Vincent Cros

List of Publications by Citations

144 papers	14,381 citations	57 h-index	119 g-index
154 ext. papers	17,033 ext. citations	7.9 avg, IF	6.7 L-index

#	Paper	IF	Citations
144	Skyrmions on the track. *Nature Nanotechnology*, **2013**, 8, 152-6	28.7	1790
143	Nucleation, stability and current-induced motion of isolated magnetic skyrmions in nanostructures. *Nature Nanotechnology*, **2013**, 8, 839-44	28.7	1044
142	Magnetic skyrmions: advances in physics and potential applications. *Nature Reviews Materials*, **2017**, 2,	73.3	841
141	Dynamics of Dzyaloshinskii domain walls in ultrathin magnetic films. *Europhysics Letters*, **2012**, 100, 57002	2.6	723
140	Additive interfacial chiral interaction in multilayers for stabilization of small individual skyrmions at room temperature. *Nature Nanotechnology*, **2016**, 11, 444-8	28.7	695
139	Neuromorphic computing with nanoscale spintronic oscillators. *Nature*, **2017**, 547, 428-431	50.4	558
138	Spin-torque building blocks. *Nature Materials*, **2014**, 13, 11-20	27	411
137	Spin-polarized current induced switching in Co/Cu/Co pillars. *Applied Physics Letters*, **2001**, 78, 3663-3665	3.4	405
136	Switching a spin valve back and forth by current-induced domain wall motion. *Applied Physics Letters*, **2003**, 83, 509-511	3.4	319
135	Evidence for room-temperature multiferroicity in a compound with a giant axial ratio. *Physical Review Letters*, **2009**, 102, 217603	7.4	306
134	Matching domain-wall configuration and spin-orbit torques for efficient domain-wall motion. *Physical Review B*, **2013**, 87,	3.3	285
133	Large microwave generation from current-driven magnetic vortex oscillators in magnetic tunnel junctions. *Nature Communications*, **2010**, 1, 8	17.4	280
132	Phase-locking of magnetic vortices mediated by antivortices. *Nature Nanotechnology*, **2009**, 4, 528-32	28.7	240
131	Vowel recognition with four coupled spin-torque nano-oscillators. *Nature*, **2018**, 563, 230-234	50.4	225
130	Room-Temperature Current-Induced Generation and Motion of sub-100 nm Skyrmions. *Nano Letters*, **2017**, 17, 2703-2712	11.5	215
129	Large magnetoresistance in Fe/MgO/FeCo(001) epitaxial tunnel junctions on GaAs(001). *Applied Physics Letters*, **2001**, 79, 1655-1657	3.4	202
128	Synchronization of spin-transfer oscillators driven by stimulated microwave currents. *Physical Review B*, **2006**, 73,	3.3	190

