

Pedram Khalili Amiri

List of Publications by Year in descending order

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143
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times ranked

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#	ARTICLE	IF	CITATIONS
1	Antiferromagnetic Parametric Resonance Driven by Voltage-Controlled Magnetic Anisotropy. <i>Physical Review Applied</i> , 2022, 17, .	3.8	6
2	Anomalous Thermal-Assisted Spin-Orbit Torque-Induced Magnetization Switching for Energy-Efficient Logic-in-Memory. <i>ACS Nano</i> , 2022, 16, 8264-8272.	14.6	9
3	Micromagnetic Investigation of a Voltage-Controlled Skymionic Magnon Switch. <i>Physical Review Applied</i> , 2022, 17, .	3.8	4
4	Adaptive MRAM Write and Read with MTJ Variation Monitor. <i>IEEE Transactions on Emerging Topics in Computing</i> , 2021, 9, 402-413.	4.6	8
5	The promise of spintronics for unconventional computing. <i>Journal of Magnetism and Magnetic Materials</i> , 2021, 521, 167506.	2.3	66
6	Implementation of Artificial Neural Networks Using Magnetoresistive Random-Access Memory-Based Stochastic Computing Units. <i>IEEE Magnetics Letters</i> , 2021, 12, 1-5.	1.1	11
7	3D Ferrimagnetic Device for Multi-Bit Storage and Efficient In-Memory Computing. <i>IEEE Electron Device Letters</i> , 2021, 42, 152-155.	3.9	8
8	A 3 pJ/bit free space optical interlink platform for self-powered tetherless sensing and opto-spintronic RF-to-optical transduction. <i>Scientific Reports</i> , 2021, 11, 8504.	3.3	1
9	Observation of current-induced switching in non-collinear antiferromagnetic IrMn ₃ by differential voltage measurements. <i>Nature Communications</i> , 2021, 12, 3828.	12.8	31
10	Field-free spin-orbit torque-induced switching of perpendicular magnetization in a ferrimagnetic layer with a vertical composition gradient. <i>Nature Communications</i> , 2021, 12, 4555.	12.8	105
11	Microstrip Array Ring FETs with 2D p-Ga ₂ O ₃ Channels Grown by MOCVD. <i>Photonics</i> , 2021, 8, 578.	2.0	4
12	Fast and programmable locomotion of hydrogel-metal hybrids under light and magnetic fields. <i>Science Robotics</i> , 2020, 5, .	17.6	163
13	Perpendicular magnetization switching by large spin-orbit torques from sputtered Bi ₂ Te ₃ . <i>Chinese Physics B</i> , 2020, 29, 078505.	1.4	23
14	Electrical manipulation of the magnetic order in antiferromagnetic PtMn pillars. <i>Nature Electronics</i> , 2020, 3, 92-98.	26.0	65
15	Dynamics of domain-wall motion driven by spin-orbit torque in antiferromagnets. <i>Physical Review B</i> , 2020, 101, .	3.2	33
16	Domain periodicity in an easy-plane antiferromagnet with Dzyaloshinskii-Moriya interaction. <i>Physical Review B</i> , 2020, 102, .	3.2	6
17	Editorial for the Special Issue on Emerging Memory and Computing Devices in the Era of Intelligent Machines. <i>Micromachines</i> , 2020, 11, 73.	2.9	0
18	Enhanced Broad-band Radio Frequency Detection in Nanoscale Magnetic Tunnel Junction by Interface Engineering. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 29382-29387.	8.0	17

