mi></mml:mrow	3.2	78
10	Switching of a single ferromagnetic layer driven by spin Hall effect. Applied Physics Letters, 2013, 102, .	3.3	77
11	Chiral magnetization textures stabilized by the Dzyaloshinskii-Moriya interaction during spin-orbit torque switching. Applied Physics Letters, 2014, 104, 092403.	3.3	71
12	Interaction between propagating spin waves and domain walls on a ferromagnetic nanowire. Physical Review B, 2012, 85, .	3.2	61
13	Nonvolatile Ionic Modification of the Dzyaloshinskii-Moriya Interaction. Physical Review Applied, 2019, 12, .	3.8	59
14	Thermal Effects on Domain Wall Depinning from a Single Notch. Physical Review Letters, 2007, 98, 267202.	7.8	58
15	The stochastic nature of the domain wall motion along high perpendicular anisotropy strips with surface roughness. Journal of Physics Condensed Matter, 2012, 24, 024206.	1.8	54
16	Micromagnetic computations of spin polarized current-driven magnetization processes. Journal of Magnetism and Magnetic Materials, 2005, 286, 381-385.	2.3	52
17	Effect of the classical ampere field in micromagnetic computations of spin polarized current-driven magnetization processes. Journal of Applied Physics, 2005, 97, 10C713.	2.5	44
18	Oscillator based on pinned domain walls driven by direct current. Physical Review B, 2011, 83, .	3.2	42

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19	Universal chiral-triggered magnetization switching in confined nanodots. Scientific Reports, 2015, 5, 10156.	3.3	42
20	Skyrmion motion induced by voltage-controlled in-plane strain gradients. Applied Physics Letters, 2019, 115, .	3.3	40
21	Domain-wall dynamics driven by short pulses along thin ferromagnetic strips: Micromagnetic simulations and analytical description. Physical Review B, 2009, 79, .	3.2	39
22	High frequency spin-torque-oscillators with reduced perpendicular torque effect based on asymmetric vortex polarizer. Journal of Applied Physics, 2011, 110, .	2.5	37
23	Micromagnetic simulations of nanosecond magnetization reversal processes in magnetic nanopillar. Journal of Applied Physics, 2006, 99, 08G522.	2.5	36
24	Micromagnetic dynamic computations including eddy currents. IEEE Transactions on Magnetics, 2003, 39, 2498-2500.	2.1	35
25	Resonant domain wall depinning induced by oscillating spin-polarized currents in thin ferromagnetic strips. Physical Review B, 2008, 77, .	3.2	35
26	Domain wall motion by localized temperature gradients. Physical Review B, 2017, 95, .	3.2	35
27	Modification of Dzyaloshinskii-Moriya-Interaction-Stabilized Domain Wall Chirality by Driving Currents. Physical Review Letters, 2018, 121, 147203.	7.8	35
28	Reversible and irreversible current induced domain wall motion in CoFeB based spin valves stripes. Applied Physics Letters, 2007, 90, 232505.	3.3	32
29	Coupling of spin-transfer torque to microwave magnetic field: A micromagnetic modal analysis. Journal of Applied Physics, 2007, 101, 053914.	2.5	31
30	Microstructure and mechanical properties of plasma spraying coatings from YSZ feedstocks comprising nano- and submicron-sized particles. Ceramics International, 2015, 41, 4108-4117.	4.8	30
31	Tunable inertia of chiral magnetic domain walls. Nature Communications, 2016, 7, 13533.	12.8	30
32	Magnetization dynamics driven by the combined action of ac magnetic field and dc spin-polarized current. Journal of Applied Physics, 2006, 99, 08G507.	2.5	28
33	Thermally activated domain wall depinning in thin strips with high perpendicular magnetocrystalline anisotropy. Journal of Applied Physics, 2009, 106, 043914.	2.5	26
34	Mathematical modeling and numerical simulation of domain wall motion in magnetic nanostrips with crystallographic defects. Applied Mathematical Modelling, 2012, 36, 4876-4886.	4.2	26
35	Influence of Joule heating on current-induced domain wall depinning. Journal of Applied Physics, 2016, 119, 213902.	2.5	26
