Sebastien Couet

List of Publications by Year
in descending order

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88 papers	1,560 citations	393982 19 h-index	395343 33 g-index
89 all docs	89 docs citations	89 times ranked	1635 citing authors

#	Article	IF	Citations
1	Single-shot dynamics of spinâ€“orbit torque and spin transfer torque switching in three-terminal magnetic tunnel junctions. Nature Nanotechnology, 2020, 15, 111-117.	15.6	167
2	Two-dimensional materials prospects for non-volatile spintronic memories. Nature, 2022, 606, 663-673.	13.7	116
3	SOT-MRAM 300MM Integration for Low Power and Ultrafast Embedded Memories. , 2018, , .		74
4	In situ GISAXS Investigation of Gold Sputtering onto a Polymer Template. Langmuir, 2008, 24, 4265-4272.	1.6	52
5	Time-resolved spin-torque switching in MgO-based perpendicularly magnetized tunnel junctions. Physical Review B, 2016, 93, .	1.1	50
6	Nanoscale domain wall devices with magnetic tunnel junction read and write. Nature Electronics, 2021, 4, 392-398.	13.1	46
7	Investigation of Microwave Loss Induced by Oxide Regrowth in High- Q Niobium Resonators. Physical Review Applied, 2021, 16, .	1.5	45
8	Voltage-Gate-Assisted Spin-Orbit-Torque Magnetic Random-Access Memory for High-Density and Low-Power Embedded Applications. Physical Review Applied, 2021, 15, .	1.5	43
9	BEOL compatible high tunnel magneto resistance perpendicular magnetic tunnel junctions using a sacrificial Mg layer as CoFeB free layer cap. Applied Physics Letters, 2015, 106, .	1.5	41
10	Enablement of STT-MRAM as last level cache for the high performance computing domain at the 5nm node. , 2018, , .		40
11	Impact of Ta and W-based spacers in double MgO STT-MRAM free layers on perpendicular anisotropy and damping. Applied Physics Letters, 2017, 111, .	1.5	37
12	Stabilization of Antiferromagnetic Order in FeO Nanolayers. Physical Review Letters, 2009, 103, 097201.	2.9	36
13	Spin-orbit torque switching of magnetic tunnel junctions for memory applications. Journal of Magnetism and Magnetic Materials, 2022, 562, 169692.	1.0	32
14	[Co/Ni]-CoFeB hybrid free layer stack materials for high density magnetic random access memory applications. Applied Physics Letters, 2016, 108, .	1.5	31
15	Manufacturable 300mm platform solution for Field-Free Switching SOT-MRAM. , 2019, , .		29
16	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, .	1.5	29
17	SOT-MRAM Based Analog in-Memory Computing for DNN Inference. , 2020, , .		28
18	Manufacturable 300mm platform solution for Field-Free Switching SOT-MRAM. , 2019, , .		26

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19	A compact UHV deposition system for in situ study of ultrathin films via hard x-ray scattering and spectroscopy. Review of Scientific Instruments, 2008, 79, 093908.	0.6	24
20	Electric Fieldâ€Induced Oxidation of Ferromagnetic/Ferroelectric Interfaces. Advanced Functional Materials, 2014, 24, 71-76.	7.8	24
21	Material Developments and Domain Wall-Based Nanosecond-Scale Switching Process in Perpendicularly Magnetized STT-MRAM Cells. IEEE Transactions on Magnetics, 2018, 54, 1-9.	1.2	22
22	Noncollinear coupling of iron layers through native iron oxide spacers. Physical Review B, 2007, 76, .	1.1	21
23	How Metallic Fe Controls the Composition of its Native Oxide. Physical Review Letters, 2008, 101, 056101.	2.9	20
24	Dynamical properties of ordered Feâ€“Pt alloys. Journal of Alloys and Compounds, 2015, 651, 528-536.	2.8	20
25	Pinhole Defect Characterization and Fault Modeling for STT-MRAM Testing. , 2019, , .		20
26	Thin Co/Ni-based bottom pinned spin-transfer torque magnetic random access memory stacks with high annealing tolerance. Applied Physics Letters, 2016, 108, 042402.	1.5	19
27	Back hopping in spin transfer torque switching of perpendicularly magnetized tunnel junctions. Physical Review B, 2020, 102, .	1.1	19
28	Optimization of Tungsten <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mi>Î²</mml:mi></mml:math> -Phase Window for Spin-Orbit-Torque Magnetic Random-Access Memory. Physical Review Applied, 2021, 16, .	1.5	18
29	The magnetic structure of coupled Fe/FeO multilayers revealed by nuclear resonant and neutron scattering methods. New Journal of Physics, 2009, 11, 013038.	1.2	17
30	Probing the magnetic state of Fe/FeO/Fe trilayers by multiple isotopic sensor layers. Applied Physics Letters, 2009, 94, .	1.5	16
31	Selective Doping of Block Copolymer Nanodomains by Sputter Deposition of Iron. Macromolecules, 2011, 44, 1621-1627.	2.2	16
32	Synthetic-Ferromagnet Pinning Layers Enabling Top-Pinned Magnetic Tunnel Junctions for High-Density Embedded Magnetic Random-Access Memory. Physical Review Applied, 2018, 10, .	1.5	15
33	Seed layer impact on structural and magnetic properties of [Co/Ni] multilayers with perpendicular magnetic anisotropy. Journal of Applied Physics, 2017, 121, .	1.1	14
34	Anisotropic lattice dynamics of FePt<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mtext>L</mml:mtext><mml:msub><mml:mn>1</mml:mn><mml:mn>0</mml:mn></mml:msub></r films. Physical Review B, 2010, 82, .	1.1	13
35	Evolution of perpendicular magnetized tunnel junctions upon annealing. Applied Physics Letters, 2016, 108, .	1.5	13
36	Ferromagnetic resonance study of composite Co/Ni - FeCoB free layers with perpendicular anisotropy. Applied Physics Letters, 2016, 109, .	1.5	13

