Pedram Khalili Amiri

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

132 papers	5,292 citations	38 h-index	69 g-index
144 ext. papers	6,197 ext. citations	4.8 avg, IF	5.55 L-index

#	Paper	IF	Citations
132	Switching of perpendicular magnetization by spin-orbit torques in the absence of external magnetic fields. *Nature Nanotechnology*, **2014**, 9, 548-54	28.7	569
131	Low-power non-volatile spintronic memory: STT-RAM and beyond. *Journal Physics D: Applied Physics* , **2013**, 46, 074003	3	308
130	Room-Temperature Creation and Spin-Orbit Torque Manipulation of Skyrmions in Thin Films with Engineered Asymmetry. *Nano Letters*, **2016**, 16, 1981-8	11.5	211
129	Voltage-induced ferromagnetic resonance in magnetic tunnel junctions. *Physical Review Letters*, **2012**, 108, 197203	7.4	199
128	Strong Rashba-Edelstein Effect-Induced Spin-Orbit Torques in Monolayer Transition Metal Dichalcogenide/Ferromagnet Bilayers. *Nano Letters*, **2016**, 16, 7514-7520	11.5	181
127	Room-Temperature Skyrmion Shift Device for Memory Application. *Nano Letters*, **2017**, 17, 261-268	11.5	160
126	Switching current reduction using perpendicular anisotropy in CoFeB|MgO magnetic tunnel junctions. *Applied Physics Letters*, **2011**, 98, 112507	3.4	151
125	Electrical control of reversible and permanent magnetization reorientation for magnetoelectric memory devices. *Applied Physics Letters*, **2011**, 98, 262504	3.4	135
124	Ultra-low switching energy and scaling in electric-field-controlled nanoscale magnetic tunnel junctions with high resistance-area product. *Applied Physics Letters*, **2016**, 108, 012403	3.4	131
123	Ultralow-current-density and bias-field-free spin-transfer nano-oscillator. *Scientific Reports*, **2013**, 3, 1426	4.9	130
122	Electric-field-induced spin wave generation using multiferroic magnetoelectric cells. *Applied Physics Letters*, **2014**, 104, 082403	3.4	125
121	High-power coherent microwave emission from magnetic tunnel junction nano-oscillators with perpendicular anisotropy. *ACS Nano*, **2012**, 6, 6115-21	16.7	114
120	Magnetization switching through spin-Hall-effect-induced chiral domain wall propagation. *Physical Review B*, **2014**, 89,	3.3	105
119	VOLTAGE-CONTROLLED MAGNETIC ANISOTROPY IN SPINTRONIC DEVICES. *Spin*, **2012**, 02, 1240002	1.3	95
118	Temperature dependence of the voltage-controlled perpendicular anisotropy in nanoscale MgO|CoFeB|Ta magnetic tunnel junctions. *Applied Physics Letters*, **2014**, 104, 112410	3.4	92
117	Giant spin-torque diode sensitivity in the absence of bias magnetic field. *Nature Communications*, **2016**, 7, 11259	17.4	89
116	Low writing energy and sub nanosecond spin torque transfer switching of in-plane magnetic tunnel junction for spin torque transfer random access memory. *Journal of Applied Physics*, **2011**, 109, 07C720	2.5	87

