

Hideo Sato

List of Publications by Year in descending order

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65
papers

2,721
citations

236925

25
h-index

189892

50
g-index

65
all docs

65
docs citations

65
times ranked

2114
citing authors

#	ARTICLE	IF	CITATIONS
1	Perpendicular-anisotropy CoFeB-MgO magnetic tunnel junctions with a MgO/CoFeB/Ta/CoFeB/MgO recording structure. Applied Physics Letters, 2012, 101, .	3.3	255
2	Properties of magnetic tunnel junctions with a MgO/CoFeB/Ta/CoFeB/MgO recording structure down to junction diameter of 11nm. Applied Physics Letters, 2014, 105, .	3.3	240
3	Spin-orbit torque induced magnetization switching in nano-scale Ta/CoFeB/MgO. Applied Physics Letters, 2015, 107, .	3.3	167
4	Junction size effect on switching current and thermal stability in CoFeB/MgO perpendicular magnetic tunnel junctions. Applied Physics Letters, 2011, 99, .	3.3	143
5	Shape anisotropy revisited in single-digit nanometer magnetic tunnel junctions. Nature Communications, 2018, 9, 663.	12.8	141
6	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
7	Enhanced interface perpendicular magnetic anisotropy in Ta CoFeB MgO using nitrogen doped Ta underlayers. Applied Physics Letters, 2013, 102, .	3.3	117
8	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
9	Three terminal magnetic tunnel junction utilizing the spin Hall effect of iridium-doped copper. Applied Physics Letters, 2013, 102, .	3.3	99
10	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
11	Atomic-Scale Structure and Local Chemistry of CoFeB/MgO Magnetic Tunnel Junctions. Nano Letters, 2016, 16, 1530-1536.	9.1	85
12	Spin-orbit torques in high-resistivity-W/CoFeB/MgO. Applied Physics Letters, 2018, 112, .	3.3	77
13	Critical role of W deposition condition on spin-orbit torque induced magnetization switching in nanoscale W/CoFeB/MgO. Applied Physics Letters, 2016, 109, .	3.3	69
14	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
15	Comprehensive study of CoFeB-MgO magnetic tunnel junction characteristics with single- and double-interface scaling down to 1X nm. , 2013, , .		49
16	Temperature-dependent properties of CoFeB/MgO thin films: Experiments versus simulations. Physical Review B, 2018, 98, .	3.2	46
17	Adiabatic spin-transfer-torque-induced domain wall creep in a magnetic metal. Nature Physics, 2016, 12, 333-336.	16.7	43
18	First demonstration of field-free SOT-MRAM with 0.35 ns write speed and 70 thermal stability under 400°C thermal tolerance by canted SOT structure and its advanced patterning/SOT channel technology. , 2019, , .		41

#	ARTICLE	IF	CITATIONS
19	Electrically connected spin-torque oscillators array for 2.4-GHz WiFi band transmission and energy harvesting. Nature Communications, 2021, 12, 2924.	12.8	40
20	A 47.14- μW 200-MHz MOS/MTJ-Hybrid Nonvolatile Microcontroller Unit Embedding STT-MRAM and FPGA for IoT Applications. IEEE Journal of Solid-State Circuits, 2019, 54, 2991-3004.	5.4	39
21	Size Dependence of Magnetic Properties of Nanoscale CoFeB/MgO Magnetic Tunnel Junctions with Perpendicular Magnetic Easy Axis Observed by Ferromagnetic Resonance. Applied Physics Express, 2013, 6, 063002.	2.4	38
22	Atomic structure and electronic properties of MgO grain boundaries in tunnelling magnetoresistive devices. Scientific Reports, 2017, 7, 45594.	3.3	35
23	14ns write speed 128Mb density Embedded STT-MRAM with endurance $> 10^{10}$ and 10yrs retention @ 85°C using novel low damage MTJ integration process. , 2018, , .		33
24	CoFeB Thickness Dependence of Damping Constants for Single and Double CoFeB-MgO Interface Structures. IEEE Magnetics Letters, 2015, 6, 1-3.	1.1	31
25	Magnetotransport measurements of current induced effective fields in Ta/CoFeB/MgO. Applied Physics Letters, 2013, 103, .	3.3	30
26	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
27	Magnetic properties of MgO-[Co/Pt] multilayers with a CoFeB insertion layer. Journal of Applied Physics, 2013, 113, .	2.5	28
28	Spin-orbit torque induced magnetization switching in Co/Pt multilayers. Applied Physics Letters, 2017, 111, .	3.3	26
29	Dual-Port SOT-MRAM Achieving 90-MHz Read and 60-MHz Write Operations Under Field-Assistance-Free Condition. IEEE Journal of Solid-State Circuits, 2021, 56, 1116-1128.	5.4	24
30	Spin-Pumping-Free Determination of Spin-Orbit Torque Efficiency from Spin-Torque Ferromagnetic Resonance. Physical Review Applied, 2019, 12, .	3.8	23
31	Fabrication of a magnetic tunnel junction-based 240-tile nonvolatile field-programmable gate array chip skipping wasted write operations for greedy power-reduced logic applications. IEICE Electronics Express, 2013, 10, 20130772-20130772.	0.8	22
32	Co/Pt multilayer-based magnetic tunnel junctions with a CoFeB/Ta insertion layer. Journal of Applied Physics, 2014, 115, 17C719.	2.5	22
33	Novel Quad interface MTJ technology and its first demonstration with high thermal stability and switching efficiency for STT-MRAM beyond 2Xnm. , 2019, , .		22
34	Perpendicular-anisotropy CoFeB-MgO based magnetic tunnel junctions scaling down to 1X nm. , 2014, , .		20
35	Evaluation of energy barrier of CoFeB/MgO magnetic tunnel junctions with perpendicular easy axis using retention time measurement. Japanese Journal of Applied Physics, 2018, 57, 04FN08.	1.5	20
36	Novel Quad-Interface MTJ Technology and its First Demonstration With High Thermal Stability Factor and Switching Efficiency for STT-MRAM Beyond 2X nm. IEEE Transactions on Electron Devices, 2020, 67, 995-1000.	3.0	19

