Pietro Gambardella

List of Publications by Year
in descending order

111	15,109	41344 49	24258 110
papers	citations	h-index	g-index

111	111	111	9496
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Perpendicular switching of a single ferromagnetic layer induced by in-plane current injection. Nature, 2011, 476, 189-193.	27.8	2,268
2	Current-driven spin torque induced by the Rashba effect in a ferromagnetic metal layer. Nature Materials, 2010, 9, 230-234.	27.5	1,162
3	Giant Magnetic Anisotropy of Single Cobalt Atoms and Nanoparticles. Science, 2003, 300, 1130-1133.	12.6	967
4	Symmetry and magnitude of spinâ€“orbit torques in ferromagnetic heterostructures. Nature Nanotechnology, 2013, 8, 587-593.	31.5	955
5	Current-induced spin-orbit torques in ferromagnetic and antiferromagnetic systems. Reviews of Modern Physics, 2019, 91, .	45.6	899
6	Ferromagnetism in one-dimensional monatomic metal chains. Nature, 2002, 416, 301-304.	27.8	795
7	Opportunities and challenges for spintronics in the microelectronics industry. Nature Electronics, 2020, 3, 446-459.	26.0	471
8	Ultrafast magnetization switching by spin-orbit torques. Applied Physics Letters, 2014, 105, .	3.3	379
9	Reaching the magnetic anisotropy limit of a 3 d metal atom. Science, 2014, 344, 988-992.	12.6	311
10	Spin-orbit torque magnetization switching of a three-terminal perpendicular magnetic tunnel junction. Applied Physics Letters, 2014, 104, .	3.3	306
11	Unidirectional spin Hall magnetoresistance in ferromagnet/normal metal bilayers. Nature Physics, 2015, 11, 570-575.	16.7	305
12	Interplay of spin-orbit torque and thermoelectric effects in ferromagnet/normal-metal bilayers. Physical Review B, 2014, 90, .	3.2	304
13	Supramolecular control of the magnetic anisotropy inÂtwo-dimensional high-spin Fe arrays at a metalÂinterface. Nature Materials, 2009, 8, 189-193.	27.5	262
14	Current-driven magnetic domain-wall logic. Nature, 2020, 579, 214-218.	27.8	260
15	Magnetic remanence in single atoms. Science, 2016, 352, 318-321.	12.6	259
16	One-dimensional metal chains on Pt vicinal surfaces. Physical Review B, 2000, 61, 2254-2262.	3.2	224
17	Terahertz electrical writing speed in an antiferromagnetic memory. Science Advances, 2018, 4, eaar3566.	10.3	221
18	Spatially and time-resolved magnetization dynamics driven by spinâ€“orbit torques. Nature Nanotechnology, 2017, 12, 980-986.	31.5	217

