Florian Bruckner

List of Publications by Year
in descending order

67 papers	1,206 citations	394421 19 h-index	414414 32 g-index
67 all docs	67 docs citations	67 times ranked	1329 citing authors

#	Article	IF	Citations
1	3D print of polymer bonded rare-earth magnets, and 3D magnetic field scanning with an end-user 3D printer. Applied Physics Letters, 2016, 109, .	3.3	168
2	3D Printing of Polymer-Bonded Rare-Earth Magnets With a Variable Magnetic Compound Fraction for a Predefined Stray Field. Scientific Reports, 2017, 7, 9419.	3.3	80
3	magnum.fe: A micromagnetic finite-element simulation code based on FEniCS. Journal of Magnetism and Magnetic Materials, 2013, 345, 29-35.	2.3	61
4	Topologically protected vortex structures for low-noise magnetic sensors with high linear range. Nature Electronics, 2018, 1, 362-370.	26.0	60
5	Heat-assisted magnetic recording of bit-patterned media beyond 10‰Tb/in2. Applied Physics Letters, 2016, 108, .	3.3	53
6	A three-dimensional spin-diffusion model for micromagnetics. Scientific Reports, 2015, 5, 14855.	3.3	51
7	Topology optimized and 3D printed polymer-bonded permanent magnets for a predefined external field. Journal of Applied Physics, 2017, 122, .	2.5	51
8	A self-consistent spin-diffusion model for micromagnetics. Scientific Reports, 2016, 6, 16.	3.3	40
9	Landau-Lifshitz-Bloch equation for exchange-coupled grains. Physical Review B, 2014, 90, .	3.2	35
10	3D FEM–BEM-coupling method to solve magnetostatic Maxwell equations. Journal of Magnetism and Magnetic Materials, 2012, 324, 1862-1866.	2.3	30
11	Multiscale modeling in micromagnetics: Existence of solutions and numerical integration. Mathematical Models and Methods in Applied Sciences, 2014, 24, 2627-2662.	3.3	30
12	Fundamental limits in heat-assisted magnetic recording and methods to overcome it with exchange spring structures. Journal of Applied Physics, 2015, 117, 163913.	2.5	28
13	Spin Torque Efficiency and Analytic Error Rate Estimates of Skyrmion Racetrack Memory. Scientific Reports, 2019, 9, 4827.	3.3	26
14	Magnetoelastic resonance sensor for remote strain measurements. Applied Physics Letters, 2012, 101, 042402.	3.3	24
15	Simulating rare switching events of magnetic nanostructures with forward flux sampling. Physical Review B, 2013, 88, .	3.2	24
16	Solving Large-Scale Inverse Magnetostatic Problems using the Adjoint Method. Scientific Reports, 2017, 7, 40816.	3.3	24
17	Additive Manufactured and Topology Optimized Passive Shimming Elements for Permanent Magnetic Systems. Scientific Reports, 2018, 8, 14651.	3.3	24
18	Calculation of coercivity of magnetic nanostructures at finite temperatures. Physical Review B, 2011, 84, .	3.2	22

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19	Areal density optimizations for heat-assisted magnetic recording of high-density media. Journal of Applied Physics, 2016, 119, .	2.5	20
20	Fieldlike and Dampinglike Spin-Transfer Torque in Magnetic Multilayers. Physical Review Applied, 2017, 7, .	3.8	20
21	Comparison of Sensitivity and Low-Frequency Noise Contributions in Giant-Magnetoresistive and Tunneling-Magnetoresistive Spin-Valve Sensors with a Vortex-State Free Layer. Physical Review Applied, 2018, 10, .	3.8	19
22	Back-Hopping in Spin-Transfer-Torque Devices: Possible Origin and Countermeasures. Physical Review Applied, 2018, 9, .	3.8	18
23	A repulsive skyrmion chain as a guiding track for a racetrack memory. AIP Advances, 2018, 8, .	1.3	16
24	Large scale finite-element simulation of micromagnetic thermal noise. Journal of Magnetism and Magnetic Materials, 2019, 475, 408-414.	2.3	16
25	Combining micromagnetism and magnetostatic Maxwell equations for multiscale magnetic simulations. Journal of Magnetism and Magnetic Materials, 2013, 343, 163-168.	2.3	15
26	A fast finite-difference algorithm for topology optimization of permanent magnets. Journal of Applied Physics, 2017, 122, .	2.5	15
27	Learning magnetization dynamics. Journal of Magnetism and Magnetic Materials, 2019, 491, 165548.	2.3	14
28	Basic noise mechanisms of heat-assisted-magnetic recording. Journal of Applied Physics, 2016, 120, .	2.5	13
29	Computational micromagnetics based on normal modes: Bridging the gap between macrospin and full spatial discretization. Journal of Magnetism and Magnetic Materials, 2022, 546, 168683.	2.3	13
30	Calculating thermal stability and attempt frequency of advanced recording structures without free parameters. Journal of Applied Physics, 2015, 117, 163907.	2.5	12
31	Dependence of energy barrier reduction on collective excitations in square artificial spin ice: A comprehensive comparison of simulation techniques. Physical Review B, 2020, 102, .	3.2	11
32	A full-fledged micromagnetic code in fewer than 70 lines of NumPy. Journal of Magnetism and Magnetic Materials, 2015, 387, 13-18.	2.3	10
33	Stochastic ferrimagnetic Landau-Lifshitz-Bloch equation for finite magnetic structures. Physical Review B, 2019, 100, .	3.2	10
34	Noise Reduction Based on an Feâˆ¼Rh Interlayer in Exchange-Coupled Heat-Assisted Recording Media. Physical Review Applied, 2017, 8, .	3.8	9
35	Chiral switching and dynamic barrier reductions in artificial square ice. New Journal of Physics, 2021, 23, 033024.	2.9	9
36	Highly parallel demagnetization field calculation using the fast multipole method on tetrahedral meshes with continuous sources. Journal of Magnetism and Magnetic Materials, 2017, 442, 409-416.	2.3	8