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19	Predictive Materials Design of Magnetic Random-Access Memory Based on Nanoscale Atomic Structure and Element Distribution. Nano Letters, 2019, 19, 8621-8629.	9.1	22
20	Voltage-Controlled Magnetic Anisotropy in Heterostructures with Atomically Thin Heavy Metals. Physical Review Applied, 2019, 12, .	3.8	22
21	Experimental Demonstration of Spintronic Broadband Microwave Detectors and Their Capability for Powering Nanodevices. Physical Review Applied, 2019, 11, .	3.8	49
22	Control of Spin-Wave Damping in YIG Using Spin Currents from Topological Insulators. Physical Review Applied, 2019, 11, .	3.8	30
23	Colossal electric field control of magnetic anisotropy at ferromagnetic interfaces induced by iridium overlayer. Physical Review B, 2019, 99, .	3.2	24
24	Picosecond Electric-Field-Induced Switching of Antiferromagnets. Physical Review Applied, 2019, 11, .	3.8	20
25	Analysis and Compact Modeling of Magnetic Tunnel Junctions Utilizing Voltage-Controlled Magnetic Anisotropy. IEEE Transactions on Magnetics, 2018, 54, 1-9.	2.1	27
26	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.	3.1	5
27	Room-Temperature Skyrmions in an Antiferromagnet-Based Heterostructure. Nano Letters, 2018, 18, 980-986.	9.1	98
28	Spin torques join forces in a memory device. Nature Electronics, 2018, 1, 576-577.	26.0	3
29	Spin-Torque Ferromagnetic Resonance in W/Co Multilayers	2.3	23
30	High Frequency Extended Short-Wavelength Infrared Heterojunction Photodetectors Based on InAs/GaSb/AlSb Type-II Superlattices. IEEE Journal of Quantum Electronics, 2018, 54, 1-5.	1.9	6
31	Ultrahigh detection sensitivity exceeding 105 V/W in spin-torque diode. Applied Physics Letters, 2018, 113, .	3.3	43
32	Giant interfacial perpendicular magnetic anisotropy in MgO/CoFe/capping layer structures. Applied Physics Letters, 2017, 110, .	3.3	73
33	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.	3.1	15
34	Joule Heating Effect on Field-Free Magnetization Switching by Spin-Orbit Torque in Exchange-Biased Systems. Physical Review Applied, 2017, 7, .	3.8	48
35	Enhancement of voltage-controlled magnetic anisotropy through precise control of Mg insertion thickness at CoFeB/MgO interface. Applied Physics Letters, 2017, 110, .	3.3	92
36	Array-Level Analysis of Magneto-Electric Random-Access Memory for High-Performance Embedded Applications. IEEE Magnetics Letters, 2017, 8, 1-5.	1.1	3

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37	Design of high-throughput and low-power true random number generator utilizing perpendicularly magnetized voltage-controlled magnetic tunnel junction. AIP Advances, 2017, 7, .	1.3	31
38	Perpendicular magnetic tunnel junction with W seed and capping layers. Journal of Applied Physics, 2017, 121, .	2.5	21
39	Write Error Rate and Read Disturbance in Electric-Field-Controlled Magnetic Random-Access Memory. IEEE Magnetics Letters, 2017, 8, 1-5.	1.1	37
40	Hybrid VC-MTJ/CMOS non-volatile stochastic logic for efficient computing. , 2017, , .		10
41	Efficient Excitation of High-Frequency Exchange-Dominated Spin Waves in Periodic Ferromagnetic Structures. Physical Review Applied, 2017, 7, .	3.8	22
42	A Spintronic Voltage-Controlled Stochastic Oscillator for Event-Driven Random Sampling. IEEE Electron Device Letters, 2017, 38, 281-284.	3.9	15
43	Room-Temperature Skyrmion Shift Device for Memory Application. Nano Letters, 2017, 17, 261-268.	9.1	227
44	Analog to Stochastic Bit Stream Converter Utilizing Voltage-Assisted Spin Hall Effect. IEEE Electron Device Letters, 2017, 38, 1343-1346.	3.9	16
45	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, .	3.3	14
46	A 65-nm ReRAM-Enabled Nonvolatile Processor With Time-Space Domain Adaption and Self-Write-Termination Achieving $> 4\times$ Faster Clock Frequency and $> 6\times$ Higher Restore Speed. IEEE Journal of Solid-State Circuits, 2017, 52, 2769-2785.	5.4	8
47	Large voltage-controlled magnetic anisotropy in the SrTiO ₃ /Fe/Cu structure. Applied Physics Letters, 2017, 111, 152403.	3.3	16
48	A ReRAM-Based Nonvolatile Flip-Flop With Self-Write-Termination Scheme for Frequent-OFF Fast-Wake-Up Nonvolatile Processors. IEEE Journal of Solid-State Circuits, 2017, 52, 2194-2207.	5.4	41
49	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.	5.5	8
50	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.	5.5	20
51	Leveraging nMOS Negative Differential Resistance for Low Power, High Reliability Magnetic Memory. IEEE Transactions on Electron Devices, 2017, 64, 4084-4090.	3.0	6
52	Giant spin-torque diode sensitivity in the absence of bias magnetic field. Nature Communications, 2016, 7, 11259.	12.8	123
53	Competing effect of spin-orbit torque terms on perpendicular magnetization switching in structures with multiple inversion asymmetries. Scientific Reports, 2016, 6, 23956.	3.3	21
54	Ultra-low switching energy and scaling in electric-field-controlled nanoscale magnetic tunnel junctions with high resistance-area product. Applied Physics Letters, 2016, 108, .	3.3	186