#	Article	IF	Citations
19	Single-shot dynamics of spinâ€“orbit torque and spin transfer torque switching in three-terminal magnetic tunnel junctions. Nature Nanotechnology, 2020, 15, 111-117.	31.5	167
20	Fieldlike and antidamping spin-orbit torques in as-grown and annealed Ta/CoFeB/MgO layers. Physical Review B, 2014, 89, .	3.2	164
21	The 2020 magnetism roadmap. Journal Physics D: Applied Physics, 2020, 53, 453001.	2.8	162
22	Coupling Single Molecule Magnets to Ferromagnetic Substrates. Physical Review Letters, 2011, 107, 177205.	7.8	153
23	Antiferromagnetic CuMnAs multi-level memory cell with microelectronic compatibility. Nature Communications, 2017, 8, 15434.	12.8	149
24	Spin and Orbital Magnetic Moment Anisotropies of Monodispersed Bis(Phthalocyaninato)Terbium on a Copper Surface. Journal of the American Chemical Society, 2010, 132, 11900-11901.	13.7	147
25	Ultra-Fast and High-Reliability SOT-MRAM: From Cache Replacement to Normally-Off Computing. IEEE Transactions on Multi-Scale Computing Systems, 2016, 2, 49-60.	2.4	135
26	Ultra-Fast Perpendicular Spinâ€“Orbit Torque MRAM. IEEE Transactions on Magnetics, 2018, 54, 1-4.	2.1	134
27	Co growth on Pt(997): from monatomic chains to monolayer completion. Surface Science, 2000, 449, 93-103.	1.9	124
28	Chirally coupled nanomagnets. Science, 2019, 363, 1435-1439.	12.6	123
29	Orbital Specific Chirality and Homochiral Self-Assembly of Achiral Molecules Induced by Charge Transfer and Spontaneous Symmetry Breaking. Physical Review Letters, 2010, 105, 115702.	7.8	116
30	Magnetic Moment and Anisotropy of Individual Co Atoms on Graphene. Physical Review Letters, 2013, 111, 236801.	7.8	116
31	High-speed domain wall racetracks in a magnetic insulator. Nature Communications, 2019, 10, 4750.	12.8	114
32	Magnetism of individual atoms adsorbed on surfaces. Surface Science, 2009, 603, 1812-1830.	1.9	108
33	Site- and orbital-dependent charge donation and spin manipulation in electron-doped metal phthalocyanines. Nature Materials, 2013, 12, 337-343.	27.5	106
34	Magneto-Optical Detection of the Spin Hall Effect in Pt and W Thin Films. Physical Review Letters, 2017, 119, 087203.	7.8	102
35	Origin of Perpendicular Magnetic Anisotropy and Large Orbital Moment in Fe Atoms on MgO. Physical Review Letters, 2015, 115, 237202.	7.8	99
36	Magnetization switching of an MgO/Co/Pt layer by in-plane current injection. Applied Physics Letters, 2012, 100, .	3.3	85

#	Article	IF	Citations
37	Interface-Enhanced Spin-Orbit Torques and Current-Induced Magnetization Switching of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>Pd</mml:mi><mml:mo>/</mml:mo><mml:mi>Co</mml:mi><mml:mo>/</mml:mo><mml:msub> Layers. Physical Review Applied, 2017, 7, .	3.8	85
38	Magnetoresistance of heavy and light metal/ferromagnet bilayers. Applied Physics Letters, 2015, 107, .	3.3	76
39	Spin Tuning of Electron-Doped Metalâ€“Phthalocyanine Layers. Journal of the American Chemical Society, 2014, 136, 5451-5459.	13.7	74
40	SOT-MRAM 300MM Integration for Low Power and Ultrafast Embedded Memories. , 2018, , .		74
41	Electronic states and magnetism of monatomic Co and Cu wires. Physical Review B, 2000, 61, R5133-R5136.	3.2	73
42	Exchange Biasing Single Molecule Magnets: Coupling of TbPc₂ to Antiferromagnetic Layers. Nano Letters, 2012, 12, 5703-5707.	9.1	69
43	Spin-orbit torque driven chiral magnetization reversal in ultrathin nanostructures. Physical Review B, 2015, 92, .	3.2	68
44	Oxygen Dissociation by Concerted Action of Di-Iron Centers in Metalâ€“Organic Coordination Networks at Surfaces: Modeling Non-Heme Iron Enzymes. Nano Letters, 2011, 11, 5414-5420.	9.1	66
45	Finite-sized Heisenberg chains and magnetism of one-dimensional metal systems. Applied Physics A: Materials Science and Processing, 2006, 82, 385-394.	2.3	61
46	Kondo Effect in Single Atom Contacts: The Importance of the Atomic Geometry. Physical Review Letters, 2008, 101, 216802.	7.8	60
47	Magnetism of Ho and Er Atoms on Close-Packed Metal Surfaces. Physical Review Letters, 2014, 113, 237201.	7.8	55
48	Fast switching and signature of efficient domain wall motion driven by spin-orbit torques in a perpendicular anisotropy magnetic insulator/Pt bilayer. Applied Physics Letters, 2017, 111, .	3.3	55
49	Controlling the Spin of Co Atoms on Pt(111) by Hydrogen Adsorption. Physical Review Letters, 2015, 114, 106807.	7.8	52
50	Ni growth on vicinal Pt(111): low temperature exchange and formation of ordered surface alloys. Surface Science, 2001, 475, L229-L234.	1.9	49
51	Coupling of single, double, and triple-decker metal-phthalocyanine complexes to ferromagnetic and antiferromagnetic substrates. Surface Science, 2014, 630, 361-374.	1.9	49
52	Spin-orbit torque switching of an antiferromagnetic metallic heterostructure. Nature Communications, 2020, 11, 5715.	12.8	49
53	Selfâ€Assembled Nanometerâ€Scale Magnetic Networks on Surfaces: Fundamental Interactions and Functional Properties. Advanced Functional Materials, 2011, 21, 1212-1228.	14.9	48
54	Magnetism in monatomic metal wires. Journal of Physics Condensed Matter, 2003, 15, S2533-S2546.	1.8	44