127	Generation of coherent spin-wave modes in yttrium iron garnet microdiscs by spin-orbit torque. *Nature Communications*, **2016**, 7, 10377	17.4	173
126	Inverse spin Hall effect in nanometer-thick yttrium iron garnet/Pt system. *Applied Physics Letters*, **2013**, 103, 082408	3.4	163
125	Electrical detection of single magnetic skyrmions in metallic multilayers at room temperature. *Nature Nanotechnology*, **2018**, 13, 233-237	28.7	154
124	Magnetic thin-film insulator with ultra-low spin wave damping for coherent nanomagnonics. *Scientific Reports*, **2014**, 4, 6848	4.9	145
123	Room-temperature stabilization of antiferromagnetic skyrmions in synthetic antiferromagnets. *Nature Materials*, **2020**, 19, 34-42	27	142
122	Shaped angular dependence of the spin-transfer torque and microwave generation without magnetic field. *Nature Physics*, **2007**, 3, 492-497	16.2	136
121	Vertical-current-induced domain-wall motion in MgO-based magnetic tunnel junctions with low current densities. *Nature Physics*, **2011**, 7, 626-630	16.2	132
120	A skyrmion-based spin-torque nano-oscillator. *New Journal of Physics*, **2016**, 18, 075011	2.9	128
119	Full control of the spin-wave damping in a magnetic insulator using spin-orbit torque. *Physical Review Letters*, **2014**, 113, 197203	7.4	124
118	Femtosecond single-shot imaging of nanoscale ferromagnetic order in Co/Pd multilayers using resonant x-ray holography. *Physical Review Letters*, **2012**, 108, 267403	7.4	124
117	Coupling efficiency for phase locking of a spin transfer nano-oscillator to a microwave current. *Physical Review Letters*, **2008**, 101, 017201	7.4	122
116	Structure and magnetism of Pd in Pd/Fe multilayers studied by x-ray magnetic circular dichroism at the Pd L2,3sedges. *Physical Review B*, **1997**, 55, 3663-3669	3.3	119
115	Atomistic Mechanism of Surfactant-Assisted Epitaxial Growth. *Physical Review Letters*, **1998**, 81, 850-853	7.4	116
114	Hybrid chiral domain walls and skyrmions in magnetic multilayers. *Science Advances*, **2018**, 4, eaat0415	14.3	112
113	Breathing modes of confined skyrmions in ultrathin magnetic dots. *Physical Review B*, **2014**, 90,	3.3	110
112	Approaching soft X-ray wavelengths in nanomagnet-based microwave technology. *Nature Communications*, **2016**, 7, 11255	17.4	107
111	Switching the magnetic configuration of a spin valve by current-induced domain wall motion. *Journal of Applied Physics*, **2002**, 92, 4825-4827	2.5	99
110	Vortex oscillations induced by spin-polarized current in a magnetic nanopillar: Analytical versus micromagnetic calculations. *Physical Review B*, **2009**, 80,	3.3	97

109	Impact of the electrical connection of spin transfer nano-oscillators on their synchronization: an analytical study. *Applied Physics Letters*, **2008**, 92, 232504	3.4	97
108	Skyrmion Gas Manipulation for Probabilistic Computing. *Physical Review Applied*, **2018**, 9,	4.3	96
107	Dynamics of two coupled vortices in a spin valve nanopillar excited by spin transfer torque. *Applied Physics Letters*, **2011**, 98, 062501	3.4	95
106	Domain wall displacement induced by subnanosecond pulsed current. *Applied Physics Letters*, **2004**, 84, 2820-2822	3.4	94
105	Tunnel magnetoresistance in nanojunctions based on Sr2FeMoO6. *Applied Physics Letters*, **2003**, 83, 2629-2631	3.4	93
104	High Domain Wall Velocities due to Spin Currents Perpendicular to the Plane. *Physical Review Letters*, **2009**, 102, 067206	7.4	91
103	The 2020 skyrmionics roadmap. *Journal Physics D: Applied Physics*, **2020**, 53, 363001	3	90
102	Controlling Dzyaloshinskii-Moriya Interaction via Chirality Dependent Atomic-Layer Stacking, Insulator Capping and Electric Field. *Scientific Reports*, **2018**, 8, 12356	4.9	88
101	Ultra-low damping insulating magnetic thin films get perpendicular. *Nature Communications*, **2018**, 9, 3355	17.4	82
100	Commensurability and chaos in magnetic vortex oscillations. *Nature Physics*, **2012**, 8, 682-687	16.2	80
99	Magnetization oscillations and waves driven by pure spin currents. *Physics Reports*, **2017**, 673, 1-31	27.7	78
98	Efficient Synchronization of Dipolarly Coupled Vortex-Based Spin Transfer Nano-Oscillators. *Scientific Reports*, **2015**, 5, 17039	4.9	76
97	Template-grown NiFe/Cu/NiFe nanowires for spin transfer devices. *Nano Letters*, **2007**, 7, 2563-7	11.5	75
96	Spin transfer experiments on (Ga,Mn)As/(In,Ga)As/(Ga,Mn)As tunnel junctions. *Physical Review B*, **2006**, 73,	3.3	73
95	Experimental evidence of the ferrimagnetic ground state of Sr 2 FeMoO 6 probed by X-ray magnetic circular dichroism. *Europhysics Letters*, **2002**, 60, 608-614	1.6	70
94	Phase locking of vortex based spin transfer oscillators to a microwave current. *Applied Physics Letters*, **2011**, 98, 132506	3.4	67
93	Identification and selection rules of the spin-wave eigenmodes in a normally magnetized nanopillar. *Physical Review B*, **2011**, 84,	3.3	66
92	Phase locking dynamics of dipolarly coupled vortex-based spin transfer oscillators. *Physical Review B*, **2012**, 85,	3.3	64

