Mario Carpentieri

List of Publications by Year
in descending order

105 papers	3,025 citations	147801 31 h-index	182427 51 g-index
112 all docs	112 docs citations	112 times ranked	2364 citing authors

#	Article	IF	Citations
1	Applications of Magnetic Materials and Spintronics in Smart Systems. , 2022, , 95-103.		1
2	Computing with Injection-Locked Spintronic Diodes. Physical Review Applied, 2022, 17, .	3.8	9
3	Spintronics-compatible Approach to Solving Maximum-Satisfiability Problems with Probabilistic Computing, Invertible Logic, and Parallel Tempering. Physical Review Applied, 2022, 17, .	3.8	14
4	Antiferromagnetic Parametric Resonance Driven by Voltage-Controlled Magnetic Anisotropy. Physical Review Applied, 2022, 17, .	3.8	6
5	Massively parallel probabilistic computing with sparse Ising machines. Nature Electronics, 2022, 5, 460-468.	26.0	59
6	Modulation, Injection Locking, and Pulling in an Antiferromagnetic Spin-Orbit Torque Oscillator. IEEE Transactions on Magnetics, 2021, 57, 1-6.	2.1	3
7	Reliability of Neural Networks Based on Spintronic Neurons. IEEE Magnetics Letters, 2021, 12, 1-5.	1.1	8
8	Micromagnetic understanding of switching and self-oscillations in ferrimagnetic materials. Applied Physics Letters, 2021, 118, 052403.	3.3	8
9	Perspectives on spintronic diodes. Applied Physics Letters, 2021, 118, .	3.3	24
10	Simulation Analysis of DMTJ-Based STT-MRAM Operating at Cryogenic Temperatures. IEEE Transactions on Magnetics, 2021, 57, 1-6.	2.1	16
11	Field-free spin-orbit torque-induced switching ofÂperpendicular magnetization in a ferrimagnetic layer with a vertical composition gradient. Nature Communications, 2021, 12, 4555.	12.8	105
12	Role of magnetic skyrmions for the solution of the shortest path problem. Journal of Magnetism and Magnetic Materials, 2021, 532, 167977.	2.3	6
13	Robustness of using degree of match in performing analog multiplication with spin-torque oscillators. Solid-State Electronics, 2021, 183, 108045.	1.4	2
14	Field-Free Magnetic Tunnel Junction for Logic Operations Based on Voltage-Controlled Magnetic Anisotropy. IEEE Magnetics Letters, 2021, 12, 1-4.	1.1	4
15	Automatic Crack Classification by Exploiting Statistical Event Descriptors for Deep Learning. Applied Sciences (Switzerland), 2021, 11, 12059.	2.5	13
16	Computing with Invertible Logic: Combinatorial Optimization with Probabilistic Bits. , 2021, , .		5
17	Unified Framework for Micromagnetic Modeling of Ferro-, Ferri-, and Antiferromagnetic Materials at Mesoscopic Scale: Domain Wall Dynamics as a Case Study. IEEE Magnetics Letters, 2020, 11, 1-5.	1.1	5
18	Electrically tunable detector of THz-frequency signals based on an antiferromagnet. Applied Physics Letters, 2020, 117, .	3.3	31