115	Deep subnanosecond spin torque switching in magnetic tunnel junctions with combined in-plane and perpendicular polarizers. *Applied Physics Letters*, **2011**, 98, 102509	3.4	76
114	. *IEEE Transactions on Magnetics*, **2015**, 51, 1-7	2	72
113	Giant voltage modulation of magnetic anisotropy in strained heavy metal/magnet/insulator heterostructures. *Physical Review B*, **2015**, 92,	3.3	69
112	Room-Temperature Skyrmions in an Antiferromagnet-Based Heterostructure. *Nano Letters*, **2018**, 18, 980-986	11.5	68
111	Electric-field guiding of magnetic skyrmions. *Physical Review B*, **2015**, 92,	3.3	68
110	Enhancement of voltage-controlled magnetic anisotropy through precise control of Mg insertion thickness at CoFeB|MgO interface. *Applied Physics Letters*, **2017**, 110, 052401	3.4	64
109	Strain-induced modulation of perpendicular magnetic anisotropy in Ta/CoFeB/MgO structures investigated by ferromagnetic resonance. *Applied Physics Letters*, **2015**, 106, 072402	3.4	63
108	Current-driven perpendicular magnetization switching in Ta/CoFeB/[TaOx or MgO/TaOx] films with lateral structural asymmetry. *Applied Physics Letters*, **2014**, 105, 102411	3.4	61
107	Comparative Evaluation of Spin-Transfer-Torque and Magnetoelectric Random Access Memory. *IEEE Journal on Emerging and Selected Topics in Circuits and Systems*, **2016**, 6, 134-145	5.2	58
106	Fast and programmable locomotion of hydrogel-metal hybrids under light and magnetic fields. *Science Robotics*, **2020**, 5,	18.6	55
105	Magneto-optical investigation of spin-orbit torques in metallic and insulating magnetic heterostructures. *Nature Communications*, **2015**, 6, 8958	17.4	55
104	Giant interfacial perpendicular magnetic anisotropy in MgO/CoFe/capping layer structures. *Applied Physics Letters*, **2017**, 110, 072403	3.4	53
103	Effect of the oxide layer on current-induced spin-orbit torques in Hf|CoFeB|MgO and Hf|CoFeB|TaOx structures. *Applied Physics Letters*, **2015**, 106, 032406	3.4	51
102	Spin-orbit torques in perpendicularly magnetized Ir22Mn78/Co20Fe60B20/MgO multilayer. *Applied Physics Letters*, **2016**, 109, 222401	3.4	51
101	**2012**,		50
100	Current-induced spin-orbit torque switching of perpendicularly magnetized Hf|CoFeB|MgO and Hf|CoFeB|TaOx structures. *Applied Physics Letters*, **2015**, 106, 162409	3.4	48
99	. *IEEE Electron Device Letters*, **2011**, 32, 57-59	4.4	45
98	Effect of resistance-area product on spin-transfer switching in MgO-based magnetic tunnel junction memory cells. *Applied Physics Letters*, **2011**, 98, 072512	3.4	41

97	. *IEEE Nanotechnology Magazine*, **2015**, 14, 992-997	2.6	39
96	Thermally stable voltage-controlled perpendicular magnetic anisotropy in Mo|CoFeB|MgO structures. *Applied Physics Letters*, **2015**, 107, 142403	3.4	39
95	Nanoscale magnetic tunnel junction sensors with perpendicular anisotropy sensing layer. *Applied Physics Letters*, **2012**, 101, 062412	3.4	38
94	Sub-200 ps spin transfer torque switching in in-plane magnetic tunnel junctions with interface perpendicular anisotropy. *Journal Physics D: Applied Physics*, **2012**, 45, 025001	3	38
93	Electric-field-driven magnetization switching and nonlinear magnetoelasticity in Au/FeCo/MgO heterostructures. *Scientific Reports*, **2016**, 6, 29815	4.9	38
92	Enhancement of microwave emission in magnetic tunnel junction oscillators through in-plane field orientation. *Applied Physics Letters*, **2011**, 99, 032503	3.4	37
91	. *Proceedings of the IEEE*, **2016**, 104, 1974-2008	14.3	36
90	Nonreciprocal spin wave spectroscopy of thin NiFe stripes. *Applied Physics Letters*, **2007**, 91, 062502	3.4	35
89	Electric field control and effect of Pd capping on magnetocrystalline anisotropy in FePd thin films: A first-principles study. *Physical Review B*, **2014**, 89,	3.3	33
88	Experimental Demonstration of Spintronic Broadband Microwave Detectors and Their Capability for Powering Nanodevices. *Physical Review Applied*, **2019**, 11,	4.3	32
87	**2016**,		32
86	Strain-mediated 180° perpendicular magnetization switching of a single domain multiferroic structure. *Journal of Applied Physics*, **2015**, 118, 014101	2.5	31
85	Joule Heating Effect on Field-Free Magnetization Switching by Spin-Orbit Torque in Exchange-Biased Systems. *Physical Review Applied*, **2017**, 7,	4.3	29
84	Electrical manipulation of the magnetic order in antiferromagnetic PtMn pillars. *Nature Electronics*, **2020**, 3, 92-98	28.4	29
83	Ultrahigh detection sensitivity exceeding 105 V/W in spin-torque diode. *Applied Physics Letters*, **2018**, 113, 102401	3.4	29
82	Magneto-electric tuning of the phase of propagating spin waves. *Applied Physics Letters*, **2012**, 101, 022409	3.4	27
81	Effect of heavy metal layer thickness on spin-orbit torque and current-induced switching in Hf|CoFeB|MgO structures. *Applied Physics Letters*, **2016**, 109, 022403	3.4	27
80	. *IEEE Journal of Solid-State Circuits*, **2017**, 52, 2194-2207	5.5	26