91	High-efficiency control of spin-wave propagation in ultra-thin yttrium iron garnet by the spin-orbit torque. *Applied Physics Letters*, **2016**, 108, 172406	3.4	63
90	Spin-wave propagation in ultra-thin YIG based waveguides. *Applied Physics Letters*, **2017**, 110, 092408	3.4	62
89	Field dependence of spin-transfer-induced vortex dynamics in the nonlinear regime. *Physical Review B*, **2012**, 86,	3.3	59
88	Mutual synchronization of spin torque nano-oscillators through a long-range and tunable electrical coupling scheme. *Nature Communications*, **2017**, 8, 15825	17.4	57
87	Measurement of the intrinsic damping constant in individual nanodisks of Y3Fe5O12 and Y3Fe5O12|Pt. *Applied Physics Letters*, **2014**, 104, 152410	3.4	56
86	Response to noise of a vortex based spin transfer nano-oscillator. *Physical Review B*, **2014**, 89,	3.3	54
85	Nanolithography Based on Real-Time Electrically Controlled Indentation with an Atomic Force Microscope for Nanocontact Elaboration. *Nano Letters*, **2003**, 3, 1599-1602	11.5	52
84	Origin of the spectral linewidth in nonlinear spin-transfer oscillators based on MgO tunnel junctions. *Physical Review B*, **2009**, 80,	3.3	50
83	Interlayer coupling across noble metal spacers. *Journal of Magnetism and Magnetic Materials*, **1993**, 126, 367-373	2.8	49
82	Spin-torque resonant expulsion of the vortex core for an efficient radiofrequency detection scheme. *Nature Nanotechnology*, **2016**, 11, 360-4	28.7	48
81	High emission power and Q factor in spin torque vortex oscillator consisting of FeB free layer. *Applied Physics Express*, **2014**, 7, 063009	2.4	48
80	Nonuniformity of a planar polarizer for spin-transfer-induced vortex oscillations at zero field. *Applied Physics Letters*, **2010**, 96, 212507	3.4	46
79	Magnetism of the Fe/ZnSe(001) interface. *Physical Review Letters*, **2002**, 88, 217202	7.4	46
78	Chirality in Magnetic Multilayers Probed by the Symmetry and the Amplitude of Dichroism in X-Ray Resonant Magnetic Scattering. *Physical Review Letters*, **2018**, 120, 037202	7.4	44
77	Noise-Enhanced Synchronization of Stochastic Magnetic Oscillators. *Physical Review Applied*, **2014**, 2,	4.3	41
76	Understanding of Phase Noise Squeezing Under Fractional Synchronization of a Nonlinear Spin Transfer Vortex Oscillator. *Physical Review Letters*, **2015**, 115, 017201	7.4	40
75	Numerical and analytical investigation of the synchronization of dipolarly coupled vortex spin-torque nano-oscillators. *Applied Physics Letters*, **2013**, 103, 122405	3.4	39
74	Influence of surfactants on atomic diffusion. *Surface Science*, **2000**, 459, 135-148	1.8	35