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37	Gilbert damping of high anisotropy Co/Pt multilayers. Journal Physics D: Applied Physics, 2018, 51, 135002.	1.3	13
38	Oxygen Scavenging by Ta Spacers in Double-MgO Free Layers for Perpendicular Spin-Transfer Torque Magnetic Random-Access Memory. IEEE Magnetics Letters, 2016, 7, 1-4.	0.6	12
39	Annealing stability of magnetic tunnel junctions based on dual MgO free layers and [Co/Ni] based thin synthetic antiferromagnet fixed system. Journal of Applied Physics, 2017, 121, .	1.1	12
40	Fabrication of magnetic tunnel junctions connected through a continuous free layer to enable spin logic devices. Japanese Journal of Applied Physics, 2018, 57, 04FN01.	0.8	12
41	Offset fields in perpendicularly magnetized tunnel junctions. Journal Physics D: Applied Physics, 2019, 52, 274001.	1.3	12
42	Deterministic and Field-Free Voltage-Controlled MRAM for High Performance and Low Power Applications. , 2020, , .		11
43	The influence of phonon softening on the superconducting critical temperature of Sn nanostructures. Scientific Reports, 2020, 10, 5729.	1.6	11
44	Ferroelectric Control of Magnetism in Ultrathin HfO₂CoPt Layers. ACS Applied Materials & Interfaces, 2019, 11, 34385-34393.	4.0	10
45	Experimental observation of electron-phonon coupling enhancement in Sn nanowires caused by phonon confinement effects. Physical Review B, 2019, 99, .	1.1	10
46	Effect of Tantalum Spacer Thickness and Deposition Conditions on the Properties of MgO/CoFeB/Ta/CoFeB/MgO Free Layers. IEEE Magnetics Letters, 2019, 10, 1-4.	0.6	10
47	STT-MRAM array performance improvement through optimization of Ion Beam Etch and MTJ for Last-Level Cache application. , 2021, , .		10
48	Electronic voltage control of magnetic anisotropy at room temperature in high- <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Î</mml:mi></mml:math> <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mrow><mml:mi>SrTiO</mml:mi></mml:mrow><mml:mn>3</ trilayer. Physical Review Materials, 2020, 4, .	0.9	10
49	The magnetic structure of exchange coupled FePt/FePt3 thin films. Journal of Applied Physics, 2013, 113, 013909.	1.1	9
50	Oscillatory behavior of the tunnel magnetoresistance due to thickness variations in Ta|CoFe|MgO magnetic tunnel junctions: A first-principles study. Physical Review B, 2016, 94, .	1.1	9
51	Impact of self-heating on reliability predictions in STT-MRAM. , 2018, , .		9
52	In situ study of the Î± -Sn to Î² -Sn phase transition in low-dimensional systems: Phonon behavior and thermodynamic properties. Physical Review B, 2019, 100, .	1.1	9
53	J _{SW}of 5.5 MA/cm² and RA of 5.2-Î© Â· Î¼m² STT-MRAM Technology for LLC Application. IEEE Transactions on Electron Devices, 2020, 67, 3618-3625.	1.6	9
54	Impact of processing and stack optimization on the reliability of perpendicular STT-MRAM. , 2017, , .		9