79	Reduction of switching current density in perpendicular magnetic tunnel junctions by tuning the anisotropy of the CoFeB free layer. *Journal of Applied Physics*, **2012**, 111, 07C907	2.5	26
78	Diode-MTJ Crossbar Memory Cell Using Voltage-Induced Unipolar Switching for High-Density MRAM. *IEEE Electron Device Letters*, **2013**, 34, 753-755	4.4	26
77	Electric-field-induced thermally assisted switching of monodomain magnetic bits. *Journal of Applied Physics*, **2013**, 113, 013912	2.5	24
76	Spin-torque ferromagnetic resonance measurements utilizing spin Hall magnetoresistance in W/Co40Fe40B20/MgO structures. *Applied Physics Letters*, **2016**, 109, 202404	3.4	24
75	Enhanced voltage-controlled magnetic anisotropy in magnetic tunnel junctions with an MgO/PZT/MgO tunnel barrier. *Applied Physics Letters*, **2016**, 108, 112402	3.4	24
74	Design of high-throughput and low-power true random number generator utilizing perpendicularly magnetized voltage-controlled magnetic tunnel junction. *AIP Advances*, **2017**, 7, 055934	1.5	23
73	In-plane current-driven spin-orbit torque switching in perpendicularly magnetized films with enhanced thermal tolerance. *Applied Physics Letters*, **2016**, 108, 212406	3.4	23
72	Write Error Rate and Read Disturbance in Electric-Field-Controlled Magnetic Random-Access Memory. *IEEE Magnetics Letters*, **2017**, 8, 1-5	1.6	22
71	Spin-Torque Driven Switching Probability Density Function Asymmetry. *IEEE Transactions on Magnetics*, **2012**, 48, 3818-3820	2	22
70	Dynamics of domain-wall motion driven by spin-orbit torque in antiferromagnets. *Physical Review B*, **2020**, 101,	3.3	19
69	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
68	Competing effect of spin-orbit torque terms on perpendicular magnetization switching in structures with multiple inversion asymmetries. *Scientific Reports*, **2016**, 6, 23956	4.9	18
67	The promise of spintronics for unconventional computing. *Journal of Magnetism and Magnetic Materials*, **2021**, 521, 167506	2.8	18
66	Perpendicular magnetic tunnel junction with W seed and capping layers. *Journal of Applied Physics*, **2017**, 121, 153902	2.5	17
65	Efficient Excitation of High-Frequency Exchange-Dominated Spin Waves in Periodic Ferromagnetic Structures. *Physical Review Applied*, **2017**, 7,	4.3	17
64	Control of Spin-Wave Damping in YIG Using Spin Currents from Topological Insulators. *Physical Review Applied*, **2019**, 11,	4.3	17
63	Spin wave functions nanofabric update **2011**,		17
62	Analysis and Compact Modeling of Magnetic Tunnel Junctions Utilizing Voltage-Controlled Magnetic Anisotropy. *IEEE Transactions on Magnetics*, **2018**, 54, 1-9	2	16

