

# Pranaba Muduli

## List of Publications by Year in descending order

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70  
papers

2,106  
citations

331259

21  
h-index

233125

45  
g-index

70  
all docs

70  
docs citations

70  
times ranked

1500  
citing authors

#	ARTICLE	IF	CITATIONS
1	Spin-Torque and Spin-Hall Nano-Oscillators. Proceedings of the IEEE, 2016, 104, 1919-1945.	16.4	276
2	Spin Torque-Generated Magnetic Droplet Solitons. Science, 2013, 339, 1295-1298.	6.0	237
3	Experimental Evidence of Self-Localized and Propagating Spin Wave Modes in Obliquely Magnetized Current-Driven Nanocontacts. Physical Review Letters, 2010, 105, 217204.	2.9	176
4	Spin torque oscillator frequency versus magnetic field angle: The prospect of operation beyond 65 GHz. Applied Physics Letters, 2009, 94, .	1.5	158
5	Mutually synchronized bottom-up multi-nanocontact spin-torque oscillators. Nature Communications, 2013, 4, 2731.	5.8	98
6	Nonlinear frequency and amplitude modulation of a nanocontact-based spin-torque oscillator. Physical Review B, 2010, 81, .	1.1	89
7	Large spin current generation by the spin Hall effect in mixed crystalline phase Ta thin films. Physical Review B, 2018, 98, .	1.1	54
8	Decoherence and Mode Hopping in a Magnetic Tunnel Junction Based Spin Torque Oscillator. Physical Review Letters, 2012, 108, 207203.	2.9	51
9	Spin transfer torque generated magnetic droplet solitons (invited). Journal of Applied Physics, 2014, 115, .	1.1	47
10	Bias dependence of perpendicular spin torque and of free- and fixed-layer eigenmodes in MgO-based nanopillars. Physical Review B, 2011, 83, .	1.1	43
11	Spin-torque oscillator linewidth narrowing under current modulation. Applied Physics Letters, 2011, 98, 192506.	1.5	42
12	Frequency modulation of spin torque oscillator pairs. Applied Physics Letters, 2011, 98, 192501.	1.5	41
13	Self-powered room temperature broadband infrared photodetector based on MoSe <sub>2</sub> /germanium heterojunction with 35 A/W responsivity at 1550 nm. Applied Physics Letters, 2019, 114, .	1.5	41
14	Spin Torque Oscillators and RF Currents Modulation, Locking, and Ringing. Integrated Ferroelectrics, 2011, 125, 147-154.	0.3	38
15	Antisymmetric contribution to the planar Hall effect of Fe <sub>3</sub> S films grown on GaAs(113)A substrates. Physical Review B, 2005, 72, .	1.1	35
16	Magnetic droplet solitons in orthogonal nano-contact spin torque oscillators. Physica B: Condensed Matter, 2014, 435, 84-87.	1.3	35
17	Modulation of Individual and Mutually Synchronized Nanocontact-Based Spin Torque Oscillators. IEEE Transactions on Magnetics, 2011, 47, 1575-1579.	1.2	30
18	Intrinsic frequency doubling in a magnetic tunnel junction-based spin torque oscillator. Journal of Applied Physics, 2011, 110, .	1.1	28