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55	Spin-torque ferromagnetic resonance measurements utilizing spin Hall magnetoresistance in W/Co40Fe40B20/MgO structures. Applied Physics Letters, 2016, 109, .	3.3	36
56	Influence of inserted Mo layer on the thermal stability of perpendicularly magnetized Ta/Mo/Co20Fe60B20/MgO/Ta films. AIP Advances, 2016, 6, .	1.3	8
57	In-plane current-driven spin-orbit torque switching in perpendicularly magnetized films with enhanced thermal tolerance. Applied Physics Letters, 2016, 108, .	3.3	26
58	Electric-field-driven magnetization switching and nonlinear magnetoelasticity in Au/FeCo/MgO heterostructures. Scientific Reports, 2016, 6, 29815.	3.3	48
59	Effect of heavy metal layer thickness on spin-orbit torque and current-induced switching in Hf CoFeB MgO structures. Applied Physics Letters, 2016, 109, .	3.3	33
60	Enhanced voltage-controlled magnetic anisotropy in magnetic tunnel junctions with an MgO/PZT/MgO tunnel barrier. Applied Physics Letters, 2016, 108, .	3.3	32
61	Spin-orbit torques in perpendicularly magnetized Ir22Mn78/Co20Fe60B20/MgO multilayer. Applied Physics Letters, 2016, 109, .	3.3	58
62	In-plane magnetic field effect on switching voltage and thermal stability in electric-field-controlled perpendicular magnetic tunnel junctions. AIP Advances, 2016, 6, 075014.	1.3	19
63	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, , .		17
64	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.	3.6	81
65	Ultra-low-power, high-density spintronic programmable logic (SPL). , 2016, , .		2
66	MTJ variation monitor-assisted adaptive MRAM write. , 2016, , .		13
67	Electric-Field Control of Spin-Orbit Interaction for Low-Power Spintronics. Proceedings of the IEEE, 2016, 104, 1974-2008.	21.3	53
68	Strong Rashba-Edelstein Effect-Induced Spin-Orbit Torques in Monolayer Transition Metal Dichalcogenide/Ferromagnet Bilayers. Nano Letters, 2016, 16, 7514-7520.	9.1	247
69	Oscillatory magnetic anisotropy and spin-reorientation induced by heavy-metal cap in Cu/FeCo/ M () Tj ETQq1 1 0.784314 rgBT /Overl	3.2	6
70	4.7 A 65nm ReRAM-enabled nonvolatile processor with 6Å— reduction in restore time and 4Å— higher clock frequency using adaptive data retention and self-write-termination nonvolatile logic. , 2016, , .		53
71	Source Line Sensing in Magneto-Electric Random-Access Memory to Reduce Read Disturbance and Improve Sensing Margin. IEEE Magnetism Letters, 2016, 7, 1-5.	1.1	11
72	Low-Power, High-Density Spintronic Programmable Logic With Voltage-Gated Spin Hall Effect in Magnetic Tunnel Junctions. IEEE Magnetism Letters, 2016, 7, 1-5.	1.1	16

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73	Room-Temperature Creation and Spin-Orbit Torque Manipulation of Skyrmions in Thin Films with Engineered Asymmetry. Nano Letters, 2016, 16, 1981-1988.	9.1	275
74	Magnetic Tunnel Junctions and Their Applications in Non-volatile Circuits. , 2016, , 1127-1171.		0
75	Giant voltage modulation of magnetic anisotropy in strained heavy metal/magnet/insulator heterostructures. Physical Review B, 2015, 92, .	3.2	79
76	Electric-field guiding of magnetic skyrmions. Physical Review B, 2015, 92, .	3.2	89
77	Thermally stable voltage-controlled perpendicular magnetic anisotropy in Mo CoFeB MgO structures. Applied Physics Letters, 2015, 107, .	3.3	47
78	Strain-mediated 180° perpendicular magnetization switching of a single domain multiferroic structure. Journal of Applied Physics, 2015, 118, 014101.	2.5	35
79	Size reduction and dual mode degeneracy in microstrip patch antenna using periodically rippled silicon substrate. , 2015, , .		0
80	Electric-field-controlled MRAM based on voltage control of magnetic anisotropy (VCMA): Recent progress and perspectives. , 2015, , .		2
81	Magneto-optical investigation of spin-orbit torques in metallic and insulating magnetic heterostructures. Nature Communications, 2015, 6, 8958.	12.8	80
82	Strain-induced modulation of perpendicular magnetic anisotropy in Ta/CoFeB/MgO structures investigated by ferromagnetic resonance. Applied Physics Letters, 2015, 106, .	3.3	79
83	The computer chip that never forgets. IEEE Spectrum, 2015, 52, 30-56.	0.7	12
84	Magnetic Tunnel Junctions and Their Applications in Nonvolatile Circuits. , 2015, , 1-36.		2
85	Electric-Field-Controlled Magnetoelectric RAM: Progress, Challenges, and Scaling. IEEE Transactions on Magnetics, 2015, 51, 1-7.	2.1	108
86	Electric Control of Magnetic Devices for Spintronic Computing. , 2015, , 53-112.		0
87	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, .	3.3	55
88	The influence of an MgO nanolayer on the planar Hall effect in NiFe films. Journal of Applied Physics, 2015, 117, .	2.5	5
89	Current-induced spin-orbit torque switching of perpendicularly magnetized Hf CoFeB MgO and Hf CoFeB TaOx structures. Applied Physics Letters, 2015, 106, .	3.3	55
90	Magnetoelectric Random Access Memory-Based Circuit Design by Using Voltage-Controlled Magnetic Anisotropy in Magnetic Tunnel Junctions. IEEE Nanotechnology Magazine, 2015, 14, 992-997.	2.0	50