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19	Impact of Scaling on Physical Unclonable Function Based on Spinâ€“Orbit Torque. IEEE Magnetics Letters, 2020, 11, 1-5.	1.1	4
20	Spinâ€“orbit torque based physical unclonable function. Journal of Applied Physics, 2020, 128, .	2.5	35
21	Thermal generation, manipulation and thermoelectric detection of skyrmions. Nature Electronics, 2020, 3, 672-679.	26.0	86
22	Low-Frequency Nonresonant Rectification in Spin Diodes. Physical Review Applied, 2020, 14, .	3.8	5
23	Dual-band microwave detector based on magnetic tunnel junctions. Applied Physics Letters, 2020, 117, .	3.3	11
24	Assessment of STT-MRAMs based on double-barrier MTJs for cache applications by means of a device-to-system level simulation framework. The Integration VLSI Journal, 2020, 71, 56-69.	2.1	22
25	Dynamics of domain-wall motion driven by spin-orbit torque in antiferromagnets. Physical Review B, 2020, 101, .	3.2	33
26	Domain periodicity in an easy-plane antiferromagnet with Dzyaloshinskii-Moriya interaction. Physical Review B, 2020, 102, .	3.2	6
27	Exploiting Double-Barrier MTJs for Energy-Efficient Nanoscaled STT-MRAMs. , 2019, , .		6
28	Experimental Demonstration of Spintronic Broadband Microwave Detectors and Their Capability for Powering Nanodevices. Physical Review Applied, 2019, 11, .	3.8	49
29	Compact Modeling of Perpendicular STT-MTJs With Double Reference Layers. IEEE Nanotechnology Magazine, 2019, 18, 1063-1070.	2.0	25
30	Configurational entropy of magnetic skyrmions as an ideal gas. Physical Review B, 2019, 99, .	3.2	17
31	Correction of Phase Errors in a Spin-Wave Transmission Line by Nonadiabatic Parametric Pumping. Physical Review Applied, 2019, 11, .	3.8	3
32	Anatomy of Skyrmionic Textures in Magnetic Multilayers. Advanced Materials, 2019, 31, e1807683.	21.0	75
33	Micromagnetic modeling of terahertz oscillations in an antiferromagnetic material driven by the spin Hall effect. Physical Review B, 2019, 99, .	3.2	49
34	Theory of nonreciprocal spin-wave excitations in spin Hall oscillators with Dzyaloshinskii-Moriya interaction. Physical Review B, 2018, 97, .	3.2	5
35	Amplification and stabilization of large-amplitude propagating spin waves by parametric pumping. Applied Physics Letters, 2018, 112, .	3.3	21
36	Origin of temperature and field dependence of magnetic skyrmion size in ultrathin nanodots. Physical Review B, 2018, 97, .	3.2	77

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37	Description of Statistical Switching in Perpendicular STT-MRAM Within an Analytical and Numerical Micromagnetic Framework. IEEE Transactions on Magnetics, 2018, 54, 1-10.	2.1	18
38	A Variation-Aware Timing Modeling Approach for Write Operation in Hybrid CMOS/STT-MTJ Circuits. IEEE Transactions on Circuits and Systems I: Regular Papers, 2018, 65, 1086-1095.	5.4	41
39	Micromagnetic Analysis of Statistical Switching in Perpendicular Magnetic Tunnel Junctions With Double Reference Layers. IEEE Magnetics Letters, 2018, 9, 1-5.	1.1	14
40	Micromagnetic simulations of spin-Hall driven dynamics in an antiferromagnet. , 2018, , .		0
41	Micromagnetic understanding of the skyrmion Hall angle current dependence in perpendicularly magnetized ferromagnets. Physical Review B, 2018, 98, .	3.2	16
42	Ultrahigh detection sensitivity exceeding 105 V/W in spin-torque diode. Applied Physics Letters, 2018, 113, .	3.3	43
43	Phase Coherence Index, HHT and Wavelet Analysis to Extract Features from Active and Passive Distribution Networks. Applied Sciences (Switzerland), 2018, 8, 71.	2.5	6
44	Chiral skyrmions in an anisotropy gradient. Physical Review B, 2018, 98, .	3.2	39
45	Statistics to Detect Low-Intensity Anomalies in PV Systems. Energies, 2018, 11, 30.	3.1	6
46	Observation of Magnetic Radial Vortex Nucleation in a Multilayer Stack with Tunable Anisotropy. Scientific Reports, 2018, 8, 7180.	3.3	28
47	Influence of the Second-Order Uniaxial Anisotropy on the Dynamical Proprieties of Magnetic Tunnel Junctions. IEEE Transactions on Magnetics, 2017, 53, 1-7.	2.1	5
48	Electrical detection of single magnetic skyrmion at room temperature. AIP Advances, 2017, 7, .	1.3	34
49	Micromagnetic Analysis of Statistical Switching in Perpendicular STT-MRAM With Interfacial Dzyaloshinskiiâ€“Moriya Interaction. IEEE Transactions on Magnetics, 2017, 53, 1-5.	2.1	4
50	Variability-Aware Analysis of Hybrid MTJ/CMOS Circuits by a Micromagnetic-Based Simulation Framework. IEEE Nanotechnology Magazine, 2017, 16, 160-168.	2.0	28
51	Rate of entropy model for irreversible processes in living systems. Scientific Reports, 2017, 7, 9134.	3.3	24
52	Cylindrical and spiral dynamics driven by spin-transfer torque in perpendicularly magnetized materials with Dzyaloshinskii-Moriya Interaction. , 2017, , .		0
53	Performance of synthetic antiferromagnetic racetrack memory: domain wall versus skyrmion. Journal Physics D: Applied Physics, 2017, 50, 325302.	2.8	86
54	PV penetration in distribution lines of smart grids. , 2017, , .		0