#	Article	IF	Citations
55	Yield and Shape Selection of Graphene Nanoislands Grown on Ni(111). Nano Letters, 2012, 12, 4431-4436.	9.1	43
56	Field-free switching of magnetic tunnel junctions driven by spinâ€“orbit torques at sub-ns timescales. Applied Physics Letters, 2020, 116, .	3.3	43
57	X-ray ferromagnetic resonance spectroscopy. Applied Physics Letters, 2005, 87, 152503.	3.3	42
58	Current-driven dynamics and ratchet effect of skyrmion bubbles in a ferrimagnetic insulator. Nature Nanotechnology, 2022, 17, 834-841.	31.5	39
59	Coexistence of Bloch and NÃ©el walls in a collinear antiferromagnet. Physical Review B, 2021, 103, .	3.2	38
60	A multi-state memory device based on the unidirectional spin Hall magnetoresistance. Applied Physics Letters, 2017, 110, .	3.3	37
61	Giant orbital Hall effect and orbital-to-spin conversion in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mn>3</mml:mn><mml:mi>d</mml:mi></mml:math>, <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mn>5</mml:mn><mml:mi>d</mml:mi></mml:math>, and <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mn>4</mml:mn><mml:mi>f</mml:mi></mml:math>	3.6	37
62	HREELS study of CO oxidation on Ag(001) by O2 or O. Surface Science, 1997, 374, 1-8.	1.9	34
63	Collision induced desorption and dissociation of O2 chemisorbed on Ag(001). Journal of Chemical Physics, 1998, 109, 2490-2502.	3.0	33
64	Longitudinal and transverse electron paramagnetic resonance in a scanning tunneling microscope. Science Advances, 2020, 6, .	10.3	33
65	Single-atom electron paramagnetic resonance in a scanning tunneling microscope driven by a radio-frequency antenna at 4 K. Physical Review Research, 2020, 2, .	3.6	32
66	Spin-orbit torque switching of magnetic tunnel junctions for memory applications. Journal of Magnetism and Magnetic Materials, 2022, 562, 169692.	2.3	32
67	Quenching of an antiferromagnet into high resistivity states using electrical or ultrashort optical pulses. Nature Electronics, 2021, 4, 30-37.	26.0	31
68	Chiral Coupling between Magnetic Layers with Orthogonal Magnetization. Physical Review Letters, 2021, 127, 167202.	7.8	31
69	Simultaneous in-plane and out-of-plane exchange bias using a single antiferromagnetic layer resolved by x-ray magnetic circular dichroism. Applied Physics Letters, 2009, 95, .	3.3	30
70	Control of Nonlocal Magnon Spin Transport via Magnon Drift Currents. Physical Review Letters, 2021, 126, 257201.	7.8	30
71	Effects of transition metal spacers on spin-orbit torques, spin Hall magnetoresistance, and magnetic anisotropy of Pt/Co bilayers. Physical Review B, 2019, 100, .	3.2	29
72	Interplay of Voltage Control of Magnetic Anisotropy, Spin-Transfer Torque, and Heat in the Spin-Orbit-Torque Switching of Three-Terminal Magnetic Tunnel Junctions. Physical Review Applied, 2021, 15, .	3.8	29