61	Effects of annealing on the magnetic properties and microstructures of Ta/Mo/CoFeB/MgO/Ta films. *Journal of Alloys and Compounds*, **2017**, 692, 243-248	5.7	15
60	In-plane magnetic field effect on switching voltage and thermal stability in electric-field-controlled perpendicular magnetic tunnel junctions. *AIP Advances*, **2016**, 6, 075014	1.5	15
59	Spin-Torque Ferromagnetic Resonance in W/CoFeB/W/CoFeB/MgO Stacks. *Physical Review Applied*, **2018**, 10,	4.3	15
58	Perpendicular magnetization switching by large spin□rbit torques from sputtered Bi2Te3. *Chinese Physics B*, **2020**, 29, 078505	1.2	14
57	Large voltage-controlled magnetic anisotropy in the SrTiO3/Fe/Cu structure. *Applied Physics Letters* , **2017**, 111, 152403	3.4	13
56	Design of a Fast and Low-Power Sense Amplifier and Writing Circuit for High-Speed MRAM. *IEEE Transactions on Magnetics*, **2015**, 51, 1-7	2	12
55	MTJ variation monitor-assisted adaptive MRAM write **2016**,		12
54	Voltage-Controlled Magnetic Anisotropy in Heterostructures with Atomically Thin Heavy Metals. *Physical Review Applied*, **2019**, 12,	4.3	12
53	Partial spin absorption induced magnetization switching and its voltage-assisted improvement in an asymmetrical all spin logic device at the mesoscopic scale. *Applied Physics Letters*, **2017**, 111, 052407	3.4	12
52	A ReRAM-based single-NVM nonvolatile flip-flop with reduced stress-time and write-power against wide distribution in write-time by using self-write-termination scheme for nonvolatile processors in IoT era **2016**,		12
51	A Word Line Pulse Circuit Technique for Reliable Magnetoelectric Random Access Memory. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2017**, 25, 2027-2034	2.6	11
50	Colossal electric field control of magnetic anisotropy at ferromagnetic interfaces induced by iridium overlayer. *Physical Review B*, **2019**, 99,	3.3	11
49	Analog to Stochastic Bit Stream Converter Utilizing Voltage-Assisted Spin Hall Effect. *IEEE Electron Device Letters*, **2017**, 38, 1343-1346	4.4	11
48	Strain control magnetocrystalline anisotropy of Ta/FeCo/MgO heterostructures. *Journal of Applied Physics*, **2015**, 117, 17B518	2.5	10
47	Source Line Sensing in Magneto-Electric Random-Access Memory to Reduce Read Disturbance and Improve Sensing Margin. *IEEE Magnetics Letters*, **2016**, 7, 1-5	1.6	10
46	Low-Power, High-Density Spintronic Programmable Logic With Voltage-Gated Spin Hall Effect in Magnetic Tunnel Junctions. *IEEE Magnetics Letters*, **2016**, 7, 1-5	1.6	10
45	A Spintronic Voltage-Controlled Stochastic Oscillator for Event-Driven Random Sampling. *IEEE Electron Device Letters*, **2017**, 38, 281-284	4.4	9
44	Picosecond Electric-Field-Induced Switching of Antiferromagnets. *Physical Review Applied*, **2019**, 11,	4.3	9

43	The computer chip that never forgets. *IEEE Spectrum*, **2015**, 52, 30-56	1.7	9
42	Predictive Materials Design of Magnetic Random-Access Memory Based on Nanoscale Atomic Structure and Element Distribution. *Nano Letters*, **2019**, 19, 8621-8629	11.5	9
41	Quantum computers. *IEEE Potentials*, **2002**, 21, 6-9	1	9
40	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
39	Influence of inserted Mo layer on the thermal stability of perpendicularly magnetized Ta/Mo/Co20Fe60B20/MgO/Ta films. *AIP Advances*, **2016**, 6, 045107	1.5	8
38	Hybrid VC-MTJ/CMOS non-volatile stochastic logic for efficient computing **2017**,		7
37	A 65-nm ReRAM-Enabled Nonvolatile Processor With Time-Space Domain Adaption and Self-Write-Termination Achieving $> 4times $ Faster Clock Frequency and $> 6times $ Higher Restore Speed. *IEEE Journal of Solid-State Circuits*, **2017**, 52, 2769-2785	5.5	7
36	Deviation from exponential decay for spin waves excited with a coplanar waveguide antenna. *Applied Physics Letters*, **2012**, 101, 252409	3.4	7
35	Thermal stability characterization of magnetic tunnel junctions using hard-axis magnetoresistance measurements. *Journal of Applied Physics*, **2011**, 109, 07C708	2.5	7
34	Low-power MRAM for nonvolatile electronics: Electric field control and spin-orbit torques **2014**,		6
33	Quantitative analysis of electric field induced change in anisotropy field in Co60Fe20B20/(011) xPb(Mg1/3Nb2/3)O3-(1 x)PbTiO3 (x ~ 0.68) heterostructures. *Applied Physics Letters*, **2012**, 101, 202404	3.4	6
32	Experimental Determination of the Nonuniform Shape-Induced Anisotropy Field in Thin NiFe Films. *IEEE Transactions on Magnetics*, **2007**, 43, 1880-1883	2	6
31	Observation of current-induced switching in non-collinear antiferromagnetic IrMn by differential voltage measurements. *Nature Communications*, **2021**, 12, 3828	17.4	6
30	The impact of Hf layer thickness on the perpendicular magnetic anisotropy in Hf/CoFeB/MgO/Ta films. *Journal of Alloys and Compounds*, **2017**, 694, 76-81	5.7	5
29	Electric field induced domain-wall dynamics: Depinning and chirality switching. *Physical Review B*, **2013**, 88,	3.3	5
28	Nonreciprocal Spin Waves in Co-Ta-Zr Films and Multilayers. *IEEE Transactions on Magnetics*, **2009**, 45, 4215-4218	2	5
27	Adaptive MRAM Write and Read with MTJ Variation Monitor. *IEEE Transactions on Emerging Topics in Computing*, **2021**, 9, 402-413	4.1	5
26	. *IEEE Journal of Quantum Electronics*, **2018**, 54, 1-5	2	5