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37	Hybrid FFT algorithm for fast demagnetization field calculations on non-equidistant magnetic layers. Journal of Magnetism and Magnetic Materials, 2020, 503, 166592.	2.3	8
38	Efficient energy minimization in finite-difference micromagnetics: Speeding up hysteresis computations. Journal of Applied Physics, 2014, 116, 123908.	2.5	7
39	Passive wireless strain measurement based upon the Villari effect and giant magnetoresistance. Applied Physics Letters, 2016, 109, .	3.3	7
40	Contactless and absolute linear displacement detection based upon 3D printed magnets combined with passive radio-frequency identification. AIP Advances, 2017, 7, .	1.3	7
41	Efficient micromagnetic modelling of spin-transfer torque and spin-orbit torque. AIP Advances, 2018, 8, .	1.3	7
42	GPU-Accelerated Atomistic Energy Barrier Calculations of Skyrmion Annihilations. IEEE Transactions on Magnetics, 2018, 54, 1-5.	2.1	7
43	Tension-free Dirac strings and steered magnetic charges in 3D artificial spin ice. Npj Computational Materials, 2021, 7, .	8.7	7
44	A device model framework for magnetoresistive sensors based on the Stoner–Wohlfarth model. Journal of Magnetism and Magnetic Materials, 2015, 381, 344-349.	2.3	6
45	Macroscopic simulation of isotropic permanent magnets. Journal of Magnetism and Magnetic Materials, 2016, 401, 875-879.	2.3	6
46	ODES: a high level interface to ODE and DAE solvers. Journal of Open Source Software, 2018, 3, 165.	4.6	6
47	Influence of grain size and exchange interaction on the LLB modeling procedure. Journal of Applied Physics, 2016, 120, 223903.	2.5	5
48	Significant reduction of critical currents in MRAM designs using dual free layer with perpendicular and in-plane anisotropy. Applied Physics Letters, 2017, 110, .	3.3	5
49	3D printed magnets for neutron spin manipulation. EPJ Web of Conferences, 2019, 219, 10008.	0.3	5
50	Strayfield calculation for micromagnetic simulations using true periodic boundary conditions. Scientific Reports, 2021, 11, 9202.	3.3	5
51	Removal of earth's magnetic field effect on magnetoelastic resonance sensors by an antisymmetric bias field. Sensors and Actuators A: Physical, 2012, 183, 11-15.	4.1	4
52	Fully coupled, dynamic model of a magnetostrictive amorphous ribbon and its validation. Journal of Applied Physics, 2014, 115, .	2.5	4
53	Reactivable passive radio-frequency identification temperature indicator. Journal of Applied Physics, 2015, 117, .	2.5	4
54	Efficiently reducing transition curvature in heat-assisted magnetic recording with state-of-the-art write heads. Applied Physics Letters, 2017, 110, 182406.	3.3	4

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55	Additive-Manufactured and Topology-Optimized Permanent-Magnet Spin Rotator for Neutron Interferometry. Physical Review Applied, 2019, 12, .	3.8	4
56	Three-dimensional magneto-resistive random access memory devices based on resonant spin-polarized alternating currents. Journal of Applied Physics, 2011, 109, 123901.	2.5	3
57	Unexpected Width of Minor Magnetic Hysteresis Loops in Nanostructures. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	3
58	Proposal for a micromagnetic standard problem: Domain wall pinning at phase boundaries. Journal of Magnetism and Magnetic Materials, 2022, 548, 168875.	2.3	3
59	A topology optimization algorithm for magnetic structures based on a hybrid FEM–BEM method utilizing the adjoint approach. Scientific Reports, 2022, 12, 1119.	3.3	3
60	Ultra-Low-Cost RFID Based on Soft Magnetic Ribbons. IEEE Transactions on Magnetics, 2014, 50, 1-5.	2.1	2
61	Superior bit error rate and jitter due to improved switching field distribution in exchange spring magnetic recording media. Scientific Reports, 2016, 6, 27048.	3.3	2
62	Write head design for curvature reduction in heat-assisted magnetic recording by topology optimization. Journal of Applied Physics, 2019, 126, 143906.	2.5	2
63	Solving the inverse magnetostatic problem using fictitious magnetic charges. AIP Advances, 2018, 8, 056005.	1.3	1
64	The influence of spin-diffusion effects on current driven domain-wall motion. , 2015, , .		0
65	Multi-physics based system simulations for magnetic sensors. , 2017, , .		0
66	Convergence of highly parallel stray field calculation using the fast multipole method on irregular meshes. AIP Advances, 2018, 8, 056019.	1.3	0
67	Erratum to "gpu accelerated atomistic energy barrier calculations of skyrmion annihilations"•[nov 18 art. no. 7206105]. IEEE Transactions on Magnetics, 2019, 55, 1-1.	2.1	0