#	ARTICLE	IF	CITATIONS
19	Generation linewidth of mode-hopping spin torque oscillators. <i>Physical Review B</i> , 2014, 89, .	1.1	28
20	Large Damping-like Spin-Orbit Torque and Improved Device Performance Utilizing Mixed-Phase Ta. <i>ACS Applied Electronic Materials</i> , 2021, 3, 3139-3146.	2.0	26
21	Temperature dependence of linewidth in nanocontact based spin torque oscillators: Effect of multiple oscillatory modes. <i>Physical Review B</i> , 2012, 86, .	1.1	24
22	Large Spin Hall Angle in $\text{W}$ Thin Films Grown on CoFeB without Oxygen Plasma. <i>Spin</i> , 2018, 08, 1850018.	0.6	24
23	Enhancement of spin-torque diode sensitivity in a magnetic tunnel junction by parametric synchronization. <i>Applied Physics Letters</i> , 2016, 108, .	1.5	22
24	Observation of Skyrmions at Room Temperature in Co <sub>2</sub> FeAl Heusler Alloy Ultrathin Film Heterostructures. <i>Scientific Reports</i> , 2019, 9, 1085.	1.6	22
25	Direct observation of unusual interfacial Dzyaloshinskii-Moriya interaction in graphene/NiFe/Ta heterostructures. <i>Physical Review B</i> , 2019, 99, .	1.1	22
26	Mode-hopping mechanism generating colored noise in a magnetic tunnel junction based spin torque oscillator. <i>Applied Physics Letters</i> , 2014, 105, 132404.	1.5	20
27	Effect of Ru thickness on spin pumping in Ru/Py bilayer. <i>Journal of Applied Physics</i> , 2015, 117, .	1.1	19
28	Current Modulation of Nanoconstriction Spin-Hall Nano-Oscillators. <i>IEEE Magnetics Letters</i> , 2017, 8, 1-4.	0.6	19
29	Extrinsic spin-orbit coupling induced enhanced spin pumping in few-layer MoS <sub>2</sub> /Py. <i>Journal of Magnetism and Magnetic Materials</i> , 2019, 476, 337-341.	1.0	19
30	Parametric excitation in a magnetic tunnel junction-based spin torque oscillator. <i>Applied Physics Letters</i> , 2014, 104, .	1.5	18
31	Modulation Rate Study in a Spin-Torque Oscillator-Based Wireless Communication System. <i>IEEE Transactions on Magnetics</i> , 2015, 51, 1-4.	1.2	18
32	Proximity effect induced enhanced spin pumping in Py/Gd at room temperature. <i>Applied Physics Letters</i> , 2018, 112, .	1.5	18
33	Chiral skyrmion auto-oscillations in a ferromagnet under spin-transfer torque. <i>Physical Review B</i> , 2019, 99, .	1.1	18
34	Decoherence, Mode Hopping, and Mode Coupling in Spin Torque Oscillators. <i>IEEE Transactions on Magnetics</i> , 2013, 49, 4398-4404.	1.2	17
35	A high-speed single sideband generator using a magnetic tunnel junction spin torque nano-oscillator. <i>Scientific Reports</i> , 2017, 7, 13422.	1.6	17
36	Evolution of magnetic anisotropy and spin-reorientation transition in Fe films grown on GaAs(113)A substrates by molecular-beam epitaxy. <i>Journal of Applied Physics</i> , 2005, 97, 123904.	1.1	15

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37	Composition dependence of magnetic anisotropy and quadratic magneto-optical effect in epitaxial films of the Heusler alloy Co <sub>2</sub> MnGe. <i>Journal of Magnetism and Magnetic Materials</i> , 2008, 320, L141-L143.	1.0	15
38	Crystalline phase dependent spin current efficiency in sputtered Ta thin films. <i>Applied Physics Letters</i> , 2017, 110, 202402.	1.5	15
39	Antidamping spin-orbit torques in epitaxial-Py(100)/ $\hat{I}^2$ -Ta. <i>Applied Physics Letters</i> , 2017, 111, .	1.5	15
40	Study of magnetic anisotropy and magnetization reversal using the quadratic magneto-optical effect in epitaxial Co <sub>x</sub> Mn <sub>y</sub> Ge <sub>z</sub> (111) films. <i>Journal of Physics Condensed Matter</i> , 2009, 21, 296005.	0.7	14
41	Epitaxial films stabilized on GaAs(113)A substrates. <i>Journal of Crystal Growth</i> , 2005, 285, 514-520.	0.7	13
42	Direct measurement of interfacial Dzyaloshinskii-Moriya interaction at the MoS <sub>2</sub> /Ni <sub>80</sub> Fe <sub>20</sub> interface. <i>Applied Physics Letters</i> , 2020, 116, .	1.5	12
43	Composition dependent properties of Fe <sub>3</sub> Si films grown on GaAs(113)A substrates. <i>Journal of Applied Physics</i> , 2009, 105, 07B104.	1.1	11
44	Time-domain stability of parametric synchronization in a spin-torque nano-oscillator based on a magnetic tunnel junction. <i>Physical Review B</i> , 2017, 96, .	1.1	11
45	Magnetic anisotropy of Fe films on GaAs(113)A substrates. <i>Applied Physics A: Materials Science and Processing</i> , 2005, 81, 901-906.	1.1	10
46	Magnetic anisotropy in Heusler alloy Fe <sub>3</sub> Si films on GaAs(113)A. <i>Journal of Magnetism and Magnetic Materials</i> , 2007, 310, 2228-2230.	1.0	10
47	Modulation of single and double spin torque oscillators. <i>AIP Conference Proceedings</i> , 2011, , .	0.3	8
48	Influence of MgO barrier quality on spin-transfer torque in magnetic tunnel junctions. <i>Applied Physics Letters</i> , 2018, 112, .	1.5	8
49	Influence of annealing on spin pumping in sputtered deposited Co/Pt bilayer thin films. <i>Physica B: Condensed Matter</i> , 2019, 570, 254-258.	1.3	8
50	Chiral droplets and current-driven motion in ferromagnets. <i>Physical Review B</i> , 2021, 103, .	1.1	8
51	Combined Wide-Narrow Double Modulation of Spin-Torque Oscillators for Improved Linewidth During Communication. <i>IEEE Transactions on Magnetics</i> , 2012, 48, 4077-4080.	1.2	7
52	Modulation-mediated unlocking of a parametrically phase-locked spin torque oscillator. <i>Applied Physics Letters</i> , 2014, 105, 252404.	1.5	7
53	Intrinsic anomalous Hall effect in thin films of topological kagome ferromagnet Fe <sub>3</sub> Sn <sub>2</sub> . <i>Nanoscale</i> , 2022, 14, 8484-8492.	2.8	7
54	Tunneling magnetoresistance in spin valves exchange biased with metallic antiferromagnet La <sub>0.45</sub> Sr <sub>0.55</sub> MnO <sub>3</sub> . <i>Journal of Applied Physics</i> , 2009, 106, .	1.1	6