73	Point-contact electrodes to probe charging effects in individual ultrasmall cobalt clusters. *Applied Physics Letters*, **1998**, 72, 386-388	3.4	34
72	Self-Injection Locking of a Vortex Spin Torque Oscillator by Delayed Feedback. *Scientific Reports*, **2016**, 6, 26849	4.9	34
71	Review of recent results on spin polarized tunneling and magnetic switching by spin injection. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, **2001**, 84, 1-9	3.1	31
70	Perfect and robust phase-locking of a spin transfer vortex nano-oscillator to an external microwave source. *Applied Physics Letters*, **2014**, 104, 022408	3.4	30
69	Origin of spectral purity and tuning sensitivity in a spin transfer vortex nano-oscillator. *Physical Review Letters*, **2014**, 112, 257201	7.4	30
68	Large amplitude spin torque vortex oscillations at zero external field using a perpendicular spin polarizer. *Applied Physics Letters*, **2014**, 105, 022404	3.4	30
67	Reversible and irreversible current induced domain wall motion in CoFeB based spin valves stripes. *Applied Physics Letters*, **2007**, 90, 232505	3.4	30
66	Scaling up electrically synchronized spin torque oscillator networks. *Scientific Reports*, **2018**, 8, 13475	4.9	29
65	Nanolithography based contacting method for electrical measurements on single template synthesized nanowires. *Nanotechnology*, **2005**, 16, 2936-2940	3.4	28
64	Emission of Coherent Propagating Magnons by Insulator-Based Spin-Orbit-Torque Oscillators. *Physical Review Applied*, **2018**, 10,	4.3	27
63	Temporal pattern recognition with delayed feedback spin-torque nano-oscillators. *Physical Review Applied*, **2019**, 12,	4.3	26
62	A transmission electron microscope study of Nel skyrmion magnetic textures in multilayer thin film systems with large interfacial chiral interaction. *Scientific Reports*, **2018**, 8, 5703	4.9	26
61	Disruptive effect of Dzyaloshinskii-Moriya interaction on the magnetic memory cell performance. *Applied Physics Letters*, **2016**, 108, 112403	3.4	26
60	Spin wave amplification using the spin Hall effect in permalloy/platinum bilayers. *Applied Physics Letters*, **2016**, 108, 202407	3.4	26
59	Dzyaloshinskii-Moriya interaction at disordered interfaces from ab initio theory: Robustness against intermixing and tunability through dusting. *Applied Physics Letters*, **2018**, 113, 232403	3.4	26
58	Dzyaloshinskii-Moriya anisotropy in nanomagnets with in-plane magnetization. *Physical Review B*, **2016**, 93,	3.3	25
57	Influence of geometry on current-driven vortex oscillations in nanocontact devices. *Physical Review B*, **2011**, 83,	3.3	24
56	Nonlinear spin conductance of yttrium iron garnet thin films driven by large spin-orbit torque. *Physical Review B*, **2018**, 97,	3.3	23