36	Pinned domain wall oscillator as a tuneable direct current spin wave emitter. Scientific Reports, 2017, 7, 13559.	3.3	26

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37	Efficient and controlled domain wall nucleation for magnetic shift registers. Scientific Reports, 2017, 7, 11909.	3.3	24
38	Ferromagnetic layer thickness dependence of the Dzyaloshinskii-Moriya interaction and spin-orbit torques in PtCoAlOx. AIP Advances, 2017, 7, .	1.3	24
39	Micromagnetic modal analysis of spin-transfer-driven ferromagnetic resonance of individual nanomagnets. Journal of Applied Physics, 2007, 101, 09A502.	2.5	22
40	Minimizing cell size dependence in micromagnetics simulations with thermal noise. Journal Physics D: Applied Physics, 2007, 40, 942-948.	2.8	22
41	Magnetic properties and field-driven dynamics of chiral domain walls in epitaxial <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mrow><mml:mi>Pt</mml:mi></mml:mrow><mml:mrow><mml:mtext> trilayers. Physical Review B, 2018, 98, .	3.2	22
42	Spin-polarized current-driven switching in permalloy nanostructures. Journal of Applied Physics, 2005, 97, 10E302.	2.5	21
43	Domain wall dynamics along curved strips under current pulses: The influence of Joule heating. Applied Physics Letters, 2016, 108, .	3.3	19
44	Asynchronous current-induced switching of rare-earth and transition-metal sublattices in ferrimagnetic alloys. Nature Materials, 2022, 21, 640-646.	27.5	19
45	Current-driven domain wall dynamics in ferromagnetic layers synthetically exchange-coupled by a spacer: A micromagnetic study. Journal of Applied Physics, 2018, 123, .	2.5	18
46	Current-driven domain wall dynamics in ferrimagnets: Micromagnetic approach and collective coordinates model. Journal of Magnetism and Magnetic Materials, 2019, 491, 165545.	2.3	18
47	The influence of the Rashba field on the current-induced domain wall dynamics: A full micromagnetic analysis, including surface roughness and thermal effects. Journal of Applied Physics, 2012, 111, .	2.5	17
48	Coupled Dzyaloshinskii walls and their current-induced dynamics by the spin Hall effect. Journal of Applied Physics, 2014, 116, 023909.	2.5	17
49	Dynamical depinning of chiral domain walls. Physical Review B, 2017, 96, .	3.2	17
50	Current-Induced Generation and Synchronous Motion of Highly Packed Coupled Chiral Domain Walls. Nano Letters, 2017, 17, 1814-1818.	9.1	16
51	Micromagnetic analysis of the Rashba field on current-induced domain wall propagation. Journal of Applied Physics, 2012, 111, .	2.5	15
52	Controlling Allâ€Optical Helicityâ€Dependent Switching in Engineered Rareâ€Earth Free Synthetic Ferrimagnets. Advanced Science, 2019, 6, 1901876.	11.2	15
53	Tuning spinâ€“orbit torques at magnetic domain walls in epitaxial Pt/Co/Pt_{1â^'x}Au_x trilayers. Nanotechnology, 2019, 30, 234003.	2.6	15
54	Electric Field Control of the Skyrmion Hall Effect in Piezoelectric-Magnetic Devices. Physical Review Applied, 2021, 16, .	3.8	15

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55	Micromagnetic switching of patterned square magnetic nanostructures. Journal of Applied Physics, 2001, 89, 7585-7587.	2.5	14
56	On the interpretations of Langevin stochastic equation in different coordinate systems. Physica B: Condensed Matter, 2004, 343, 252-256.	2.7	14
57	Structural characterization of magnetic nanostripes by fast domain wall injection. Physical Review B, 2011, 83, .	3.2	14
58	Stochastic resonance of a domain wall in a stripe with two pinning sites. Applied Physics Letters, 2011, 98, 072507.	3.3	14
59	About the inclusion of eddy currents in micromagnetic computations. Physica B: Condensed Matter, 2004, 343, 257-261.	2.7	13
60	Collective coordinate descriptions of magnetic domain wall motion in perpendicularly magnetized nanostructures under the application of in-plane fields. Journal of Magnetism and Magnetic Materials, 2018, 468, 25-43.	2.3	13
