

Shoji Ikeda

List of Publications by Year in descending order

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129
papers

11,327
citations

76326

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30087

103
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129
docs citations

129
times ranked

5412
citing authors

#	ARTICLE	IF	CITATIONS
19	Effect of surface modification treatment of buffer layer on thermal tolerance of synthetic ferrimagnetic reference layer in perpendicular-anisotropy magnetic tunnel junctions. Journal of Applied Physics, 2019, 126, .	2.5	7
20	Change in chemical bonding state by thermal treatment in MgO-based magnetic tunnel junction observed by angle-resolved hard X-ray photoelectron spectroscopy. Journal of Applied Physics, 2019, 125, .	2.5	6
21	Insertion Layer Thickness Dependence of Magnetic and Electrical Properties for Double-CoFeB/MgO-Interface Magnetic Tunnel Junctions. IEEE Transactions on Magnetics, 2019, 55, 1-4.	2.1	12
22	A novel memory test system with an electromagnet for STT-MRAM testing. , 2019, , .		1
23	Effect of capping layer material on thermal tolerance of magnetic tunnel junctions with MgO/CoFeB-based free layer/MgO/capping layers. AIP Advances, 2019, 9, .	1.3	3
24	Novel Method of Evaluating Accurate Thermal Stability for MTJs Using Thermal Disturbance and its Demonstration for Single-/Double-Interface p-MTJ. IEEE Transactions on Magnetics, 2018, 54, 1-5.	2.1	7
25	14ns write speed 128Mb density Embedded STT-MRAM with endurance $>10^{10}$ and 10yrs retention@85 $^{\circ}$ C using novel low damage MTJ integration process. , 2018, , .		33
26	High thermal tolerance synthetic ferrimagnetic reference layer with modified buffer layer by ion irradiation for perpendicular anisotropy magnetic tunnel junctions.. , 2018, , .		0
27	STEM tomography study on structural features induced by MTJ processing. Applied Physics A: Materials Science and Processing, 2018, 124, 1.	2.3	4
28	Origin of variation of shift field via annealing at 400 $^{\circ}$ C in a perpendicular-anisotropy magnetic tunnel junction with [Co/Pt]-multilayers based synthetic ferrimagnetic reference layer. AIP Advances, 2017, 7, .	1.3	9
29	Atomic structure and electronic properties of MgO grain boundaries in tunnelling magnetoresistive devices. Scientific Reports, 2017, 7, 45594.	3.3	35
30	Impact of Tungsten Sputtering Condition on Magnetic and Transport Properties of Double-MgO Magnetic Tunneling Junction With CoFeB/W/CoFeB Free Layer. IEEE Transactions on Magnetics, 2017, 53, 1-4.	2.1	17
31	Annealing temperature dependence of magnetic properties of CoFeB/MgO stacks on different buffer layers. Japanese Journal of Applied Physics, 2017, 56, 0802B2.	1.5	14
32	Magnetic tunnel junctions with perpendicular easy axis at junction diameter of less than 20 nm. Japanese Journal of Applied Physics, 2017, 56, 0802A6.	1.5	17
33	Fast neutron tolerance of the perpendicular-anisotropy CoFeB/MgO magnetic tunnel junctions with junction diameters between 46 and 64 nm. Japanese Journal of Applied Physics, 2017, 56, 0802B3.	1.5	4
34	Soft errors in 10-nm-scale magnetic tunnel junctions exposed to high-energy heavy-ion radiation. Japanese Journal of Applied Physics, 2017, 56, 0802B4.	1.5	17
35	An Overview of Nonvolatile Emerging Memoriesâ€” Spintronics for Working Memories. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2016, 6, 109-119.	3.6	121
36	Free- and reference-layer magnetization modes versus in-plane magnetic field in a magnetic tunnel junction with perpendicular magnetic easy axis. Physical Review B, 2016, 94, .	3.2	4