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91	Strain control magnetocrystalline anisotropy of Ta/FeCo/MgO heterostructures. Journal of Applied Physics, 2015, 117, .	2.5	18
92	Electric-field-controlled MRAM using voltage control of magnetic anisotropy: Progress, scaling, and challenges. , 2015, , .		0
93	Design of a Fast and Low-Power Sense Amplifier and Writing Circuit for High-Speed MRAM. IEEE Transactions on Magnetics, 2015, 51, 1-7.	2.1	18
94	Current-driven perpendicular magnetization switching in Ta/CoFeB/[TaOx or MgO/TaOx] films with lateral structural asymmetry. Applied Physics Letters, 2014, 105, .	3.3	71
95	Electric-field-induced spin wave generation using multiferroic magnetoelectric cells. Applied Physics Letters, 2014, 104, 082403.	3.3	144
96	Switching of perpendicular magnetization by spin-orbit torques in the absence of external magnetic fields. Nature Nanotechnology, 2014, 9, 548-554.	31.5	753
97	Low-power MRAM for nonvolatile electronics: Electric field control and spin-orbit torques. , 2014, , .		7
98	Electric field control and effect of Pd capping on magnetocrystalline anisotropy in FePd thin films: A first-principles study. Physical Review B, 2014, 89, .	3.2	41
99	Magnetization switching through spin-Hall-effect-induced chiral domain wall propagation. Physical Review B, 2014, 89, .	3.2	121
100	Temperature dependence of the voltage-controlled perpendicular anisotropy in nanoscale MgO CoFeB Ta magnetic tunnel junctions. Applied Physics Letters, 2014, 104, .	3.3	119
101	Electric-field-induced thermally assisted switching of monodomain magnetic bits. Journal of Applied Physics, 2013, 113, .	2.5	27
102	Ultralow-current-density and bias-field-free spin-transfer nano-oscillator. Scientific Reports, 2013, 3, 1426.	3.3	162
103	Diode-MTJ Crossbar Memory Cell Using Voltage-Induced Unipolar Switching for High-Density MRAM. IEEE Electron Device Letters, 2013, 34, 753-755.	3.9	39
104	Low-power non-volatile spintronic memory: STT-RAM and beyond. Journal Physics D: Applied Physics, 2013, 46, 074003.	2.8	391
105	Electric field induced domain-wall dynamics: Depinning and chirality switching. Physical Review B, 2013, 88, .	3.2	6
106	GUEST EDITORIAL "RECENT PROGRESS IN SPINTRONIC DEVICES". Spin, 2012, 02, 1202001.	1.3	0
107	Sub-200Åps spin transfer torque switching in in-plane magnetic tunnel junctions with interface perpendicular anisotropy. Journal Physics D: Applied Physics, 2012, 45, 025001.	2.8	46
108	Quantitative analysis of electric field induced change in anisotropy field in Co ₆₀ Fe ₂₀ B ₂₀ /(011) xPb(Mg _{1/3} Nb _{2/3})O ₃ -(1-x)PbTiO ₃ (x = 0.68) heterostructures. Applied Physics Letters, 2012, 101, .	3.3	6