61	Static Properties and Current-Driven Dynamics of Domain Walls in Perpendicular Magnetocrystalline Anisotropy Nanostrips with Rectangular Cross-Section. Advances in Condensed Matter Physics, 2012, 2012, 1-21.	1.1	12
62	The influence of the spin-orbit torques on the current-driven domain wall motion. AIP Advances, 2013, 3, .	1.3	12
63	Spin-orbit torques for current parallel and perpendicular to a domain wall. Applied Physics Letters, 2015, 107, .	3.3	12
64	Angular dependence of current-driven chiral walls. Applied Physics Express, 2016, 9, 063008.	2.4	12
65	Current-driven skyrmion motion along disordered magnetic tracks. AIP Advances, 2017, 7, 056017.	1.3	12
66	Helical surface magnetization in nanowires: the role of chirality. Nanoscale, 2020, 12, 17880-17885.	5.6	12
67	Temperature dependence of spontaneous magnetization using a continuous model. IEEE Transactions on Magnetics, 2003, 39, 2522-2524.	2.1	11
68	Deterministic and time resolved thermo-magnetic switching in a nickel nanowire. Scientific Reports, 2019, 9, 17339.	3.3	11
69	Hysteretic spin-wave excitation in spin-torque oscillators as a function of the in-plane field angle: A micromagnetic description. Journal of Applied Physics, 2011, 110, 123913.	2.5	10
70	Domain Wall Dynamics in Asymmetric Stacks: The Roles of Rashba Field and the Spin Hall Effect. IEEE Transactions on Magnetics, 2013, 49, 3105-3108.	2.1	10
71	Computing Solenoidal Fields in Micromagnetic Simulations. IEEE Transactions on Magnetics, 2004, 40, 3240-3243.	2.1	9
72	Nonphenomenological damping constant due to eddy current losses in uniformly magnetized samples. Journal of Applied Physics, 2006, 99, 123912.	2.5	9

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73	Influence of the magnetostatic coupling in magnetization switching driven by spin-polarized current. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2006, 126, 190-193.	3.5	8
74	The effect of dry friction on domain wall dynamics: A micromagnetic study. Journal of Applied Physics, 2012, 111, .	2.5	8
75	Collective coordinate models of domain wall motion in perpendicularly magnetized systems under the spin hall effect and longitudinal fields. Journal of Magnetism and Magnetic Materials, 2017, 426, 195-201.	2.3	8
76	Micromagnetic simulations with thermal noise: Physical and numerical aspects. Journal of Magnetism and Magnetic Materials, 2007, 316, 269-272.	2.3	7
77	Micromagnetic study of interaction between achiral and homochiral domain walls in ultrathin ferromagnetic strips. Journal of Applied Physics, 2015, 117, 17D509.	2.5	6
78	Realistic micromagnetic description of all-optical ultrafast switching processes in ferrimagnetic alloys. Physical Review B, 2022, 105, .	3.2	6
79	Configurational anisotropy and thermally activated switching in magnetic nanosquares. Physica B: Condensed Matter, 2001, 306, 216-220.	2.7	5
80	Effective Damping Contribution From Micromagnetic Modeling in a Spin-Transfer-Driven Ferromagnetic Resonance. IEEE Nanotechnology Magazine, 2009, 8, 477-481.	2.0	5
81	Temperature Dependence of Microwave Nano-Oscillator Linewidths Driven by Spin-Polarized Currents: A Micromagnetic Analysis. IEEE Transactions on Magnetics, 2009, 45, 3426-3429.	2.1	5
82	Micromagnetic analysis of current-driven DW dynamics along rough strips with high perpendicular anisotropy at room temperature. Journal of Magnetism and Magnetic Materials, 2012, 324, 3542-3547.	2.3	5
83	Asymmetric driven dynamics of Dzyaloshinskii domain walls in ultrathin ferromagnetic strips with perpendicular magnetic anisotropy. Journal of Magnetism and Magnetic Materials, 2016, 409, 155-162.	2.3	5
84	Current driven domain wall dynamics in ferrimagnetic strips explained by means of a two interacting sublattices model. AIP Advances, 2020, 10, 015202.	1.3	5
85	Thermal activation in Permalloy nanorectangles at room temperature. Physica B: Condensed Matter, 2006, 372, 286-289.	2.7	4