55	Controlling the chirality and polarity of vortices in magnetic tunnel junctions. *Applied Physics Letters*, **2014**, 105, 172403	3.4	23
54	Nonlinear Behavior and Mode Coupling in Spin-Transfer Nano-Oscillators. *Physical Review Applied*, **2014**, 2,	4.3	23
53	Reversal process of a magnetic vortex core under the combined action of a perpendicular field and spin transfer torque. *Applied Physics Letters*, **2013**, 102, 062401	3.4	21
52	Current-driven skyrmion expulsion from magnetic nanostrips. *Physical Review B*, **2017**, 95,	3.3	21
51	Modeling the Shape of Axisymmetric Skyrmions in Magnetic Multilayers. *Physical Review Applied*, **2018**, 10,	4.3	21
50	Current-Induced Spin Torques on Single GdFeCo Magnetic Layers. *Advanced Materials*, **2021**, 33, e2007047	27.4	20
49	Microwave signal emission in spin-torque vortex oscillators in metallic nanowires: Experimental measurements and micromagnetic numerical study. *Physical Review B*, **2012**, 86,	3.3	19
48	Parametric excitation of magnetic vortex gyrations in spin-torque nano-oscillators. *Physical Review B*, **2013**, 88,	3.3	18
47	Temperature dependence of microwave voltage emission associated to spin-transfer induced vortex oscillation in magnetic tunnel junction. *Applied Physics Letters*, **2012**, 100, 042408	3.4	17
46	Optimizing magnetodipolar interactions for synchronizing vortex based spin-torque nano-oscillators. *Physical Review B*, **2015**, 92,	3.3	16
45	Autonomous and forced dynamics in a spin-transfer nano-oscillator: Quantitative magnetic-resonance force microscopy. *Physical Review B*, **2012**, 85,	3.3	16
44	Chaos in Magnetic Nanocontact Vortex Oscillators. *Physical Review Letters*, **2019**, 123, 147701	7.4	15
43	Single spin-torque vortex oscillator using combined bottom-up approach and e-beam lithography. *Applied Physics Letters*, **2013**, 102, 222402	3.4	15
42	Spin–orbit-torque magnonics. *Journal of Applied Physics*, **2020**, 127, 170901	2.5	14
41	Imaging non-collinear antiferromagnetic textures via single spin relaxometry. *Nature Communications*, **2021**, 12, 767	17.4	14
40	Magnetization reversal signatures in the magnetoresistance of magnetic multilayers. *Physical Review B*, **2012**, 86,	3.3	13
39	Quantitative imaging of hybrid chiral spin textures in magnetic multilayer systems by Lorentz microscopy. *Physical Review B*, **2019**, 100,	3.3	13
38	Vortex spin-torque oscillator stabilized by phase locked loop using integrated circuits. *AIP Advances*, **2017**, 7, 056653	1.5	11

37	Controlled Individual Skyrmion Nucleation at Artificial Defects Formed by Ion Irradiation. *Small*, **2020**, 16, e1907450	11	11
36	Tailored Flux Pinning in Superconductor-Ferromagnet Multilayers with Engineered Magnetic Domain Morphology From Stripes to Skyrmions. *Physical Review Applied*, **2020**, 13,	4.3	11
35	Bottom-up approach for the fabrication of spin torque nano-oscillators. *Journal Physics D: Applied Physics*, **2011**, 44, 105003	3	11
34	Nutation Spectroscopy of a Nanomagnet Driven into Deeply Nonlinear Ferromagnetic Resonance. *Physical Review X*, **2019**, 9,	9.1	11
33	Spin momentum transfer effects observed in electrodeposited Co/Cu/Co nanowires. *Journal of Applied Physics*, **2007**, 102, 103906	2.5	10
32	Spin transfer driven resonant expulsion of a magnetic vortex core for efficient rf detector. *AIP Advances*, **2017**, 7, 056608	1.5	9
31	Improved Spectral Stability in Spin-Transfer Nano-Oscillators: Single Vortex Versus Coupled Vortices Dynamics. *IEEE Transactions on Magnetics*, **2015**, 51, 1-6	2	9
30	Detection of the Microwave Emission from a Spin-Torque Oscillator by a Spin Diode. *Physical Review Applied*, **2020**, 13,	4.3	9
29	Low offset frequency 1/f flicker noise in spin-torque vortex oscillators. *Physical Review B*, **2019**, 99,	3.3	8
28	Probing Phase Coupling Between Two Spin-Torque Nano-Oscillators with an External Source. *Physical Review Letters*, **2017**, 118, 247202	7.4	8
27	INFLUENCE OF SHAPE IMPERFECTION ON DYNAMICS OF VORTEX SPIN-TORQUE NANO-OSCILLATOR. *Spin*, **2012**, 02, 1250005	1.3	8
26	Frequency Filtering with a Magnonic Crystal Based on Nanometer-Thick Yttrium Iron Garnet Films. *ACS Applied Nano Materials*, **2021**, 4, 121-128	5.6	8
25	Thermoelectric Signature of Individual Skyrmions. *Physical Review Letters*, **2021**, 126, 077202	7.4	7
24	Designing Large Arrays of Interacting Spin-Torque Nano-Oscillators for Microwave Information Processing. *Physical Review Applied*, **2020**, 13,	4.3	5
23	The 2007 Nobel Prize in Physics: Albert Fert and Peter Grünberg **2009**, 147-157		5
22	Enhancing the injection locking range of spin torque oscillators through mutual coupling. *Applied Physics Letters*, **2016**, 109, 252404	3.4	5
21	Large amplitude vortex gyration in permalloy/Bi2Se3-like heterostructures. *Physical Review B*, **2015**, 92,	3.3	4
20	Pattern generation and symbolic dynamics in a nanocontact vortex oscillator. *Nature Communications*, **2020**, 11, 601	17.4	3