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37	Standby-Power-Free Integrated Circuits Using MTJ-Based VLSI Computing. Proceedings of the IEEE, 2016, 104, 1844-1863.	21.3	102
38	Atomic-Scale Structure and Local Chemistry of CoFeB/MgO Magnetic Tunnel Junctions. Nano Letters, 2016, 16, 1530-1536.	9.1	85
39	Improvement of Thermal Tolerance of CoFeB/MgO Perpendicular-Anisotropy Magnetic Tunnel Junctions by Controlling Boron Composition. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	17
40	Dependence of magnetic properties of MgO/CoFeB/Ta stacks on CoFeB and Ta thicknesses. Japanese Journal of Applied Physics, 2015, 54, 04DM04.	1.5	9
41	Power-gated 32 bit microprocessor with a power controller circuit activated by deep-sleep-mode instruction achieving ultra-low power operation. Japanese Journal of Applied Physics, 2015, 54, 04DE08.	1.5	8
42	Diffusion behaviors observed on the surface of CoFeB film after the natural oxidation and the annealing. , 2015, , .		0
43	1T1MTJ STT-MRAM Cell Array Design with an Adaptive Reference Voltage Generator for Improving Device Variation Tolerance. , 2015, , .		13
44	In-plane anisotropy of a nano-scaled magnetic tunnel junction with perpendicular magnetic easy axis. Japanese Journal of Applied Physics, 2015, 54, 04DM03.	1.5	5
45	Evidence of a reduction reaction of oxidized iron/cobalt by boron atoms diffused toward naturally oxidized surface of CoFeB layer during annealing. Applied Physics Letters, 2015, 106, 142407.	3.3	11
46	Fabrication of a 3000-6-input-LUTs embedded and block-level power-gated nonvolatile FPGA chip using p-MTJ-based logic-in-memory structure. , 2015, , .		6
47	Challenge of MTJ-based nonvolatile logic-in-memory architecture for ultra low-power and highly dependable VLSI computing. , 2015, , .		2
48	Nonvolatile Logic-in-Memory LSI Using Cycle-Based Power Gating and its Application to Motion-Vector Prediction. IEEE Journal of Solid-State Circuits, 2015, 50, 476-489.	5.4	53
49	Process-induced damage and its recovery for a CoFeB/MgO magnetic tunnel junction with perpendicular magnetic easy axis. Japanese Journal of Applied Physics, 2014, 53, 103001.	1.5	17
50	Distribution of critical current density for magnetic domain wall motion. Journal of Applied Physics, 2014, 115, 17D508.	2.5	3
51	Wide operational margin capability of 1 kbit spin-transfer-torque memory array chip with 1-PMOS and 1-bottom-pin-magnetic-tunnel-junction type cell. Japanese Journal of Applied Physics, 2014, 53, 04ED13.	1.5	7
52	Perpendicular-anisotropy CoFeB-MgO based magnetic tunnel junctions scaling down to 1X nm. , 2014, , .		20
53	Properties of magnetic tunnel junctions with a MgO/CoFeB/Ta/CoFeB/MgO recording structure down to junction diameter of 11 nm. Applied Physics Letters, 2014, 105, .	3.3	240
54	Domain Wall Motion Device for Nonvolatile Memory and Logic Size Dependence of Device Properties. IEEE Transactions on Magnetics, 2014, 50, 1-6.	2.1	21