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109	Ultrafast spin torque memory based on magnetic tunnel junctions with combined in-plane and perpendicular polarizers. , 2012, , .		1
110	Deviation from exponential decay for spin waves excited with a coplanar waveguide antenna. Applied Physics Letters, 2012, 101, 252409.	3.3	10
111	Spintronics for instant-on nonvolatile electronics. , 2012, , .		0
112	Spin-Torque Driven Switching Probability Density Function Asymmetry. IEEE Transactions on Magnetics, 2012, 48, 3818-3820.	2.1	24
113	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	28
114	The influence of in-plane ferroelectric crystal orientation on electrical modulation of magnetic properties in Co ₆₀ Fe ₂₀ B ₂₀ /SiO ₂ /(011) xPb(Mg _{1/3} Nb _{2/3})O ₃ -(1â€%âˆ”â€%x)PbTiO ₃ heterostructures. Journal of Applied Physics, 2012, 112, 033916.	2.5	4
115	Voltage-induced switching of nanoscale magnetic tunnel junctions. , 2012, , .		59
116	Nanoscale magnetic tunnel junction sensors with perpendicular anisotropy sensing layer. Applied Physics Letters, 2012, 101, 062412.	3.3	48
117	VOLTAGE-CONTROLLED MAGNETIC ANISOTROPY IN SPINTRONIC DEVICES. Spin, 2012, 02, 1240002.	1.3	122
118	Voltage-Induced Ferromagnetic Resonance in Magnetic Tunnel Junctions. Physical Review Letters, 2012, 108, 197203.	7.8	231
119	Magnetic bit stability: Competition between domain-wall and monodomain switching. Applied Physics Letters, 2012, 100, 212406.	3.3	5
120	Magneto-electric tuning of the phase of propagating spin waves. Applied Physics Letters, 2012, 101, .	3.3	28
121	Spin-Transfer Torque Switching Above Ambient Temperature. IEEE Magnetics Letters, 2012, 3, 3000304-3000304.	1.1	8
122	High-Power Coherent Microwave Emission from Magnetic Tunnel Junction Nano-oscillators with Perpendicular Anisotropy. ACS Nano, 2012, 6, 6115-6121.	14.6	125
123	Spin wave functions nanofabric update. , 2011, , .		20
124	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, .	2.5	99
125	Switching current reduction using perpendicular anisotropy in CoFeBâ€“MgO magnetic tunnel junctions. Applied Physics Letters, 2011, 98, .	3.3	169
126	Effect of resistance-area product on spin-transfer switching in MgO-based magnetic tunnel junction memory cells. Applied Physics Letters, 2011, 98, .	3.3	49

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127	Low Write-Energy Magnetic Tunnel Junctions for High-Speed Spin-Transfer-Torque MRAM. IEEE Electron Device Letters, 2011, 32, 57-59.	3.9	51
128	Deep subnanosecond spin torque switching in magnetic tunnel junctions with combined in-plane and perpendicular polarizers. Applied Physics Letters, 2011, 98, .	3.3	82
129	Thermal stability characterization of magnetic tunnel junctions using hard-axis magnetoresistance measurements. Journal of Applied Physics, 2011, 109, 07C708.	2.5	7
130	Enhancement of microwave emission in magnetic tunnel junction oscillators through in-plane field orientation. Applied Physics Letters, 2011, 99, .	3.3	39
131	Electrical control of reversible and permanent magnetization reorientation for magnetoelectric memory devices. Applied Physics Letters, 2011, 98, .	3.3	153
132	Nonreciprocal Spin Waves in Co-Ta-Zr Films and Multilayers. IEEE Transactions on Magnetics, 2009, 45, 4215-4218.	2.1	5
133	Integrated Microstrip Lines With Co-Ta-Zr Magnetic Films. IEEE Transactions on Magnetics, 2008, 44, 3103-3106.	2.1	4
134	High-resistivity nanogranular Co-Al-O films for high-frequency applications. Journal of Applied Physics, 2007, 101, 09M508.	2.5	2
135	Experimental Determination of the Nonuniform Shape-Induced Anisotropy Field in Thin Ni-Fe Films. IEEE Transactions on Magnetics, 2007, 43, 1880-1883.	2.1	6
136	Ferromagnetic Thin Films for Loss Reduction in On-Chip Transmission Lines. IEEE Transactions on Magnetics, 2007, 43, 2630-2632.	2.1	3
137	Nonreciprocal spin wave spectroscopy of thin Ni-Fe stripes. Applied Physics Letters, 2007, 91, .	3.3	42
138	Tight-Binding Analysis of Coupled Dielectric Waveguide Structures. Fiber and Integrated Optics, 2006, 25, 11-27.	2.5	2
139	Magnetostatic waves in layered materials and devices. Journal of Applied Physics, 2006, 100, 103909.	2.5	4
140	On science, politics and simulations. IEEE Potentials, 2005, 24, 6-8.	0.3	0
141	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.	2.0	1
142	Quantum computers. IEEE Potentials, 2002, 21, 6-9.	0.3	14
143	Ultralow-current-density and bias-field-free spin-transfer nano-oscillator. , 0, .		1