19	Evidence for spin current driven Bose-Einstein condensation of magnons. *Nature Communications*, **2021**, 12, 6541	17.4	3
18	Influence of flicker noise and nonlinearity on the frequency spectrum of spin torque nano-oscillators. *Scientific Reports*, **2020**, 10, 13116	4.9	3
17	Electrical characterisation of higher order spin wave modes in vortex-based magnetic tunnel junctions. *Communications Physics*, **2021**, 4,	5.4	3
16	Electrical measurement of magnetic-field-impeded polarity switching of a ferromagnetic vortex core. *Physical Review B*, **2016**, 94,	3.3	3
15	Selective control of vortex polarities by microwave field in two robustly synchronized spin-torque nano-oscillators. *Applied Physics Letters*, **2018**, 112, 022405	3.4	2
14	Modulation and phase-locking in nanocontact vortex oscillators. *Physical Review B*, **2019**, 100,	3.3	2
13	Chirality-mediated bistability and strong frequency downshifting of the gyrotropic resonance of a magnetic vortex due to dynamic destiffening. *Physical Review B*, **2017**, 96,	3.3	2
12	Basic Spintronic Transport Phenomena **2016**, 1-28		2
11	Beyond the gyrotropic motion: Dynamic C-state in vortex spin torque oscillators. *Applied Physics Letters*, **2021**, 118, 012404	3.4	2
10	Promising Prospects for Chiral Domain Walls and Magnetic Skyrmions as a New Way to Manipulate and Store Information **2017**, 201-238		1
9	Electrical Signature of Noncollinear Magnetic Textures in Synthetic Antiferromagnets. *Physical Review Applied*, **2020**, 14,	4.3	1
8	Skyrmions in magnetic multilayers: chirality, electrical detection and current-induced motion **2017**,		1
7	Binding events through the mutual synchronization of spintronic nano-neurons.. *Nature Communications*, **2022**, 13, 883	17.4	1
6	Ultrafast time-evolution of chiral Néel magnetic domain walls probed by circular dichroism in x-ray resonant magnetic scattering.. *Nature Communications*, **2022**, 13, 1412	17.4	1
5	Flicker and random telegraph noise between gyrotropic and dynamic C-state of a vortex based spin torque nano oscillator. *AIP Advances*, **2021**, 11, 035042	1.5	0
4	Spin Torque dynamics for noise reduction in vortex-based sensors. *Applied Physics Letters*, **2021**, 118, 122401	3.4	0
3	Ferrimagnet GdFeCo Characterization for Spin-Orbitronics: Large Field-Like and Damping-Like Torques. *Physica Status Solidi - Rapid Research Letters*,2200035	2.5	0
2	Reservoir Computing Leveraging the Transient Non-linear Dynamics of Spin-Torque Nano-Oscillators. *Natural Computing Series*, **2021**, 307-329	2.5	

1 Spintronics and Synchrotron Radiation. *Springer Proceedings in Physics*, **2021**, 131-163 0.2