Riccardo Tomasello

List of Publications by Year in Descending Order

84 papers	2,602 citations	26 h-index	49 g-index
102 ext. papers	3,337 ext. citations	5 avg, IF	5.21 L-index

#	Paper	IF	Citations
84	Field-Free Magnetic Tunnel Junction for Logic Operations Based on Voltage-Controlled Magnetic Anisotropy. *IEEE Magnetics Letters*, **2021**, 12, 1-4	1.6	0
83	Perspectives on spintronic diodes. *Applied Physics Letters*, **2021**, 118, 160502	3.4	6
82	Observation of current-induced switching in non-collinear antiferromagnetic IrMn by differential voltage measurements. *Nature Communications*, **2021**, 12, 3828	17.4	6
81	Field-free spin-orbit torque-induced switching of perpendicular magnetization in a ferrimagnetic layer with a vertical composition gradient. *Nature Communications*, **2021**, 12, 4555	17.4	19
80	The promise of spintronics for unconventional computing. *Journal of Magnetism and Magnetic Materials*, **2021**, 521, 167506	2.8	18
79	Study of the robustness of neural networks based on spintronic neurons. *IEEE Magnetics Letters*, **2021**, 1-1	1.6	3
78	Dynamics of magnetic skyrmions **2021**, 233-254		
77	Micromagnetic understanding of switching and self-oscillations in ferrimagnetic materials. *Applied Physics Letters*, **2021**, 118, 052403	3.4	2
76	Role of magnetic skyrmions for the solution of the shortest path problem. *Journal of Magnetism and Magnetic Materials*, **2021**, 532, 167977	2.8	4
75	Imaging the spin chirality of ferrimagnetic Nel skyrmions stabilized on topological antiferromagnetic Mn3Sn. *Physical Review Materials*, **2021**, 5,	3.2	4
74	Automatic Crack Classification by Exploiting Statistical Event Descriptors for Deep Learning. *Applied Sciences (Switzerland)*, **2021**, 11, 12059	2.6	0
73	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	1.4	11
72	Electrical manipulation of the magnetic order in antiferromagnetic PtMn pillars. *Nature Electronics*, **2020**, 3, 92-98	28.4	29
71	Controlling the deformation of antiferromagnetic skyrmions in the high-velocity regime. *Physical Review B*, **2020**, 101,	3.3	20
70	Dynamics of domain-wall motion driven by spin-orbit torque in antiferromagnets. *Physical Review B*, **2020**, 101,	3.3	19
69	Domain periodicity in an easy-plane antiferromagnet with Dzyaloshinskii-Moriya interaction. *Physical Review B*, **2020**, 102,	3.3	3
68	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	1.6	2

67	Magnetization reversal signatures of hybrid and pure Néel skyrmions in thin film multilayers. *APL Materials*, **2020**, 8, 111112	5.7	2
66	Thermal generation, manipulation and thermoelectric detection of skyrmions. *Nature Electronics*, **2020**, 3, 672-679	28.4	33
65	Low-Frequency Nonresonant Rectification in Spin Diodes. *Physical Review Applied*, **2020**, 14,	4.3	3
64	Dual-band microwave detector based on magnetic tunnel junctions. *Applied Physics Letters*, **2020**, 117, 072409	3.4	6
63	Coexistence of distinct skyrmion phases observed in hybrid ferromagnetic/ferrimagnetic multilayers. *Nature Communications*, **2020**, 11, 6365	17.4	13
62	Experimental Demonstration of Spintronic Broadband Microwave Detectors and Their Capability for Powering Nanodevices. *Physical Review Applied*, **2019**, 11,	4.3	32
61	Configurational entropy of magnetic skyrmions as an ideal gas. *Physical Review B*, **2019**, 99,	3.3	11
60	Sparse neuromorphic computing based on spin-torque diodes. *Applied Physics Letters*, **2019**, 114, 192402	3.4	18
59	Voltage-Controlled Spintronic Stochastic Neuron Based on a Magnetic Tunnel Junction. *Physical Review Applied*, **2019**, 11,	4.3	36
58	Stabilizing zero-field skyrmions in Ir/Fe/Co/Pt thin film multilayers by magnetic history control. *Applied Physics Letters*, **2019**, 114, 072401	3.4	26
57	Anatomy of Skyrmionic Textures in Magnetic Multilayers. *Advanced Materials*, **2019**, 31, e1807683	24	41
56	Exploiting Double-Barrier MTJs for Energy-Efficient Nanoscaled STT-MRAMs **2019**,		3
55	Enhanced Broad-band Radio Frequency Detection in Nanoscale Magnetic Tunnel Junction by Interface Engineering. *ACS Applied Materials & Interfaces*, **2019**, 11, 29382-29387	9.5	8
54	Origin of temperature and field dependence of magnetic skyrmion size in ultrathin nanodots. *Physical Review B*, **2018**, 97,	3.3	53
53	Current-driven domain wall dynamics in ferromagnetic layers synthetically exchange-coupled by a spacer: A micromagnetic study. *Journal of Applied Physics*, **2018**, 123, 013901	2.5	12
52	Description of Statistical Switching in Perpendicular STT-MRAM Within an Analytical and Numerical Micromagnetic Framework. *IEEE Transactions on Magnetics*, **2018**, 54, 1-10	2	11
51	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	3.9	26
50	Micromagnetic Analysis of Statistical Switching in Perpendicular Magnetic Tunnel Junctions With Double Reference Layers. *IEEE Magnetics Letters*, **2018**, 9, 1-5	1.6	14