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55	Power reduction by power gating in differential pair type spin-transfer-torque magnetic random access memories for low-power nonvolatile cache memories. Japanese Journal of Applied Physics, 2014, 53, 04ED04.	1.5	3
56	Co/Pt multilayer based reference layers in magnetic tunnel junctions for nonvolatile spintronics VLSIs. Japanese Journal of Applied Physics, 2014, 53, 04EM02.	1.5	33
57	A two-transistor bootstrap type selective device for spin-transfer-torque magnetic tunnel junctions. Japanese Journal of Applied Physics, 2014, 53, 04ED03.	1.5	1
58	Plasma process induced physical damages on multilayered magnetic films for magnetic domain wall motion. Japanese Journal of Applied Physics, 2014, 53, 03DF03.	1.5	7
59	Magnetization reversal induced by in-plane current in Ta/CoFeB/MgO structures with perpendicular magnetic easy axis. Journal of Applied Physics, 2014, 115, 17C714.	2.5	30
60	Influence of Heavy Ion Irradiation on Perpendicular-Anisotropy CoFeB-MgO Magnetic Tunnel Junctions. IEEE Transactions on Nuclear Science, 2014, 61, 1710-1716.	2.0	35
61	Magnetization switching in a CoFeB/MgO magnetic tunnel junction by combining spin-transfer torque and electric field-effect. Applied Physics Letters, 2014, 104, .	3.3	87
62	Electric Field-Induced Magnetization Switching in CoFeB-MgO Static Magnetic Field Angle Dependence. IEEE Transactions on Magnetics, 2014, 50, 1-3.	2.1	2
63	Trend of tunnel magnetoresistance and variation in threshold voltage for keeping data load robustness of metal-oxide-semiconductor/magnetic tunnel junction hybrid latches. Journal of Applied Physics, 2014, 115, 17C728.	2.5	12
64	Co/Pt multilayer-based magnetic tunnel junctions with a CoFeB/Ta insertion layer. Journal of Applied Physics, 2014, 115, 17C719.	2.5	22
65	In-plane magnetic field dependence of electric field-induced magnetization switching. Applied Physics Letters, 2013, 103, .	3.3	53
66	Nonvolatile logic-in-memory array processor in 90nm MTJ/MOS achieving 75% leakage reduction using cycle-based power gating. , 2013, , .		41
67	MgO/CoFeB/Ta/CoFeB/MgO Recording Structure in Magnetic Tunnel Junctions With Perpendicular Easy Axis. IEEE Transactions on Magnetics, 2013, 49, 4437-4440.	2.1	120
68	A 1 Mb Nonvolatile Embedded Memory Using 4T2MTJ Cell With 32 b Fine-Grained Power Gating Scheme. IEEE Journal of Solid-State Circuits, 2013, 48, 1511-1520.	5.4	70
69	Magnetotransport measurements of current induced effective fields in Ta/CoFeB/MgO. Applied Physics Letters, 2013, 103, .	3.3	30
70	Enhanced interface perpendicular magnetic anisotropy in Ta CoFeB MgO using nitrogen doped Ta underlayers. Applied Physics Letters, 2013, 102, .	3.3	117
71	Electrical endurance of Co/Ni wire for magnetic domain wall motion device. Applied Physics Letters, 2013, 102, 222410.	3.3	7
72	Three terminal magnetic tunnel junction utilizing the spin Hall effect of iridium-doped copper. Applied Physics Letters, 2013, 102, .	3.3	99

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73	Magnetic properties of MgO-[Co/Pt] multilayers with a CoFeB insertion layer. Journal of Applied Physics, 2013, 113, .	2.5	28
74	Comprehensive study of CoFeB-MgO magnetic tunnel junction characteristics with single- and double-interface scaling down to 1X nm. , 2013, , .		49
75	20-nm magnetic domain wall motion memory with ultralow-power operation. , 2013, , .		42
76	Influence of heavy ion irradiation on perpendicular-anisotropy CoFeB-MgO magnetic tunnel junctions. , 2013, , .		7
77	A 1-Mb STT-MRAM with zero-array standby power and 1.5-ns quick wake-up by 8-b fine-grained power gating. , 2013, , .		5
78	Dependence of Magnetic Anisotropy in Co ₂ Fe ₆₀ B ₂₀ Free Layers on Capping Layers in MgO-Based Magnetic Tunnel Junctions with In-Plane Easy Axis. Applied Physics Express, 2012, 5, 053002.	2.4	28
79	Time-Resolved Switching Characteristic in Magnetic Tunnel Junction with Spin Transfer Torque Write Scheme. Japanese Journal of Applied Physics, 2012, 51, 02BM02.	1.5	7
80	Material parameters and thermal stability of synthetic ferrimagnet free layers in magnetic tunnel junction nanopillars. Journal of Applied Physics, 2012, 112, 053922.	2.5	1
81	Transmission electron microscopy study on the effect of various capping layers on CoFeB/MgO/CoFeB pseudo spin valves annealed at different temperatures. Journal of Applied Physics, 2012, 111, .	2.5	50
82	RECENT PROGRESS OF PERPENDICULAR ANISOTROPY MAGNETIC TUNNEL JUNCTIONS FOR NONVOLATILE VLSI. Spin, 2012, 02, 1240003.	1.3	63
83	Electric field-induced magnetization reversal in a perpendicular-anisotropy CoFeB-MgO magnetic tunnel junction. Applied Physics Letters, 2012, 101, .	3.3	341
84	Observation of boron diffusion in an annealed Ta/CoFeB/MgO magnetic tunnel junction with standing-wave hard x-ray photoemission. Applied Physics Letters, 2012, 101, .	3.3	64
85	Effects of boron composition on tunneling magnetoresistance ratio and microstructure of CoFeB/MgO/CoFeB pseudo-spin-valve magnetic tunnel junctions. Journal of Applied Physics, 2012, 111, 043913.	2.5	27
86	Perpendicular-anisotropy CoFeB-MgO magnetic tunnel junctions with a MgO/CoFeB/Ta/CoFeB/MgO recording structure. Applied Physics Letters, 2012, 101, .	3.3	255
87	Domain Structure in CoFeB Thin Films With Perpendicular Magnetic Anisotropy. IEEE Magnetics Letters, 2011, 2, 3000304-3000304.	1.1	124
88	Spin-torque switching window, thermal stability, and material parameters of MgO tunnel junctions. Applied Physics Letters, 2011, 98, 162502.	3.3	18
89	Current-induced domain wall motion in perpendicularly magnetized CoFeB nanowire. Applied Physics Letters, 2011, 98, .	3.3	135
90	Junction size effect on switching current and thermal stability in CoFeB/MgO perpendicular magnetic tunnel junctions. Applied Physics Letters, 2011, 99, .	3.3	143