25	The influence of an MgO nanolayer on the planar Hall effect in NiFe films. *Journal of Applied Physics* , **2015**, 117, 123908	2.5	4
24	The influence of in-plane ferroelectric crystal orientation on electrical modulation of magnetic properties in Co60Fe20B20/SiO2/(011) xPb(Mg1/3Nb2/3)O3-(1 x)PbTiO3 heterostructures. *Journal of Applied Physics*, **2012**, 112, 033916	2.5	4
23	Magnetic bit stability: Competition between domain-wall and monodomain switching. *Applied Physics Letters*, **2012**, 100, 212406	3.4	4
22	. *IEEE Magnetics Letters*, **2012**, 3, 3000304-3000304	1.6	4
21	Magnetostatic waves in layered materials and devices. *Journal of Applied Physics*, **2006**, 100, 103909	2.5	4
20	3D Ferrimagnetic Device for Multi-Bit Storage and Efficient In-Memory Computing. *IEEE Electron Device Letters*, **2021**, 42, 152-155	4.4	4
19	A Dual-Data Line Read Scheme for High-Speed Low-Energy Resistive Nonvolatile Memories. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, **2018**, 26, 272-279	2.6	3
18	Oscillatory magnetic anisotropy and spin-reorientation induced by heavy-metal cap in Cu/FeCo/M (M=Hf or Ta): A first-principles study. *Physical Review B*, **2016**, 94,	3.3	3
17	Leveraging nMOS Negative Differential Resistance for Low Power, High Reliability Magnetic Memory. *IEEE Transactions on Electron Devices*, **2017**, 64, 4084-4090	2.9	3
16	Integrated Microstrip Lines With Co Ta Zr Magnetic Films. *IEEE Transactions on Magnetics*, **2008**, 44, 3103-3106	2	3
15	Ferromagnetic Thin Films for Loss Reduction in On-Chip Transmission Lines. *IEEE Transactions on Magnetics*, **2007**, 43, 2630-2632	2	3
14	Domain periodicity in an easy-plane antiferromagnet with Dzyaloshinskii-Moriya interaction. *Physical Review B*, **2020**, 102,	3.3	3
13	Array-Level Analysis of Magneto-Electric Random-Access Memory for High-Performance Embedded Applications. *IEEE Magnetics Letters*, **2017**, 8, 1-5	1.6	2
12	Magnetic Tunnel Junctions and Their Applications in Nonvolatile Circuits **2015**, 1-36		2
11	Tight-Binding Analysis of Coupled Dielectric Waveguide Structures. *Fiber and Integrated Optics*, **2006**, 25, 11-27	0.8	2
10	Implementation of Artificial Neural Networks Using Magnetoresistive Random-Access Memory-Based Stochastic Computing Units. *IEEE Magnetics Letters*, **2021**, 12, 1-5	1.6	2
9	High-resistivity nanogranular CoAlO films for high-frequency applications. *Journal of Applied Physics*, **2007**, 101, 09M508	2.5	1
8	A model reduction based approach for extracting the diffusion and generation terms of pn junction leakage current. *Semiconductor Science and Technology*, **2003**, 18, 234-240	1.8	1

List of Publications

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6	Microstrip Array Ring FETs with 2D p-Ga2O3 Channels Grown by MOCVD. *Photonics*, **2021**, 8, 578	2.2	0
5	Electric Control of Magnetic Devices for Spintronic Computing **2015**, 53-112		
4	GUEST EDITORIAL RECENT PROGRESS IN SPINTRONIC DEVICES. *Spin*, **2012**, 02, 1202001	1.3	
3	On science, politics and simulations. *IEEE Potentials*, **2005**, 24, 6-8	1	
2	Magnetic Tunnel Junctions and Their Applications in Non-volatile Circuits **2016**, 1127-1171		
1	A 3 pJ/bit free space optical interlink platform for self-powered tetherless sensing and opto-spintronic RF-to-optical transduction. *Scientific Reports*, **2021**, 11, 8504	4.9	