#	Article	IF	Citations
73	Complex Magnetic Exchange Coupling between Co Nanostructures and Ni(111) across Epitaxial Graphene. ACS Nano, 2016, 10, 1101-1107.	14.6	27
74	Real-time Hall-effect detection of current-induced magnetization dynamics in ferrimagnets. Nature Communications, 2021, 12, 656.	12.8	26
75	Spin currents during ultrafast demagnetization of ferromagnetic bilayers. Journal of Physics Condensed Matter, 2017, 29, 384002.	1.8	25
76	Enhanced collision induced desorption and dissociation of O2 chemisorbed on Ag(001) at grazing incidence. Chemical Physics Letters, 1997, 278, 245-250.	2.6	24
77	Chiral Domain Wall Injector Driven by Spinâ€“Orbit Torques. Nano Letters, 2019, 19, 5930-5937.	9.1	24
78	Spin-Flip and Element-Sensitive Electron Scattering in the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>BiAg</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></</m Alloy. Physical Review Letters, 2015, 114, 166801.	7.8	23
79	Correlated Electrons Step by Step: Itinerant-to-Localized Transition of Fe Impurities in Free-Electron Metal Hosts. Physical Review Letters, 2010, 104, 117601.	7.8	22
80	Synthetic chiral magnets promoted by the Dzyaloshinskiiâ€“Moriya interaction. Applied Physics Letters, 2020, 117, .	3.3	22
81	Longitudinal detection of ferromagnetic resonance using x-ray transmission measurements. Review of Scientific Instruments, 2009, 80, 123902.	1.3	21
82	Correlation between Electronic Configuration and Magnetic Stability in Dysprosium Single Atom Magnets. Nano Letters, 2021, 21, 8266-8273.	9.1	20
83	Effects of Oxidation on Top and Bottom Interfaces on the Electric, Magnetic, and Spin-Orbit Torque Properties of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mi>Pt</mml:mi></mml:math> / <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mi>Co</mml:mi></mml:math> / <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:msub>	3.8	19
84	Asynchronous current-induced switching of rare-earth and transition-metal sublattices in ferrimagnetic alloys. Nature Materials, 2022, 21, 640-646.	27.5	19
85	Formation of one-dimensional ordered alloy at step edges: An atomistic study of the (2Ã—1) Ni/Pt alloy on the Pt(997) surface. Surface Science, 2011, 605, 917-922.	1.9	17
86	On-surface transmetalation of metalloporphyrins. Nanoscale, 2018, 10, 21116-21122.	5.6	17
87	Quantum chains with a spin. Nature Materials, 2006, 5, 431-432.	27.5	16
88	Magnetic properties of planar nanowire arrays of Co fabricated on oxidized step-bunched silicon templates. Nanotechnology, 2012, 23, 235702.	2.6	16
89	Asymmetric velocity and tilt angle of domain walls induced by spin-orbit torques. Applied Physics Letters, 2018, 113, .	3.3	16
90	Chiral anisotropic magnetoresistance of ferromagnetic helices. Applied Physics Letters, 2018, 112, .	3.3	16