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37	Magnetic-field-angle dependence of coercivity in CoFeB/MgO magnetic tunnel junctions with perpendicular easy axis. Applied Physics Letters, 2017, 111, .	3.3	18
38	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
39	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
40	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
41	Magnetic Properties of CoFeB/MgO Stacks With Different Buffer-Layer Materials (Ta or Mo). IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	16
42	Magnetic and Free-Layer Properties of MgO/(Co)FeB/MgO Structures: Dependence on CoFeB Composition. IEEE Magnetics Letters, 2017, 8, 1-3.	1.1	16
43	Ferromagnetic resonance in nanoscale CoFeB/MgO magnetic tunnel junctions. Journal of Applied Physics, 2015, 117, 17B708.	2.5	14
44	Magnetization Reversal by Field and Current Pulses in Elliptic CoFeB/MgO Tunnel Junctions With Perpendicular Easy Axis. IEEE Magnetics Letters, 2016, 7, 1-4.	1.1	13
45	Electric-field effect on the easy cone angle of the easy-cone state in CoFeB/MgO investigated by ferromagnetic resonance. Applied Physics Letters, 2018, 112, .	3.3	13
46	Time and spatial evolution of spin-orbit torque-induced magnetization switching in W/CoFeB/MgO structures with various sizes. Japanese Journal of Applied Physics, 2018, 57, 04FN02.	1.5	12
47	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
48	Magnetic domain-wall creep driven by field and current in Ta/CoFeB/MgO. AIP Advances, 2017, 7, .	1.3	10
49	Scalability and wide temperature range operation of spin-orbit torque switching devices using Co/Pt multilayer nanowires. Applied Physics Letters, 2018, 113, .	3.3	10
50	Micromagnetic simulation of the temperature dependence of the switching energy barrier using string method assuming sidewall damages in perpendicular magnetized magnetic tunnel junctions. AIP Advances, 2020, 10, .	1.3	10
51	Advances in spintronics devices for microelectronics — From spin-transfer torque to spin-orbit torque. , 2014, , .		9
52	Damping constant in a free layer in nanoscale CoFeB/MgO magnetic tunnel junctions investigated by homodyne-detected ferromagnetic resonance. Applied Physics Express, 2017, 10, 013001.	2.4	9
53	MgO/CoFeB/Ta/CoFeB/MgO recording structure with low intrinsic critical current and high thermal stability. Journal of the Magnetics Society of Japan, 2014, 38, 56-60.	0.9	9
54	Temperature dependence of intrinsic critical current in perpendicular easy axis CoFeB/MgO magnetic tunnel junctions. Applied Physics Letters, 2021, 119, .	3.3	8

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55	Current-induced magnetization switching in a nano-scale CoFeB-MgO magnetic tunnel junction under in-plane magnetic field. AIP Advances, 2017, 7, 055927.	1.3	7
56	Write-error rate of nanoscale magnetic tunnel junctions in the precessional regime. Applied Physics Letters, 2019, 115, .	3.3	7
57	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
58	Free-layer size dependence of anisotropy field in nanoscale CoFeB/MgO magnetic tunnel junctions. Applied Physics Express, 2018, 11, 043001.	2.4	6
59	Magnetic properties of Co film in Pt/Co/Cr2O3/Pt structure. AIP Advances, 2020, 10, .	1.3	6
60	Non-linear variation of domain period under electric field in demagnetized CoFeB/MgO stacks with perpendicular easy axis. Applied Physics Letters, 2018, 112, .	3.3	5
61	An effect of capping-layer material on interfacial anisotropy and thermal stability factor of MgO/CoFeB/Ta/CoFeB/MgO/capping-layer structure. Applied Physics Letters, 2018, 113, 172401.	3.3	4
62	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
63	Probing edge condition of nanoscale CoFeB/MgO magnetic tunnel junctions by spin-wave resonance. Applied Physics Letters, 2020, 117, 202404.	3.3	3
64	Impact of sputtering condition for tungsten on magnetic and transport properties of magnetic tunneling junction with CoFeB/W/CoFeB free layer. , 2017, , .		0
65	High thermal tolerance synthetic ferrimagnetic reference layer with modified buffer layer by ion irradiation for perpendicular anisotropy magnetic tunnel junctions.. , 2018, , .		0