49	Chiral skyrmions in an anisotropy gradient. *Physical Review B*, **2018**, 98,	3.3	23
48	Observation of Magnetic Radial Vortex Nucleation in a Multilayer Stack with Tunable Anisotropy. *Scientific Reports*, **2018**, 8, 7180	4.9	20
47	Micromagnetic understanding of the skyrmion Hall angle current dependence in perpendicularly magnetized ferromagnets. *Physical Review B*, **2018**, 98,	3.3	12
46	Ultrahigh detection sensitivity exceeding 105 V/W in spin-torque diode. *Applied Physics Letters*, **2018**, 113, 102401	3.4	29
45	Comparative study between linear and non-linear frequency-modulated pulse-compression thermography. *Applied Optics*, **2018**, 57, D32-D39	1.7	29
44	Influence of the Second-Order Uniaxial Anisotropy on the Dynamical Proprieties of Magnetic Tunnel Junctions. *IEEE Transactions on Magnetics*, **2017**, 53, 1-7	2	3
43	Electrical detection of single magnetic skyrmion at room temperature. *AIP Advances*, **2017**, 7, 056022	1.5	28
42	Micromagnetic Analysis of Statistical Switching in Perpendicular STT-MRAM With Interfacial Dzyaloshinskii–Moriya Interaction. *IEEE Transactions on Magnetics*, **2017**, 53, 1-5	2	4
41	Variability-Aware Analysis of Hybrid MTJ/CMOS Circuits by a Micromagnetic-Based Simulation Framework. *IEEE Nanotechnology Magazine*, **2017**, 16, 160-168	2.6	22
40	Description of statistical switching in perpendicular STT-MRAM within a numerical micromagnetic framework **2017**,		1
39	A variation-aware simulation framework for hybrid CMOS/spintronic circuits **2017**,		3
38	Performance of synthetic antiferromagnetic racetrack memory: domain wall versus skyrmion. *Journal Physics D: Applied Physics*, **2017**, 50, 325302	3	54
37	Excitation of Spin Waves in an In-Plane-Magnetized Ferromagnetic Nanowire Using Voltage-Controlled Magnetic Anisotropy. *Physical Review Applied*, **2017**, 7,	4.3	12
36	On the R relaxometry in complex multi-peak multi-Echo chemical shift-based water-fat quantification: Applications to the neuromuscular diseases. *Magnetic Resonance Imaging*, **2017**, 35, 4-14	3.3	3
35	**2017**,		3
34	A Compact Model with Spin-Polarization Asymmetry for Nanoscaled Perpendicular MTJs. *IEEE Transactions on Electron Devices*, **2017**, 64, 4346-4353	2.9	26
33	Magnetic Radial Vortex Stabilization and Efficient Manipulation Driven by the Dzyaloshinskii-Moriya Interaction and Spin-Transfer Torque. *Physical Review Letters*, **2016**, 117, 087204	7.4	53
32	A framework for the damage evaluation of acoustic emission signals through Hilbert–Huang transform. *Mechanical Systems and Signal Processing*, **2016**, 75, 109-122	7.8	53