#	Article	IF	Citations
91	Substrate-Induced Stabilization and Reconstruction of Zigzag Edges in Graphene Nanoislands on Ni(111). Journal of Physical Chemistry C, 2015, 119, 4072-4078.	3.1	15
92	Field- and Current-Driven Magnetic Domain-Wall Inverter and Diode. Physical Review Applied, 2021, 15, .	3.8	12
93	Spin-orbit torques and magnetotransport properties of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Î±</mml:mi><mml:mo>â^'</mml:mo><mml:mi>Sn</mml:mi></mml:ma and <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Î²</mml:mi><mml:mo>â^'</mml:mo><mml:mi>Sn</mml:mi></mml:ma heterostructures. Physical Review B, 2021, 103, .	3.2	12
94	Electron Paramagnetic Resonance of Alkali Metal Atoms and Dimers on Ultrathin MgO. Nano Letters, 2022, 22, 4176-4181.	9.1	12
95	Accurate measurement of atomic magnetic moments by minimizing the tip magnetic field in STM-based electron paramagnetic resonance. Physical Review Research, 2021, 3, .	3.6	11
96	Multidomain Memristive Switching of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:msub><mml:mi>Pt</mml:mi><mml:mn>38</mml:mn></mml:msub><mml:msub><mml:mi>Mn</mml:mi><mml stretchy="false">[</mml:mo><mml:mi>Co</mml:mi><mml:mo>/</mml:mo><mml:mi>Ni</mml:mi><mml:msub><mml:mo stretchy="false">]</mml:mo><mml:mi>n</mml:mi></mml:msub></mml:math> Multilayers. Physical Review Applied, 2020, 14, .	3.8	10
97	Molecular Approach for Engineering Interfacial Interactions in Magnetic/Topological Insulator Heterostructures. ACS Nano, 2020, 14, 6285-6294.	14.6	9
98	Scanning nitrogen-vacancy center magnetometry in large in-plane magnetic fields. Applied Physics Letters, 2022, 120, .	3.3	9
99	Current-induced switching of YIG/Pt bilayers with in-plane magnetization due to Oersted fields. Applied Physics Letters, 2019, 114, .	3.3	8
100	Systematic study of nonmagnetic resistance changes due to electrical pulsing in single metal layers and metal/antiferromagnet bilayers. Journal of Applied Physics, 2020, 128, .	2.5	7
101	X-ray detection of ultrashort spin current pulses in synthetic antiferromagnets. Journal of Applied Physics, 2020, 127, .	2.5	6
102	Engineering the Spin-Orbit-Torque Efficiency and Magnetic Properties of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mi>Tb</mml:mi></mml:math> / <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mi>Co</mml:mi></mml:math> Ferrimagnetic Multilayers by Stacking Order. Physical Review Applied, 2022, 17, .	3.8	6
103	A two-terminal spin valve device controlled by spinâ€“orbit torques with enhanced giant magnetoresistance. Applied Physics Letters, 2021, 119, .	3.3	5
104	Observation of out-of-plane unidirectional anisotropy in MgO-capped planar nanowire arrays of Fe. Journal of Applied Physics, 2013, 114, 133903.	2.5	4
105	Asymmetric depinning of chiral domain walls in ferromagnetic trilayers. Physical Review B, 2020, 102, .	3.2	4
106	Magnetic Surfaces, Thin Films and Nanostructures. Springer Handbooks, 2020, , 625-698.	0.6	3
107	Engineering of Intrinsic Chiral Torques in Magnetic Thin Films Based on the Dzyaloshinskii-Moriya Interaction. Physical Review Applied, 2021, 16, .	3.8	3
108	Magnetic logic driven by electric current. Physics Today, 2021, 74, 62-63.	0.3	1

#	Article	IF	Citations
109	Magnetization Reversal Behaviour of Planar Nanowire Arrays of Fe. Current Nanoscience, 2013, 9, 609-614.	1.2	1
110	Performance analysis and implementation of a scanning tunneling potentiometry setup: Toward low-noise and high-sensitivity measurements of the electrochemical potential. Review of Scientific Instruments, 2021, 92, 103707.	1.3	1
111	Geometrical control of disorder-induced magnetic domains in planar synthetic antiferromagnets. Physical Review Materials, 2022, 6, .	2.4	1