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55	Excitation of Spin Waves in an In-Plane-Magnetized Ferromagnetic Nanowire Using Voltage-Controlled Magnetic Anisotropy. Physical Review Applied, 2017, 7, .	3.8	23
56	A Compact Model with Spin-Polarization Asymmetry for Nanoscaled Perpendicular MTJs. IEEE Transactions on Electron Devices, 2017, 64, 4346-4353.	3.0	40
57	Fourier, Wavelet, and Hilbert-Huang Transforms for Studying Electrical Users in the Time and Frequency Domain. Energies, 2017, 10, 188.	3.1	17
58	Indices to Study the Electrical Power Signals in Active and Passive Distribution Lines: A Combined Analysis with Empirical Mode Decomposition. Energies, 2016, 9, 211.	3.1	9
59	Spin-Hall nano-oscillator with oblique magnetization and Dzyaloshinskii-Moriya interaction as generator of skyrmions and nonreciprocal spin-waves. Scientific Reports, 2016, 6, 36020.	3.3	38
60	Giant spin-torque diode sensitivity in the absence of bias magnetic field. Nature Communications, 2016, 7, 11259.	12.8	123
61	Scalable synchronization of spin-Hall oscillators in out-of-plane field. Applied Physics Letters, 2016, 109, .	3.3	18
62	Magnetic skyrmions: from fundamental to applications. Journal Physics D: Applied Physics, 2016, 49, 423001.	2.8	318
63	Magnetic Radial Vortex Stabilization and Efficient Manipulation Driven by the Dzyaloshinskii-Moriya Interaction and Spin-Transfer Torque. Physical Review Letters, 2016, 117, 087204.	7.8	71
64	Vector hysteresis model to describe micromagnetic structures. , 2016, , .		1
65	Analytical and numerical solution to the nonlinear cubic Duffing equation: An application to electrical signal analysis of distribution lines. Applied Mathematical Modelling, 2016, 40, 9152-9164.	4.2	14
66	A framework for the damage evaluation of acoustic emission signals through Hilbertâ€“Huang transform. Mechanical Systems and Signal Processing, 2016, 75, 109-122.	8.0	75
67	Skyrmion based microwave detectors and harvesting. Applied Physics Letters, 2015, 107, .	3.3	86
68	Topological, non-topological and instanton droplets driven by spin-transfer torque in materials with perpendicular magnetic anisotropy and Dzyaloshinskiiâ€“Moriya Interaction. Scientific Reports, 2015, 5, 16184.	3.3	43
69	Micromagnetic modelling of synchronized three terminal magnetic tunnel junctions. , 2015, , .		0
70	Micro-focused Brillouin light scattering study of the magnetization dynamics driven by Spin Hall effect in a transversely magnetized NiFe nanowire. Journal of Applied Physics, 2015, 117, 17D504.	2.5	6
71	Intrinsic synchronization of an array of spin-torque oscillators driven by the spin-Hall effect. Journal of Applied Physics, 2015, 117, 17E504.	2.5	19
72	Skyrmion motion induced by spin-Hall current in constrained geometries. , 2015, , .		0