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91	Pd Layer Thickness Dependence of Tunnel Magnetoresistance Properties in CoFeB/MgO-Based Magnetic Tunnel Junctions with Perpendicular Anisotropy CoFe/Pd Multilayers. Applied Physics Express, 2011, 4, 023002.	2.4	48
92	Design and Fabrication of a One-Transistor/One-Resistor Nonvolatile Binary Content-Addressable Memory Using Perpendicular Magnetic Tunnel Junction Devices with a Fine-Grained Power-Gating Scheme. Japanese Journal of Applied Physics, 2011, 50, 063004.	1.5	13
93	Reduction of intrinsic critical current density under a magnetic field along the hard axis of a free layer in a magnetic tunnel junction. Physical Review B, 2011, 84, .	3.2	1
94	Current-induced effective field in perpendicularly magnetized Ta/CoFeB/MgO wire. Applied Physics Letters, 2011, 98, .	3.3	133
95	Origin of the collapse of tunnel magnetoresistance at high annealing temperature in CoFeB/MgO perpendicular magnetic tunnel junctions. Applied Physics Letters, 2011, 99, .	3.3	55
96	Dependence of magnetic anisotropy on MgO thickness and buffer layer in Co ₂₀ Fe ₆₀ B ₂₀ -MgO structure. Journal of Applied Physics, 2011, 109, .	2.5	109
97	Tunnel magnetoresistance properties and annealing stability in perpendicular anisotropy MgO-based magnetic tunnel junctions with different stack structures. Journal of Applied Physics, 2011, 109, .	2.5	16
98	Study of the DC Performance of Fabricated Magnetic Tunnel Junction Integrated on Back-End Metal Line of CMOS Circuits. IEICE Transactions on Electronics, 2010, E93-C, 608-613.	0.6	0
99	A perpendicular-anisotropy CoFeB/MgO magnetic tunnel junction. Nature Materials, 2010, 9, 721-724.	27.5	3,020
100	Transient Characteristic of Fabricated Magnetic Tunnel Junction (MTJ) Programmed with CMOS Circuit. IEICE Transactions on Electronics, 2010, E93-C, 602-607.	0.6	3
101	Tunnel magnetoresistance properties and film structures of double MgO barrier magnetic tunnel junctions. Applied Physics Letters, 2010, 96, .	3.3	49
102	CoFeB Inserted Perpendicular Magnetic Tunnel Junctions with CoFe/Pd Multilayers for High Tunnel Magnetoresistance Ratio. Japanese Journal of Applied Physics, 2010, 49, 04DM04.	1.5	11
103	The Performance of Magnetic Tunnel Junction Integrated on the Back-End Metal Line of Complimentary Metal-Oxide-Semiconductor Circuits. Japanese Journal of Applied Physics, 2010, 49, 04DM06.	1.5	0
104	A 32-Mb SPRAM With 2T1R Memory Cell, Localized Bi-Directional Write Driver and '1'/'0' Dual-Array Equalized Reference Scheme. IEEE Journal of Solid-State Circuits, 2010, 45, 869-879.	5.4	115
105	A nondestructive analysis of the B diffusion in Ta-CoFeB/MgO-CoFeB-Ta magnetic tunnel junctions by hard x-ray photoemission. Applied Physics Letters, 2010, 96, .	3.3	60
106	Electric-field effects on thickness dependent magnetic anisotropy of sputtered MgO/Co ₄₀ Fe ₄₀ B ₂₀ /Ta structures. Applied Physics Letters, 2010, 96, .	3.3	443
107	Magnetic tunnel junction for nonvolatile CMOS logic. , 2010, , .		66
108	MgO barrier-perpendicular magnetic tunnel junctions with CoFe/Pd multilayers and ferromagnetic insertion layers. Applied Physics Letters, 2009, 95, .	3.3	130