31	Spin-Hall nano-oscillator with oblique magnetization and Dzyaloshinskii-Moriya interaction as generator of skyrmions and nonreciprocal spin-waves. *Scientific Reports*, **2016**, 6, 36020	4.9	25
30	Giant spin-torque diode sensitivity in the absence of bias magnetic field. *Nature Communications*, **2016**, 7, 11259	17.4	89
29	Nanomagnetic logic with non-uniform states of clocking. *Journal Physics D: Applied Physics*, **2016**, 49, 145001	3	9
28	Magnetic skyrmions: from fundamental to applications. *Journal Physics D: Applied Physics*, **2016**, 49, 423001	3	219
27	Intrinsic synchronization of an array of spin-torque oscillators driven by the spin-Hall effect. *Journal of Applied Physics*, **2015**, 117, 17E504	2.5	14
26	Spintronic Oscillators Based on Spin-Transfer Torque and Spin-Orbit Torque. *Handbook of Surface Science*, **2015**, 5, 297-334		1
25	In-plane rotation of magnetic stripe domains in Fe1−xGax thin films. *Physical Review B*, **2015**, 92,	3.3	42
24	Skyrmion based microwave detectors and harvesting. *Applied Physics Letters*, **2015**, 107, 262401	3.4	64
23	Topological, non-topological and instanton droplets driven by spin-transfer torque in materials with perpendicular magnetic anisotropy and Dzyaloshinskii-Moriya Interaction. *Scientific Reports*, **2015**, 5, 16184	4.9	35
22	A strategy for the design of skyrmion racetrack memories. *Scientific Reports*, **2014**, 4, 6784	4.9	484
21	Micromagnetic analysis of dynamical bubble-like solitons based on the time domain evolution of the topological density. *Journal of Applied Physics*, **2014**, 115, 17D139	2.5	10
20	Switching Properties in Magnetic Tunnel Junctions With Interfacial Perpendicular Anisotropy: Micromagnetic Study. *IEEE Transactions on Magnetics*, **2014**, 50, 1-5	2	21
19	Hysteretic Synchronization in Spin-Torque Nanocontact Oscillators: A Micromagnetic Study. *IEEE Nanotechnology Magazine*, **2014**, 13, 532-536	2.6	9
18	A generalized tool for accurate time-domain separation of excited modes in spin-torque oscillators. *Journal of Applied Physics*, **2014**, 115, 17D108	2.5	12
17	Self-Modulated Soliton Modes Excited in a Nanocontact Spin-Torque Oscillator. *IEEE Magnetics Letters*, **2014**, 5, 1-4	1.6	20
16	Influence of the Dzyaloshinskii-Moriya interaction on the spin-torque diode effect. *Journal of Applied Physics*, **2014**, 115, 17C730	2.5	17
15	Micromagnetic Study of Electrical-Field-Assisted Magnetization Switching in MTJ Devices. *IEEE Transactions on Magnetics*, **2014**, 50, 1-4	2	8
14	Micromagnetic Study of Spin-Transfer-Driven Vortex Dipole and Vortex Quadrupole Dynamics. *IEEE Transactions on Magnetics*, **2014**, 50, 1-4	2	6

13	Chirp Spectroscopy Applied to the Characterization of Ferromagnetic Resonance in Magnetic Tunnel Junctions. *IEEE Transactions on Magnetics*, **2014**, 50, 1-5	2	
12	Spin transfer nano-oscillators. *Nanoscale*, **2013**, 5, 2219-31	7.7	119
11	Injection locking at zero field in two free layer spin-valves. *Applied Physics Letters*, **2013**, 102, 102413	3.4	5
10	Ultralow-current-density and bias-field-free spin-transfer nano-oscillator. *Scientific Reports*, **2013**, 3, 1426	4.9	130
9	Dynamical properties of three terminal magnetic tunnel junctions: Spintronics meets spin-orbitronics. *Applied Physics Letters*, **2013**, 103, 252408	3.4	14
8	The influence of the spin-orbit torques on the current-driven domain wall motion. *AIP Advances*, **2013**, 3, 072109	1.5	11
7	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	11
6	Phase locking and frequency doubling in spin-transfer-torque oscillators with two coupled free layers. *Physical Review B*, **2012**, 86,	3.3	32
5	High-power coherent microwave emission from magnetic tunnel junction nano-oscillators with perpendicular anisotropy. *ACS Nano*, **2012**, 6, 6115-21	16.7	114
4	Spin-transfer-torque resonant switching and injection locking in the presence of a weak external microwave field for spin valves with perpendicular materials. *Physical Review B*, **2010**, 82,	3.3	33
3	Experimental evidence of self-localized and propagating spin wave modes in obliquely magnetized current-driven nanocontacts. *Physical Review Letters*, **2010**, 105, 217204	7.4	153
2	State-independent hypothesis to model the behavior of magnetic materials. *Journal of Magnetism and Magnetic Materials*, **2004**, 280, 158-163	2.8	17
1	A strategy for the design of skyrmion racetrack memories		1