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55	Perpendicular magnetic anisotropy of CoPt bilayers on ALD HfO2. Journal of Applied Physics, 2016, 120, .	1.1	8
56	Perpendicular magnetic anisotropy of CoFeBTa bilayers on ALD HfO2. AIP Advances, 2017, 7, 055933.	0.6	8
57	Interplay between lattice dynamics and superconductivity in Nb<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>Sn thin films. Physical Review B, 2013, 88, .	1.1	7
58	Scaled spintronic logic device based on domain wall motion in magnetically interconnected tunnel junctions. , 2018, , .		7
59	Top-Pinned STT-MRAM Devices With High Thermal Stability Hybrid Free Layers for High-Density Memory Applications. IEEE Transactions on Magnetics, 2018, 54, 1-5.	1.2	7
60	Stochastic Processes in Magnetization Reversal Involving Domain-Wall Motion in Magnetic Memory Elements. Physical Review Applied, 2021, 15, .	1.5	7
61	Impact of ambient temperature on the switching of voltage-controlled perpendicular magnetic tunnel junction. Applied Physics Letters, 2021, 118, .	1.5	7
62	Control of Interlayer Exchange Coupling and Its Impact on Spinâ€“Torque Switching of Hybrid Free Layers With Perpendicular Magnetic Anisotropy. IEEE Transactions on Magnetics, 2017, 53, 1-5.	1.2	6
63	Lattice dynamics in Sn nanoislands and cluster-assembled films. Physical Review B, 2017, 95, .	1.1	6
64	All-Electrical Control of Scaled Spin Logic Devices Based on Domain Wall Motion. IEEE Transactions on Electron Devices, 2021, 68, 2116-2122.	1.6	6
65	Spin-torque induced wall motion in perpendicularly magnetized discs: Ballistic versus oscillatory behavior. Physical Review B, 2021, 103, .	1.1	6
66	MgGa2O4 as alternative barrier for perpendicular MRAM junctions and VCMA. Applied Physics Letters, 2021, 118, 172402.	1.5	5
67	Demonstration of a Free-layer Developed With Atomistic Simulations Enabling BEOL Compatible VCMA-MRAM with a Coefficient â‰¥100fJ/Vm. , 2021, , .		5
68	Top pinned magnetic tunnel junction stacks with high annealing tolerance for high density STT-MRAM applications. , 2017, , .		4
69	Evidence of Magnetostrictive Effects on STT-MRAM Performance by Atomistic and Spin Modeling. , 2018, , .		4
70	Impact of operating temperature on the electrical and magnetic properties of the bottom-pinned perpendicular magnetic tunnel junctions. Applied Physics Letters, 2018, 113, .	1.5	4
71	Deposition and patterning of magnetic atom trap lattices in FePt films with periods down to 200â€‰nm. Journal of Applied Physics, 2018, 124, 044902.	1.1	4
72	Study of precessional switching speed control in voltage-controlled perpendicular magnetic tunnel junction. AIP Advances, 2020, 10, .	0.6	4

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73	A Systematic Assessment of W-Doped CoFeB Single Free Layers for Low Power STT-MRAM Applications. Electronics (Switzerland), 2021, 10, 2384.	1.8	4
74	The magneto-optical Kerr effect for efficient characterization of thermal stability in dense arrays of p-MTJs. AIP Advances, 2019, 9, 125236.	0.6	3
75	Edge-induced reliability & performance degradation in STT-MRAM: an etch engineering solution. , 2021, , .		3
76	Publisherâ€™s Note: Interplay between lattice dynamics and superconductivity in Nb3Sn thin films [Phys. Rev. B88, 045437 (2013)]. Physical Review B, 2013, 88, .	1.1	2
77	Structural and Magnetic Properties of Mn₃Ge Grown on a Thin Polycrystalline MgO Seed Layer. Physica Status Solidi - Rapid Research Letters, 2019, 13, 1800681.	1.2	2
78	Effect of nitrogen doping on the structure of metastable Î²-W on SiO2. Thin Solid Films, 2021, 732, 138795.	0.8	2
79	Morphology of the interfaces between transition metals and their native oxides: Role of interdiffusion processes. Physical Review B, 2009, 79, .	1.1	1
80	Electric Polarityâ€Dependent Modification of the Fe/BaTiO₃ Interface. Advanced Materials Interfaces, 2016, 3, 1500433.	1.9	1
81	Understanding and empirical fitting the breakdown of MgO in end-of-line annealed MTJs. , 2020, , .		1
82	All-electrical control of scaled spin logic devices based on domain wall motion. , 2020, , .		1
83	Feasibility analysis of embedded MRAM solutions at advanced process nodes. , 2022, , .		1
84	Probing the magnetization inside a superconducting Nb film by nuclear resonant scattering. Applied Physics Letters, 2011, 99, 092508.	1.5	0
85	Top-pinned STT-MRAM devices with high thermal stability hybrid freelayers for high densitymemory applications. , 2018, , .		0
86	Patterning challenges for beyond 3nm logic devices: example of an interconnected magnetic tunnel junction. , 2019, , .		0
87	Single-shot dynamics of spin-orbit torque and spin transfer torque switching in three-terminal magnetic tunnel junctions. , 2020, , .		0
88	Degradation mechanism of amorphous IGZO-based bipolar metal-semiconductor-metal selectors. , 2022, , .		0