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109	Direct measurement of current-induced fieldlike torque in magnetic tunnel junctions. Journal of Applied Physics, 2009, 105, .	2.5	11
110	Perpendicular Magnetic Tunnel Junctions with CoFe/Pd Multilayer Electrodes and an MgO Barrier. IEEE Transactions on Magnetics, 2009, 45, 3476-3479.	2.1	19
111	2 Mb SPRAM (SPin-Transfer Torque RAM) With Bit-by-Bit Bi-Directional Current Write and Parallelizing-Direction Current Read. IEEE Journal of Solid-State Circuits, 2008, 43, 109-120.	5.4	212
112	Tunnel magnetoresistance of 604% at 300K by suppression of Ta diffusion in CoFeB/MgO/CoFeB pseudo-spin-valves annealed at high temperature. Applied Physics Letters, 2008, 93, .	3.3	1,259
113	Current-Induced Magnetization Switching in MgO Barrier Magnetic Tunnel Junctions With CoFeB-Based Synthetic Ferrimagnetic Free Layers. IEEE Transactions on Magnetics, 2008, 44, 1962-1967.	2.1	83
114	Electrical time-domain observation of magnetization switching induced by spin transfer in magnetic nanostructures (invited). Journal of Applied Physics, 2008, 103, 07A723.	2.5	9
115	Effect of electrode composition on the tunnel magnetoresistance of pseudo-spin-valve magnetic tunnel junction with a MgO tunnel barrier. Applied Physics Letters, 2007, 90, 212507.	3.3	293
116	Dependence of tunnel magnetoresistance on ferromagnetic electrode materials in MgO-barrier magnetic tunnel junctions. Journal of Magnetism and Magnetic Materials, 2007, 310, 1937-1939.	2.3	18
117	2-Mb SPRAM design: bi-directional current write and parallelizing-direction current read based on spin-transfer torque switching. Physica Status Solidi (A) Applications and Materials Science, 2007, 204, 3929-3933.	1.8	2
118	Magnetic Tunnel Junctions for Spintronic Memories and Beyond. IEEE Transactions on Electron Devices, 2007, 54, 991-1002.	3.0	460
119	Current-Induced Magnetization Switching in MgO Barrier Based Magnetic Tunnel Junctions with CoFeB/Ru/CoFeB Synthetic Ferrimagnetic Free Layer. Japanese Journal of Applied Physics, 2006, 45, L1057-L1060.	1.5	125
120	Effect of high annealing temperature on giant tunnel magnetoresistance ratio of CoFeB/MgO/CoFeB magnetic tunnel junctions. Applied Physics Letters, 2006, 89, 232510.	3.3	205
121	Fabrication and Evaluation of Magnetic Tunnel Junction with MgO Tunneling Barrier. Japanese Journal of Applied Physics, 2006, 45, 3228-3232.	1.5	1
122	Giant tunnel magnetoresistance and high annealing stability in CoFeB/MgO/CoFeB magnetic tunnel junctions with synthetic pinned layer. Applied Physics Letters, 2006, 89, 042506.	3.3	150
123	Current-driven magnetization reversal in exchange-biased spin-valve nanopillars. Journal of Applied Physics, 2005, 97, 114321.	2.5	8
124	Dependence of Tunnel Magnetoresistance in MgO Based Magnetic Tunnel Junctions on Ar Pressure during MgO Sputtering. Japanese Journal of Applied Physics, 2005, 44, L1442-L1445.	1.5	99
125	Dependence of Giant Tunnel Magnetoresistance of Sputtered CoFeB/MgO/CoFeB Magnetic Tunnel Junctions on MgO Barrier Thickness and Annealing Temperature. Japanese Journal of Applied Physics, 2005, 44, L587-L589.	1.5	242
126	Current-Driven Magnetization Switching in CoFeB/MgO/CoFeB Magnetic Tunnel Junctions. Japanese Journal of Applied Physics, 2005, 44, L1267.	1.5	182

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127	Fabrication of a Nonvolatile Full Adder Based on Logic-in-Memory Architecture Using Magnetic Tunnel Junctions. Applied Physics Express, 0, 1, 091301.	2.4	302
128	Standby-Power-Free Compact Ternary Content-Addressable Memory Cell Chip Using Magnetic Tunnel Junction Devices. Applied Physics Express, 0, 2, 023004.	2.4	73
129	Beyond MRAM: Nonvolatile Logic-in-Memory VLSI. , 0, , 199-230.		1