86	Current-driven domain wall motion along ferromagnetic strips with periodically-modulated perpendicular anisotropy. Journal of Applied Physics, 2018, 123, .	2.5	4
87	Influence of Eddy Currents on Reversal Processes in Nanocubes Depending on Size. IEEE Transactions on Magnetics, 2004, 40, 2119-2121.	2.1	3
88	The Role of the Oersted Field on the Current-Driven Domain Wall Dynamics Along Wires With Square Cross Section. IEEE Transactions on Magnetics, 2013, 49, 3211-3214.	2.1	3
89	Current-driven domain wall motion based memory devices: Application to a ratchet ferromagnetic strip. AIP Advances, 2018, 8, 047302.	1.3	3
90	Current-Driven Skyrmion Dynamics Along Curved Tracks. IEEE Transactions on Magnetics, 2019, 55, 1-8.	2.1	3

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91	Micromagnetic Modeling of All Optical Switching of Ferromagnetic Thin Films: The Role of Inverse Faraday Effect and Magnetic Circular Dichroism. Applied Sciences (Switzerland), 2020, 10, 1307.	2.5	3
92	A comparison of spin-polarized current driven magnetization reversal in Co/Cu/Co magnetic multilayers. Physica B: Condensed Matter, 2006, 372, 294-298.	2.7	2
93	A micromagnetic study of the oscillations of pinned domain walls in magnetic ribbons. Journal of Magnetism and Magnetic Materials, 2007, 316, e295-e298.	2.3	2
94	Micromagnetic study of spin-transfer driven ferromagnetic resonance: Equivalent circuit. Journal of Applied Physics, 2009, 106, .	2.5	2
95	Micromagnetic simulations of domain wall depinning forced byÂoscillating fields. Applied Physics A: Materials Science and Processing, 2010, 100, 501-504.	2.3	2
96	Chiral-triggered magnetization switching in patterned media. Applied Physics Letters, 2017, 110, 072407.	3.3	2
97	Novel interpretation of recent experiments on the dynamics of domain walls along ferrimagnetic strips. Journal of Physics Condensed Matter, 2020, 32, 465803.	1.8	2
98	Micromagnetic dynamic computations including eddy currents. , 0, , .		1
99	Dynamics and angular dependence of magnetization reversal in nanosquares. Journal Physics D: Applied Physics, 2003, 36, 1458-1463.	2.8	1
100	Steady-state configurations of Dzyaloshinskii domain walls driven by field and current. Journal of Magnetism and Magnetic Materials, 2017, 423, 405-410.	2.3	1
101	Micromagnetic Modeling of All-Optical Switching. IEEE Transactions on Magnetics, 2019, 55, 1-6.	2.1	1
102	Joule heating and its role in current-assisted domain wall depinning in nanostrips. , 2020, , 325-360.		1
103	A strategy for the design of skyrmion racetrack memories. , 0, .		1
104	Current-Driven Domain Wall Motion in Curved Ferrimagnetic Strips Above and Below the Angular Momentum Compensation. Frontiers in Physics, 2021, 9, .	2.1	1
105	Effect of thermal activation on the angular dependence of micromagnetic switching in nanosquares. , 0, , .		0
106	Computational study of low-field domain wall mobility in nanowires rectangular cross section. , 0, , .		0
107	Temperature dependence of spontaneous magnetization using a continuous model. , 0, , .		0
108	Micromagnetic analysis of the magnetization dynamics driven by the Oersted field in permalloy nanorings. Journal of Applied Physics, 2012, 111, 07D103.	2.5	0

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109	Low-Dimensional Magnetic Systems. Advances in Condensed Matter Physics, 2012, 2012, 1-1.	1.1	0
110	Intrinsic and Thermal Linewidths of Spin-Transfer-Driven Vortex Self-Oscillations. IEEE Transactions on Magnetics, 2013, 49, 3203-3206.	2.1	0
111	Micromagnetic analysis of geometrically controlled current-driven magnetization switching. AIP Advances, 2017, 7, 055909.	1.3	0
112	Effect of canting in the domains on magnetic domain wall motion. , 2017, , .		0
113	Controlled Current-Driven Bi-Directional Motion of Trains of Domain Walls Along a Ferromagnetic Strip. IEEE Transactions on Magnetics, 2019, 55, 1-4.	2.1	0
114	Current-induced dynamics of chiral domain walls in magnetic heterostructures. , 2020, , 297-324.		0