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55	Learning of classification tasks with an array of uniform-mode spin Hall nano-oscillators. AIP Advances, 2021, 11, .	0.6	6
56	Investigation of magnetic anisotropy and magnetization reversal by planar Hall effect in Fe <sub>3</sub> Si and Fe films grown on GaAs(113)A substrates. Journal of Physics Condensed Matter, 2006, 18, 9453-9462.	0.7	5
57	Simultaneous enhancement of spin-torque diode sensitivity and frequency by voltage controlled magnetic anisotropy and parametric synchronization. Applied Physics Letters, 2019, 115, .	1.5	5
58	Planar Hall Effect in Epitaxial Fe Layers on GaAs(001) and GaAs(113)A Substrates. Journal of Superconductivity and Novel Magnetism, 2006, 18, 309-314.	0.5	4
59	Microwave Oscillators and Detectors Based on Magnetic Tunnel Junctions. , 2021, , 3-44.		4
60	Thermal Decay of a Single Néel Skyrmion via Helicity Slip in a Nanodisk. Physica Status Solidi - Rapid Research Letters, 2020, 14, 1900525.	1.2	3
61	Ferrimagnetic Synapse Devices for Fast and Energy-Efficient On-Chip Learning on Crossbar-Array-Based Neural Networks (A Device-Circuit-System Costudy). IEEE Transactions on Electron Devices, 2022, 69, 1713-1720.	1.6	3
62	Photo-Induced Negative Differential Transconductance in Back-Gated Layered MoSe <sub>2</sub> /p-Ge Heterojunction Field Effect Transistors. ACS Applied Electronic Materials, 2020, 2, 1567-1573.	2.0	2
63	Enhanced Modulation Bandwidth of a Magnetic Tunnel Junction-Based Spin Torque Nano-Oscillator Under Strong Current Modulation. IEEE Electron Device Letters, 2021, 42, 1886-1889.	2.2	2
64	Spin wave excitations in Fe films grown on GaAs(113)A substrates. Journal of Magnetism and Magnetic Materials, 2008, 320, 2835-2838.	1.0	1
65	Strong dependence of the magnetic anisotropy on the growth temperature of () films on GaAs(113)A substrates. Journal of Magnetism and Magnetic Materials, 2009, 321, 3488-3492.	1.0	1
66	Magnetic anisotropy of ultrathin epitaxial Fe films on As-terminated GaAs(001)-(2 $\times$ 1) surfaces. , 0, , .		0
67	Exchange-bias-like effect in L <sub>0</sub> (111) FePt based pseudo spin valves. Journal of Physics: Conference Series, 2010, 200, 072110.	0.3	0
68	Modulation rate study in spin torque oscillator based wireless communication system. , 2015, , .		0
69	Tuning of Single Sideband Generation by In-Plane Field Angle in Spin Torque Nano-Oscillators. , 2018, , .		0
70	Energy-efficient ultrafast nucleation of single and multiple antiferromagnetic skyrmions using in-plane spin polarized current. Scientific Reports, 2021, 11, 12332.	1.6	0