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73	Influence of the Dzyaloshinskii-Moriya interaction on the spin-torque diode effect. Journal of Applied Physics, 2014, 115, 17C730.	2.5	22
74	Micromagnetic Study of Electrical-Field-Assisted Magnetization Switching in MTJ Devices. IEEE Transactions on Magnetics, 2014, 50, 1-4.	2.1	8
75	Modeling of hysteresis in magnetic multidomains. Physica B: Condensed Matter, 2014, 435, 62-65.	2.7	19
76	Spin-Hall nano-oscillator: A micromagnetic study. Applied Physics Letters, 2014, 105, .	3.3	55
77	Spin-torque oscillators based on the excitation of bubble-like solitons. , 2014, , .		0
78	Spin-Torque Oscillators Using Perpendicular Anisotropy in CoFeBâ€"MgO Magnetic Tunnel Junctions. IEEE Transactions on Magnetics, 2013, 49, 3151-3154.	2.1	10
79	Injection locking at zero field in two free layer spin-valves. Applied Physics Letters, 2013, 102, .	3.3	8
80	Switching of a single ferromagnetic layer driven by spin Hall effect. Applied Physics Letters, 2013, 102, .	3.3	77
81	Dynamical properties of three terminal magnetic tunnel junctions: Spintronics meets spin-orbitronics. Applied Physics Letters, 2013, 103, .	3.3	18
82	Noise-Like Sequences to Resonant Excite the Writing of a Universal Memory Based on Spin-Transfer-Torque MRAM. IEEE Transactions on Magnetics, 2012, 48, 2407-2414.	2.1	17
83	Micromagnetic simulations using Graphics Processing Units. Journal Physics D: Applied Physics, 2012, 45, 323001.	2.8	117
84	Semi-implicit integration scheme for Landauâ€"Lifshitzâ€"Gilbert-Slonczewski equation. Journal of Applied Physics, 2012, 111, .	2.5	63
85	Non-Adlerian phase slip and nonstationary synchronization of spin-torque oscillators to a microwave source. Physical Review B, 2012, 86, .	3.2	21
86	High frequency spin-torque-oscillators with reduced perpendicular torque effect based on asymmetric vortex polarizer. Journal of Applied Physics, 2011, 110, .	2.5	37
87	Spreading sequences for fast switching process in spin-valve nanopillars. Applied Physics Letters, 2011, 98, 122504.	3.3	5
88	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
89	A numerical solution of the magnetization reversal modeling in a permalloy thin film using fifth order Rungeâ€"Kutta method with adaptive step size control. Physica B: Condensed Matter, 2008, 403, 464-468.	2.7	58
90	Coupling of spin-transfer torque to microwave magnetic field: A micromagnetic modal analysis. Journal of Applied Physics, 2007, 101, 053914.	2.5	31

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91	Magnetization dynamics driven by spin-polarized current in nanomagnets. Journal of Magnetism and Magnetic Materials, 2007, 316, 488-491.	2.3	26
92	Spin-torque switching in Py/Cu/Py and Py/Cu/CoPt spin-valve nanopillars. Journal of Magnetism and Magnetic Materials, 2007, 316, 492-495.	2.3	12
93	Micromagnetic Modeling of Magnetization Reversal in Nano-Scale Point Contact Devices. IEEE Transactions on Magnetics, 2007, 43, 2938-2940.	2.1	12
94	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
95	About identification of Scalar Preisach functions of soft magnetic materials. IEEE Transactions on Magnetics, 2006, 42, 923-926.	2.1	26
96	Vector Hysteresis Model at Micromagnetic Scale. IEEE Transactions on Magnetics, 2006, 42, 3138-3140.	2.1	9
97	Analytical solution of Everett integral using Lorentzian Preisach function approximation. Journal of Magnetism and Magnetic Materials, 2006, 300, 451-470.	2.3	16
98	Galois sequences in the non-destructive evaluation of metallic materials. Measurement Science and Technology, 2006, 17, 2973-2979.	2.6	25
99	Trends in spin-transfer-driven magnetization dynamics of CoFeâˆ•AlOâˆ•Py and CoFeâˆ•MgOâˆ•Py magnetic tunnel junctions. Applied Physics Letters, 2006, 89, 262509.	3.3	27
100	Micromagnetic computations of spin polarized current-driven magnetization processes. Journal of Magnetism and Magnetic Materials, 2005, 286, 381-385.	2.3	52
101	Spin-polarized current-driven switching in permalloy nanostructures. Journal of Applied Physics, 2005, 97, 10E302.	2.5	21
102	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
103	State-independent hypothesis to model the behavior of magnetic materials. Journal of Magnetism and Magnetic Materials, 2004, 280, 158-163.	2.3	22
104	Super-Lorentzian Preisach function and its applicability to model scalar hysteresis. Physica B: Condensed Matter, 2004, 343, 121-126.	2.7	3
105	A fuzzy model of scalar hysteresis on soft magnetic materials. Physica B: Condensed Matter, 2004, 343, 132-136.	2.7	10